



13

Report to the BOARD OF AIRPORT COMMISSIONERS

R. J. Connolly
Approver: Richard J. Connolly, Deputy Executive Director
Facilities Management Division

Brian C. Ostler
Reviewer: Brian C. Ostler, City Attorney

Justin Erbacci
Justin Erbacci (Jun 9, 2023 12:56 PDT)
Justin Erbacci, Chief Executive Officer

Meeting Date

6/15/2023

Needs Council Approval: ☒ Y

Reviewed for/by	Date	Approval Status	By
Finance	6/5/2023	<input checked="" type="checkbox"/> Y <input type="checkbox"/> NA	JS
CEQA	6/1/2023	<input checked="" type="checkbox"/> Y	MO
Procurement	6/5/2023	<input checked="" type="checkbox"/> Y <input type="checkbox"/> Cond	SGL
Guest Experience	5/31/2023	<input checked="" type="checkbox"/> Y	TB
Strategic Planning	5/31/2023	<input checked="" type="checkbox"/> Y	BNZ

SUBJECT

Request to award a three-year contract, with two one-year renewal options, to Otis Elevator Company for maintenance, repair, modernization, procurement of materials and parts, and related services for all escalators, elevators, and moving walkways that are owned and operated by Los Angeles World Airports, for an overall amount not to exceed \$88,000,000.

RECOMMENDATIONS

Management RECOMMENDS that the Board of Airport Commissioners:

1. ADOPT the Staff Report.
2. DETERMINE that this action is exempt from the California Environmental Quality Act (CEQA) pursuant to Article III, Class 1 (32) of the Los Angeles City CEQA Guidelines.
3. FIND that the work can be performed more economically or feasibly by an independent contractor than by City employees.
4. APPROVE the award of a three-year contract, with two one-year renewal options, to Otis Elevator Company for maintenance, repair, modernization, material and parts procurement, and related services for all escalators, elevators, and moving walkways that are owned and operated by Los Angeles World Airports, for an overall amount not to exceed \$88,000,000.
5. AUTHORIZE the Chief Executive Officer, or designee, to execute the contract after approval as to form by the City Attorney and approval by the Los Angeles City Council.

DISCUSSION

1. Purpose

The proposed award will establish a time and materials contract with Otis Elevator Company that will assign complete responsibility for the maintenance, repair, modernization, material and parts procurement, and related services for all escalators, elevators, and moving walkways that are owned and operated by Los Angeles World Airports (LAWA), for an overall amount not to exceed \$88,000,000.

2. Prior Related Actions/History of Board Actions

- **September 17, 2013 – Resolution No. 25234 (DA-4856)**

The Board of Airport Commissioners (Board) awarded a five-year contract, with one five-year renewal option, to Otis Elevator Company to maintain approximately 90 elevators, escalators, and moving walkways at Los Angeles International Airport (LAX) in the Bradley West Terminal for an amount not to exceed \$7,683,845. Contract DA-4856 expired on December 31, 2019

- **November 14, 2013 – Resolution No. 25264 (DA-4864)**

The Board awarded a three-year contract to Pacific Coast Elevator Corporation dba Amtech Elevator Services for elevator and escalator parts and service for LAX and Van Nuys Airport (VNY) for an amount not to exceed \$5,925,000 following a competitive procurement process. Contract DA-4864 expired on January 17, 2017.

- **December 1, 2016 – Resolution No. 26121 (DA-5161)**

The Board awarded a three-year contract to Elevators Etc., Inc. for parts and repair services for elevators, escalators, and moving walkways at LAX and VNY for an amount not to exceed \$4,170,000 following a competitive procurement process. Contract DA-5161 was originally due to expire on January 7, 2020, but was amended December 19, 2019 to extend the term by one year.

- **June 27, 2017 – Resolution No. 26237 (DA-5194)**

The Board awarded a five-year contract to Otis Elevator Company (Otis) for extended preventive and routine maintenance and on-call elevator repair services for the 52 elevators and associated parts and equipment installed as part of the “Phase III Elevator Upgrades and Site Modification Project” at LAX for an amount not to exceed \$3,852,255. Per Los Angeles City Charter Section 373, the Los Angeles City Council approved this action on June 27, 2017. The entire contract authority was expended prior to the expiration of its term, and Contract DA-5194 was terminated on February 28, 2022, ahead of its expiration date of July 31, 2022. KONE, Inc. was assigned responsibility for the services under this contract as indicated below for Contract DA-5437.

- **April 5, 2018 – Resolution No. 26458 (DA-5161A)**

The Board approved the First Amendment to Contract DA-5161 with Elevators Etc., Inc. to increase the contract authority by \$5,185,000 for a new total not-to-exceed amount of \$9,355,000 to cover parts and repair services for elevators, escalators, and moving walkways at LAX and VNY.

- **February 25, 2019 – Resolution No. 26696 (DA-5161B)**
The Board approved the Second Amendment to Contract DA-5161 with Elevators Etc., Inc. to increase the contract authority by \$6,277,726 for a new total not-to-exceed amount of \$15,632,726 covering parts and repair services for elevators, escalators, and moving walkways at LAX and VNY.
- **December 19, 2019 – Resolution No. 26906 (DA-5161C)**
The Board approved the Third Amendment to Contract DA-5161 with Elevators Etc., Inc. to extend the term by one year and increase the contract authority by \$3,500,000 for a new total not-to-exceed amount of \$19,132,726. Contract DA-5161C expired on January 7, 2021.
- **February 20, 2020 – Resolution No. 26960 (DA-5437)**
The Board approved a two-year contract with KONE, Inc., under the terms and conditions of Kansas City, Missouri General Services Department Contract EV2516, pursuant to Omnia Partners cooperative arrangement, covering provision of all material, labor, and supervision required for a pilot program to provide full-service maintenance, repair, and related services for elevators, escalators, and moving walkways at LAX and VNY. The contract authority was for a not-to-exceed amount of \$16,850,000. This contract was due to expire on March 16, 2022.
- **October 21, 2021 – Resolution No. 27360 (DA-5437A)**
The Board approved the First Amendment to Contract DA-5437 with KONE, Inc. to extend the term through March 16, 2023, and increase the contract authority by \$11,827,000 for a new total not-to-exceed amount of \$28,677,000, to cover full-service elevator, escalator, and moving walkway maintenance, repair, and related services at LAX and VNY.
- **November 3, 2022 – Resolution No. 27617 (DA-5437B)**
The Board approved the Second Amendment to Contract DA-5437 with KONE, Inc. to extend the contract by six months to September 16, 2023, and increase the contract authority by \$6,240,000 for a new total contract amount not to exceed \$34,917,000, for full-service elevator, escalator, and moving walkway maintenance, repair, and related services at LAX and VNY. This amendment was approved by the Los Angeles City Council on February 22, 2023.

3. Background

The LAWA Facilities Management Division (FMD) is responsible for ensuring elevators, escalators, and moving walkways at LAX and VNY, collectively referred to as conveyances, function safely, reliably, and in compliance with state and federal regulations so as to enhance the experience for LAWA's tenants, passengers, guests, and employees. The make and model of LAWA conveyances vary among manufacturers Otis, Schindler, Kone, and Mitsubishi, with approximately 60 percent of the assets manufactured by Otis. These various systems require that LAWA elevator mechanics have a diverse technical expertise to properly service and maintain the equipment.

Since 2020, LAWA has seen significant growth in facilities whereby its square footage has increased from 8.9 million square feet to 10.9 million square feet. This new footprint now includes the West Gates at the Tom Bradley International Terminal (Bradley West Gates), the Economy Parking Structure, the Airport Police Facility, and Terminal Cores 1.5 and 4.5.

In addition, within the next few years, LAWA expects to add the Midfield Satellite Concourse (MSC) South, which will contain new conveyances that may be turned over to LAWA to maintain prior to the expiration of the new contract. The additional facilities have increased the number of conveyances that must be maintained by approximately 50 percent since 2012 for a current total of 549 Conveyance Assets which consist of 499 conveyances and 50 uninterruptible power supplies.

Although the number of conveyances has increased, LAWA Elevator Shop staffing has not increased proportionately, and staff must rely on the support of a contractor to cover the additional work. Staff from the LAWA Elevator shop have determined that 53 full-time Elevator Mechanics are needed to service and maintain the number of conveyances installed throughout LAX and VNY. There currently are only 28 mechanics employed with LAWA. Since 2018, LAWA staff and the City of Los Angeles Personnel Department have actively engaged in an ongoing Outreach Program to recruit qualified conveyance mechanics. Most recently, in July 2022, these efforts included LAWA sending job bulletins and City employment applications to approximately 1,016 elevator mechanics licensed to work in the City of Los Angeles and the Personnel Department maintaining the civil service examination process open on a continuous basis so qualified candidates may apply at any time. Despite these efforts, there has been no increase in available candidates for appointment to City positions. Los Angeles World Airports staff believe that the lack of interest may stem from compensation rates being lower than other employers and LAWA's 24-hours-a-day, seven-days-per-week working environment.

With the increased workload and low elevator mechanic staff numbers, LAWA has tried to determine the proper level of staff and contractor maintenance. In 2020, the Board approved Contract No. DA-5437 for elevator, escalator, and moving walkway maintenance and repair services, which instituted a pilot program with terms that included a fixed monthly rate for the full-service maintenance of conveyances. During this process, staff committed to the Board that, following the assessment of the pilot full-service program, a new competitive selection process would take place and a longer-term contract would be established.

During the assessment of the pilot full-service program, staff determined that this contracting model did not meet LAWA's needs. Under the full-service model, LAWA paid the vendor a fixed monthly rate, including parts and labor, with a prescribed amount of service, up to certain limitations. These limitations were frequently exceeded and resulted in additional costs due to the high utilization of conveyances. In addition, the predetermined service levels did not align with the goals of the LAWA Elevator Shop, and conveyances did not meet equipment availability performance standards. For these reasons, staff recommend transitioning to a time and material contract model that assigns responsibility for maintenance, repair, modernization, material and parts procurement, and other related services to the vendor. Other leading airports such as Sea-Tac in Seattle, Washington; George Bush Intercontinental Airport in Houston, Texas; Dulles International Airport in Arlington, Virginia; and Newark Liberty International Airport in New Jersey have also established time and materials contracts with third-party vendors for the maintenance of their conveyances.

4. Current Action/Rationale

The FMD staff recommends the award of a three-year contract, with two one-year renewal options, to the Otis Elevator Company (Otis or Contractor), following a competitive selection process conducted through a Request for Proposals (RFP). During the RFP procurement

process, LAWA staff determined that a full-service time and materials conveyance contract with a third-party vendor best suits LAWA's needs. This contract model provides FMD staff with more direct oversight of the contractor's performance and will allow for increases or decreases in service levels as new facilities are placed into operation or as additional elevator mechanics are hired by LAWA.

This contract will also:

1. Ensure responsibility for meeting established levels of conveyance reliability through the design, implementation, and management of preventive maintenance (PM) programs, repairs, and on-site parts inventories by doing the following:
 - a. Keeping all moving walkways in proper working order 95 percent of the time, escalators in proper working order 96 percent of the time, and elevators in proper working order 97 percent of the time. Otis will be required to supply the staffing of a site manager, safety manager, shift supervisors, and conveyance mechanics necessary to meet the commitments in the scope of work. After the first six months of the contract, Otis has agreed that LAWA will enact a monetary penalty for every month that these conveyance commitments fall below the aforementioned percentages.
 - b. Performing daily, weekly, or monthly preventive maintenance as scheduled. Otis will be required to regularly and systematically examine, clean, lubricate, adjust, and make repairs to all LAWA-owned conveyance equipment. Otis must repair or replace all portions of the equipment, including performing work to address normal wear and tear, vandalism, and routine upgrades.
 - c. Otis will be granted access to the Maximo Work Order Management System (Maximo System), LAWA's asset management system, to track preventive maintenance and on-demand work orders. Otis will be required to use this system and any other LAWA-designated system to track scheduled PM, annual Fire Life Safety System testing, and any services required to remain compliant with Los Angeles Fire Department Chief's Regulation 4 (Reg 4).
2. Allow for coordination with FMD's Elevator Shop staff by:
 - a. Preparing and submitting a maintenance control plan and providing to LAWA a weekly report of completed maintenance and inspections, subject to approval of LAWA's designated Contract Administrator.
 - b. Providing general training for LAWA staff necessary to maintain technical familiarity with the different types of manufactured equipment installed at LAWA facilities.

This comprehensive contract will benefit LAWA by providing LAWA's Elevator Shop with direct control of labor and parts expenditures and scheduling of services and by establishing Contractor performance goals. In addition, the new contract will complement staff from the Elevator Shop in maintaining LAWA's conveyances, enhancing the local parts inventory, and providing additional training for LAWA Elevator staff commensurate with the training Otis provides to their staff. Finally, the proposed contract fulfills the commitment that LAWA made to the Board in 2020 to conduct a new competitive selection process and bring a

longer-term contract before the Board following the assessment of the pilot full-service program.

LAWA has maintained all conveyances since 2013 through a combination of its own LAWA Elevator Shop, construction project warranties, extension of warranty agreements, and by contracting for any remaining maintenance needs that could not be absorbed by LAWA elevator shop maintenance staff to an outside elevator maintenance contractor. LAWA staff through this effort intends to consolidate the maintenance, repair, modernization, and procurement of parts, currently done today through various contracts and other means, into one contract, overseen by the LAWA Elevator Shop, for the complete maintenance responsibility of our aging conveyance system infrastructure.

The yearly budgeted expenses for the new contract will remain flat during the first year of the contract for labor, wear and tear parts replacement, and Reg 4 compliance (\$12.48 million current contract vs. \$12.56 million new contract). The transition to the new contract model requires an initial parts inventory purchase during the first year of the agreement that will: (1) bring FMD's parts stock back to adequate levels totaling \$4.4 million; and (2) introduce an enhanced escalator step cleaning program, subcontracted to a Small Business Enterprise subcontractor, averaging \$294,000 per year in expenditures. In addition, LAWA staff included contingency funding over the term of the new contract to account for: (1) major repairs, upgrades, and modernization of the aging infrastructure; (2) equipment expenses for conveyances that will come out of warranty requiring maintenance through this contract; and (3) new conveyances from current construction projects (e.g., MSC South) that will increase both asset counts and contractor staffing if LAWA continues to experience insufficient staffing levels.

The table below illustrates the planned contractual expenses for the total five-year term with Otis Elevator Company:

Planned Contractual Expenses	Yearly Avg.	5-Year Total
Labor (Including Weekends and Holidays)	\$12,100,173	\$60,500,864
Parts (Wear and Tear)	\$1,185,000	\$5,925,000
Parts (Inventory Stock)	\$1,100,000	\$5,500,000
Reg 4 Compliance	\$131,792	\$658,959
Escalator Step Cleaning	\$294,090	\$1,470,450
Major/Emergency Repairs, Modernization, and Upgrades	\$2,788,945	\$13,944,727
Total Planned Contractual Expenses	\$17,600,000	\$88,000,000

Although the ideal and most cost saving scenario is to hire and expand the Elevator Shop, there is a shortage of qualified applicants and/or LAWA's job offering is not attractive enough to attract applicants. Diligent effort in the Outreach Program has not proven successful in meeting LAWA's staffing goals. However, SSD conducted a Charter Section 1022 finding and determined that this contract complies with the requirements of Charter Section 1022. If LAWA can increase staffing with fully-trained conveyance mechanics at any point within the term of this contract, it will have the option to increase or decrease staffing provided by Otis, as necessary.

5. Selection Process

On August 19, 2022, LAWA staff posted the “Elevator, Escalator and Moving Walkways Full Maintenance, Repair, Modernization, Materials and Related Services” Request for Proposals (RFP) on the City of Los Angeles Regional Alliance Marketplace for Procurement (www.rampla.org) website. Statistics provided by the www.rampla.org website show that a notification for this opportunity was sent to 8,132 companies across the country. Out of those companies a total of 66 companies viewed this information online, 19 companies showed an interest by bookmarking this opportunity, and six companies submitted a proposal.

An optional pre-proposal meeting was held on September 7, 2022, at which seven companies attended. An optional site walk was held on September 8, 2022, which the same seven companies attended. Proposals were due on October 28, 2022.

Six out of the seven companies that attended the site walk submitted proposals and the companies were:

- Amtech
- Elevators Etc., Inc.
- Kone, Inc.
- Otis Elevator Company
- Schindler
- TK Elevator

The proposals were reviewed by a four-member evaluation committee comprised of the following LAWA employees.

- Deputy Executive Director, Facilities Management Division
- Airport Manager III
- Director of Maintenance Airports I
- Elevator Repair Supervisor II

The LAWA evaluation committee ranked the six proposals based on the criteria stated in the RFP. After a thorough evaluation of the proposals, it was determined that Otis was the best qualified to perform the services associated with the needs of the Elevator, Escalator and Moving Walkways Full Maintenance, Repair, Modernization, Materials and Related Services RFP, and at the lowest ultimate cost to the City.

The Strategic Sourcing Division (SSD) set the Small Business Enterprise (SBE) program subcontracting participation level at 10 percent. Otis has identified three local certified small businesses that will be retained as subcontractors to perform various tasks from the scope of work to meet the 10 percent SBE goal that was set for this contract. The largest element of work that will be subcontracted is for the scheduled cleaning of escalator steps.

Otis has performed similar services at Detroit Airport, Indianapolis Airport, and Anchorage Airport. They have performed work for LAWA in the recent past servicing the Tom Bradley International Terminal; the Bradley West Gates; Terminals 1, 2, 3, and 5; and several LAWA parking structures. Currently, Otis provides conveyance services for SoFi Stadium in Inglewood, California, and the Getty Center in Los Angeles.

6. Fiscal Impact

Staff will recover costs incurred under this contract through terminal rates and charges, and non-aeronautical revenues. The current contract with KONE, Inc. will expire on September 16, 2023. Eighty-one percent (\$27,990,878) of the \$34,917,000 contract authority has been expended to date.

7. Alternatives Considered

- **Take No Action**
Without a contract in place, staff will be unable to perform the required monthly and annual preventive conveyance maintenance. This may cause conveyance units to malfunction and be out of service for longer periods of time thereby impacting reliability standards and the guest experience.
- **Hire Additional Elevator Mechanics as Permanent LAWA Employees**
Los Angeles World Airports will continue its outreach efforts in search of qualified Elevator Mechanics, but, until LAWA can hire and train new personnel, it will remain dependent on external help.

APPROPRIATIONS

Fund for this contract are available in the Fiscal Year 2022-2023 Los Angeles World Airports Operating Budget in LAX Cost Center 1150067 – Elevator, Escalator, Moving Walkways, Commitment Item 520 – Contractual Services and Commitment Item 522 – Materials & Supplies; VNY Cost Center 1400003 – VNY Construction & Maintenance Services, Commitment Item 522 – Materials & Supplies. Funding for subsequent years will be requested as part of the annual budget process.

STANDARD PROVISIONS

1. Installation, maintenance or modification of mechanical equipment and public convenience devices and facilities which are accessory to the use of the existing structures or facilities and involve the negligible or no expansion of use is exempt from California Environmental Quality Act (CEQA) requirements pursuant to Article III, Class 1 (32) of the Los Angeles City CEQA Guidelines.
2. The proposed document(s) is/are subject to approval as to form by the City Attorney.
3. Actions taken on this item by the Board of Airport Commissioners will become final pursuant to the provisions of Los Angeles City Charter Section 373.
4. Otis Elevator Company will comply with the Service Contractor Worker Retention and/or Living Wage Ordinance.
5. Procurement Services has reviewed this action (File No. 10080) and established a mandatory 10% Small Business Enterprise goal for this project.
6. Otis Elevator Company will comply with the provisions of the Affirmative Action Program.

7. Otis Elevator Company has been assigned Business Tax Registration Certificate No. 0000085366-001-0.
8. Otis Elevator Company will comply with the Child Support Obligations Ordinance.
9. Otis Elevator Company has approved insurance documents, in the terms and amounts required, on file with Los Angeles World Airports.
10. Pursuant to Charter Section 1022, staff determined the work specified on the proposed contract can be performed more feasibly and economically by an Independent Contractor than by City employees.
11. Otis Elevator Company has submitted the Contractor Responsibility Questionnaire and Pledge of Compliance and will comply with the provisions of the Contractor Responsibility Program.
12. Otis Elevator Company has been determined by Public Works, Office of Contract Compliance, to be in full compliance with the provisions of the Equal Benefits Ordinance.
13. This action is not subject to the provisions of the First Source Hiring Program.
14. Otis Elevator Company has submitted the bidder Contributions CEC Form 55 and will comply with its provisions.
15. Otis Elevator Company has submitted the Municipal Lobbying Ordinance CEC Form 50 and will comply with its provisions.
16. Otis Elevator Company will comply with the provisions of the Iran Contracting Act.

**CONTRACT BETWEEN THE CITY OF LOS ANGELES AND
OTIS ELEVATOR COMPANY FOR THE MAINTENANCE, REPAIR AND
MODERNIZATION OF THE ELEVATORS, ESCALATORS AND MOVING
WALKWAYS AT LOS ANGELES INTERNATIONAL AIRPORT
AND VAN NUYS AIRPORT**

THIS CONTRACT ("Contract"), made and entered into this _____ day of _____, 2023 ("Effective Date"), at Los Angeles, California by and between the **CITY OF LOS ANGELES**, a municipal corporation and charter city (the "City"), acting by order of and through its Board of Airport Commissioners (the "Board") of the Department of Airports (also known as Los Angeles World Airports or "LAWA"), and **OTIS ELEVATOR COMPANY**, with its principal place of business located in Los Angeles, California 90065 ("Contractor"). City and Contractor are collectively referred to herein as "Parties."

RECITALS

WHEREAS, the City desires to obtain the full maintenance, repair and modernization of the elevators, escalators and moving walkways (collectively, "Conveyance Systems") and the purchase of related materials, parts and equipment, as well as required annual Los Angeles Fire Department Chief Regulation No. 4 Testing Procedures (LAFD Reg 4)("Products and Services"), at Los Angeles International Airport ("LAX") and Van Nuys Airport ("VNY")(collectively, "Airports"); and

WHEREAS, LAWA, by action of the Board, approved and authorized the issuance of a Request for Proposal ("RFP") for the above referenced Products and Services; and

WHEREAS, LAWA is responsible for the management and administration of this Contract; and

WHEREAS, LAWA selected Contractor based on the criteria set forth in the RFP; and

WHEREAS, Contractor represents that it is engaged, and expert in, the business of performing such Services and providing the associated Products under the terms and conditions set forth herein; and

WHEREAS, LAWA will designate its representative(s) to work with Contractor, and thereupon it will be incumbent upon Contractor to, at all times, keep said LAWA representative(s) fully informed of all Services-related activities

NOW THEREFORE, that for and in consideration of the covenants and conditions hereinafter contained to be kept and performed by the respective Parties hereto, IT IS MUTUALLY AGREED AS FOLLOWS:

Section 1.0 Incorporation by Reference. It is expressly understood and agreed that the following Attachments have been marked, and are by this reference, incorporated into and made a material part of this Contract: Attachment 1 - Scope of Work; Attachment 2 - Contractor's Price Proposal; Attachment 3 - Los Angeles Fire Department Chief Regulation No. 4 Testing Procedures (LAFD Reg 4); Attachment 4 - Full Conveyance; and Attachment 5 - Critical Conveyance List. It is further expressly understood and agreed that the RFP (including its Administrative Requirements, Specifications and Addenda), the Contractor's Proposal and its submitted Proposal documents and any bonds required under the RFP, shall constitute, and are hereby incorporated, and made a part of this Contract, and each of the Parties hereto does hereby expressly covenant and agree to carry out and fully perform each and all of the provisions of said documents upon its part to be performed. Contractor also expressly acknowledges that this Contract is based upon the performance requirements contained in the RFP documents issued by LAWA. If there is a conflict between the RFP and Contractor's Proposal, the RFP will prevail.

Section 2.0 Term of Contract.

2.1 Notwithstanding any other provision in this Contract, the term of this Contract shall commence on the Effective Date, and shall expire no later than three (3) years thereafter (the "Term"); subject, however, to earlier termination pursuant to the terms of this Contract.

2.2 The Chief Executive Officer of LAWA or his or her designee (the "CEO") shall have the right in his or her sole and absolute discretion to extend the Term for up to two (2) consecutive one (1) year periods. In order to exercise such right to extend the Term, the CEO shall give written notice of such election to extend, as to each such one (1) year extension period, not less than ninety (90) days prior to the date that such extension period would commence. Each such extension shall be on the same terms and conditions as set forth in this Contract.

Section 3.0 Contractor's Fee and Payment; Contractor's Payments.

3.1 Contractor agrees to provide all supplies, materials, parts, labor, labor supervision, tools, scaffolding, machinery, hoists, equipment (including employee safety equipment), lubricant, and technical information necessary to provide for the full and complete maintenance, repair and modernization of the Conveyance Systems at the Airports (and associated training of LAWA Elevator Shop staff to the extent made available to Contractor's staff), as well as required annual LAFD Reg 4 Testing of all elevators at the Airports, in strict compliance with Attachment 1 - Scope of Work and in accordance with the contractual terms, conditions and specifications set forth in the RFP and Contractor's Proposal and the price(s) contained in Attachment 2 - Contractor's Price Proposal.

3.2 For all labor, materials, equipment and Services rendered, for all costs, direct or indirect, and for all expenses incurred by Contractor pursuant to this Contract, City shall pay Contractor on a time and material basis and in accordance with the contractual terms set forth in Attachment 1 - Scope of Work and the all-inclusive hourly rates set forth in Attachment 2 - Contractor's Price Proposal. Said all-inclusive hourly rates in Attachment 2 - Contractor's Price

Proposal shall include, without limitation, all provisions for compensation, fringe benefits, overhead, insurance, materials, supplies, communications, general/non-inclusive reproduction, courier service, local travel (within 100 miles of LAX), general administration, other overhead expenses, profits, fees, other direct cost(s), and all out-of-pocket expenses, unless otherwise expressly provided in Attachment 2 – Contractor’s Price Proposal. City shall not pay any additional sums or supplemental rates of pay for “overtime” for services unless otherwise expressly provided for in Attachment 2 – Contractor’s Price Proposal.

3.3 Regardless of other provisions of this Contract, it is understood and agreed that the total sum to be paid by City to Contractor for all of Contractor’s Products and Services, as described in Attachment 1 - Scope of Work, an overall amount not to exceed Eighty Eight Million and 00/100 Dollars (\$88,000,000.00) for the Term of this Contract. Contractor shall submit to LAWA requests for payment of the amount(s) due, upon completion to LAWA’s satisfaction of the services rendered at LAX. City shall pay Contractor for its performance under this Contract the sum hereinabove set forth, at the times and in the manner specified, if so, in the aforesaid invoice instructions and Specifications, subject to LAWA’s right to withhold specified amounts from the monthly billing cycle should Contractor fail to meet required availability performance requirements as detailed in the “Equipment Availability” section of Attachment 1 – Scope of Work.

3.4 LAWA reserves the right to require additional substantiation of any invoice or payment request submitted if, in the opinion of the CEO, such would be in the best interests of LAWA. In order to verify charges incurred and invoiced by Contractor in the performance of this Contract, Contractor agrees to make pertinent books and records available to LAWA at LAWA’s Office at the address listed below upon fifteen (15) days’ notice. The aforesaid records shall not include any proprietary records of Contractor.

3.5 The City shall, upon receipt and following approval of each payment request, remit to Contractor, at the address specified in this Contract, the appropriate amount.

3.6 LAWA shall not be required to make payment for Services or Products not yet provided or received, nor for services deemed unsatisfactory by LAWA. The Parties agree that the CEO of LAWA shall make the final determination as to when Contractor’s services, or any part thereof, have been satisfactorily performed or completed to justify release of any given payment to Contractor under this Contract.

3.7 If a necessary change causes an increase in the scope of work or services to be performed by Contractor pursuant to this Contract, then the Parties hereto shall first agree upon additional compensation, if any, to be paid to Contractor therefore, and this Contract shall be amended, in writing, prior to the performance by Contractor of said increased work or services.

3.8 Contractor shall promptly pay, when due, any and all amounts payable for labor and material furnished in the performance of this Contract, so as to prevent or make unnecessary the filing of any claim, lien, or notice to withhold, as provided under and by virtue of the

applicable provisions of the California Civil Code (commencing with Section 9000), and Contractor shall promptly pay all amounts due under the Unemployment Insurance Act with respect to such work or labor.

3.9 Progress Payments. The Contractor agrees to pay each subcontractor under this prime contract, and require the same of its subcontractors, not later than seven (7) days after receipt of each progress payment, the respective amounts allowed the Contractor on account of work performed by the subcontractors, to the extent each subcontractor's interest therein pursuant to California Business & Professions Code Section 7108.5.

3.10 Retention/Final Payment. Within seven (7) days from the time that all or any portion of the retention proceeds are received by the Contractor, the Contractor shall pay each of its subcontractors from whom retention has been withheld, each subcontractor's share of the retention received, and require the same of its subcontractors, pursuant to the terms of California Public Code Section 7107.

3.11 LAWA is not obligated to pay for Contractor's time, mileage, or other expenses associated with travel unless specifically authorized by advance written notice from LAWA. All travel must be in conformity with Los Angeles Administrative Code §§ 4.220 through 4.242.8.

Section 4.0 Professional Standards. All work performed and services provided hereunder by Contractor shall be consistent with highest professional standards of the conveyance maintenance and service industry.

Section 5.0 Staffing and Personnel. If Contractor's Proposal includes a proposal team which is to work on this Contract, then any changes to the contract team ("Contract Team") shall only be made after written request by Contractor to the CEO and shall be subject to the CEO's prior written approval. If written request for change is made, Contractor shall provide any documentation requested by the CEO for review and approval. Any such request for changes to the Contract Team may be disapproved by the CEO, but such approval shall not be exercised so as to unreasonably deprive Contractor of its right to make appropriate work assignments.

Section 6.0 Notices.

6.1 Notice to the City. Written notices to LAWA hereunder, with a copy to the City Attorney of the City of Los Angeles, Airport Division, shall be given by registered or certified mail, postage prepaid, and addressed to:

**Department of Airports
1 World Way
Post Office Box 92216
Los Angeles, CA 90009-2216**

**Office of City Attorney
1 World Way
P.O. Box 92216
Los Angeles, CA 90009-2216**

or to such other address as LAWA may designate by written notice to Contractor.

6.2 Notice to Contractor. Written notices to Contractor hereunder shall be given by registered or certified mail, postage prepaid, and addressed to:

**Otis Elevator Company
Attn: Ross Peare, Regional Sales Manager
2701 Media Center Drive, Suite 2
Los Angeles, CA 90065**

or to such other address as Contractor may designate by written notice to City.

6.3 The execution of any notice(s) by the CEO shall be effective as to Contractor as if said notice(s) were executed by the Board, or by Resolution or Order of said Board, and Contractor shall not question the authority of the CEO to execute any such notice(s).

6.4 All such notices, except as otherwise provided herein, may either be delivered personally to the CEO, with a copy to the Office of the City Attorney, Airport Division, in the one case, or to Contractor in the other case, or may be deposited in the United States mail, properly addressed as aforesaid, with postage fully prepaid, by certified or registered mail, return receipt requested, and shall be effective five (5) days after deposit in the mail.

Section 7.0 City Held Harmless.

7.1 To the fullest extent permitted by law, Contractor shall defend, indemnify and hold harmless the City and any and all of the City's boards, officers, agents, employees, assigns and successors in interest from and against any and all suits, claims, causes of action, liability, losses, damages, demands or expenses (including, but not limited to, attorney's fees and costs of litigation), claimed by anyone (including Contractor and/or Contractor's agents or employees) by reason of injury to, or death of, any person(s) (including Contractor and/or Contractor's agents or employees), or for damage to, or destruction of, any property (including property of Contractor and/or Contractor's agents or employees) or for any and all other losses, founded upon or alleged to arise out of, pertain to, or relate to the Contractor's and/or Sub-Contractor's performance of the Contract, whether or not contributed to by any act or omission of the City, or of any of the City's boards, officers, agents or employees; provided, however, that where such suits, claims, causes of action, liability, losses, damages, demands or expenses arise from or relate to Contractor's performance of a "Construction Contract" as defined by California Civil Code section 2783, this paragraph shall not be construed to require Contractor to indemnify or hold the City harmless to the extent such suits, causes of action, claims, losses, demands and expenses are caused by the City's sole negligence, willful misconduct or active negligence.

7.2 To the fullest extent permitted by law, LAWA shall defend, indemnify and hold harmless the Contractor from any and all claims, damages, losses, costs, and expenses (including reasonable attorney's fees and other litigation costs) against the Contractor which arise from or relate to LAWA staff's acts or omissions, or the acts or omissions of third parties under LAWA staff's direction or control, for actions taken solely as a result of any training conducted and

made available by the Contractor to LAWA staff. These obligations shall apply with respect to claims of injury or damage caused by LAWA staff or those acting on their behalf, and includes, but is not limited to, claims asserted by Contractor's employees or LAWA's staff, whether or not such injuries or damage may be covered by any applicable workers compensation statute. LAWA's obligations under this provision, however, do not extend to claims of injury or damage: (i) caused by Contractor or those acting on its behalf that are based, in whole or in part, on any training conducted and made available by the Contractor to Contractor's employees or third parties under Contractor's direction or control, and includes, but is not limited to, claims asserted by Contractor's employees or LAWA's staff, whether or not such injuries or damage may be covered by any applicable workers compensation statute; or (ii) that are based, in whole or in part, on Contractor's gross negligence, willful misconduct, or fraud.

7.3 In addition, Contractor agrees to protect, defend, indemnify, keep and hold harmless the City, including its boards, departments and the City's officers, agents, servants and employees, from and against any and all claims, damages, liabilities, losses and expenses arising out of any threatened, alleged or actual claim that the end product provided to LAWA by Contractor violates any patent, copyright, trade secret, proprietary right, intellectual property right, moral right, privacy, or similar right, or any other rights of any third party anywhere in the world. Contractor agrees to, and shall, pay all damages, settlements, expenses and costs, including costs of investigation, court costs and attorney's fees, and all other costs and damages sustained or incurred by the City arising out of, or relating to, the matters set forth above in this paragraph of the City's "Hold Harmless" agreement.

7.4 In Contractor's defense of the City under this Section, negotiation, compromise, and settlement of any action, the City shall retain discretion in and control of the litigation, negotiation, compromise, settlement, and appeals there from, as required by the Los Angeles City Charter, particularly Article II, Sections 271, 272 and 273 thereof.

7.5 Survival of Indemnities. The provisions of this Section shall survive the termination of this Agreement or the contract under which the work or services are performed.

Section 8.0 Hazardous and Other Regulated Substances.

8.1 Contractor agrees to accept sole responsibility for full compliance with any and all applicable and future rules, regulations, restrictions, ordinances, statutes, laws and/or other orders of any governmental entity regarding the use, storage, handling, distribution, processing and/or disposal of hazardous wastes, extremely hazardous wastes, hazardous substances, hazardous materials, hazardous chemicals, toxic chemicals, toxic substances, pollutants, contaminants, or other similarly regulated substances (collectively, "hazardous substances") regardless of whether the obligation for such compliance or responsibility is placed on the owner of the land, on the owner of any improvements on the premises, on the user of the land, or on the user of the improvements. Said hazardous substances shall include, but shall not be limited to, gasoline, aviation, diesel and jet fuels, lubricating oils and solvents.

8.2 Contractor agrees that any damages, penalties or fines levied on City and/or Contractor as a result of noncompliance with any of the above shall be the sole responsibility of Contractor and, further, that Contractor shall indemnify and pay and/or reimburse City for any damages, penalties or fines that City incurs, or pays, as a result of noncompliance with the above.

8.3 In the case of any hazardous substance spill, leak, discharge or improper storage on the premises, or contamination of same, by any person, Contractor agrees to make, or cause to be made, any necessary repairs or corrective actions, as well as to cleanup and remove any leakage, contamination or contaminated ground. In the case of any hazardous substance spill, leak, discharge or contamination by Contractor, or by any of its employees, agents, contractors or subcontractors which affects other property of City, or property(ies) of City's tenant(s), Contractor agrees to make, or cause to be made, any necessary repairs, or take corrective actions, to cleanup and remove any such spill, leakage or contamination to the satisfaction of the CEO.

8.4 If Contractor fails to repair, cleanup, properly dispose of, or take any other corrective action(s) as required herein, City may (but shall not be required to), take all steps it deems reasonably necessary to properly repair, cleanup or otherwise correct the condition(s) resulting from the spill, leak or contamination. Any such repair, cleanup or corrective action(s) taken by City shall be at Contractor's sole cost and expense, as well as shall any and all costs (including any administrative costs) which City incurs, or pays, as a result of any repair, cleanup or corrective action it takes.

8.5 If Contractor installs or uses already installed underground storage tanks, pipelines or other improvements on the specified premises for the storage, distribution, use, treatment or disposal of any hazardous substances, Contractor agrees, upon the expiration and/or termination of this Contract, to remove and/or cleanup, at the sole option of the CEO, the above-referred to improvements. Said removal and/or cleanup shall be at Contractor's sole cost and expense, and shall be undertaken and completed in full compliance with all federal, state and local laws and regulations, as well as in compliance with the reasonable directions of the CEO.

8.6 Contractor shall promptly supply City with copies of all notices, reports, correspondence and submissions made by Contractor to any governmental entity regarding any hazardous substance spill, leak, discharge or clean-up, including all test results.

8.7 This Section, and the obligation(s) contained therein, shall survive the expiration or earlier termination of this Contract.

Section 9.0 Restrictions and Regulations.

9.1 Contractor shall be solely responsible for fully complying with any and all applicable present and/or future rules, regulations, restrictions, ordinances, statutes, laws and/or orders of any federal, state, and/or local government authority.

9.2 Contractor shall be solely responsible for fully complying with any and all applicable present and/or future orders, directives, or conditions issued, given or imposed by the CEO which are now in force or which may be hereafter adopted by the Board and/or the CEO with respect to the operation of the Airport.

9.3 Contractor shall be solely responsible for any and all civil and/or criminal penalties assessed as a result of its failure to comply with any of these rules, regulations, restrictions, ordinances, statutes, laws, orders, directives and or conditions.

Section 10.0 Independent Contractor.

10.1 It is the express intention of the Parties that Contractor is an independent contractor and not an employee, agent, joint venturer or partner of LAWA. Nothing in this Contract shall be interpreted or construed as creating or establishing the relationship of employer and employee between Contractor and LAWA, or between Contractor and any official, agent, or employee of LAWA. Both Parties acknowledge that Contractor is not an employee of LAWA.

10.2 Contractor shall retain the right to perform services for others during the term of this Contract, unless specified to the contrary herein or prohibited by conflict of interest or ethics laws, regulations, or professional rules of conduct.

Section 11.0 Assignment or Transfer Prohibited.

11.1 Contractor shall not, in any manner, directly or indirectly, by operation of law or otherwise, hypothecate, assign, transfer, or encumber this Contract, or any portion thereof or any interest therein, in whole or in part, without the prior, written consent of the CEO.

11.2 For purposes of this Contract, the terms "transfer" and "assign" shall include, but not be limited to, the following: (i) if Contractor is a joint venture, a limited liability company, or a partnership, the transfer of fifty percent (50%) or more of the interest or membership in the joint venture, the limited liability company, or the partnership; (ii) if Contractor is a corporation, any cumulative or aggregate sale, transfer, assignment, or hypothecation of fifty percent (50%) or more of the voting shares of Contractor; (iii) the dissolution by any means of Contractor; and, (iv) a change in business or corporate structure. Any such transfer, assignment, mortgaging, pledging, or encumbering of Contractor without the written consent of the CEO is a violation of this Contract and shall be voidable at LAWA's option and shall confer no right, title, or interest in or to this Contract upon the assignee, mortgagee, pledgee, encumbrancer, or other lien holder, successor, or purchaser.

Section 12.0 Default and Right of Termination.

12.1 Termination for Convenience. LAWA may terminate this Contract, with or without cause and without liability for costs or damages of any kind, upon giving the Contractor a thirty (30) day advance written notice or as otherwise provided herein.

12.2 Termination for Cause. In the event Contractor fails to abide by the terms, covenants and conditions of this Contract, or if the services and/or delivery of materials under this Contract fall below an acceptable level as determined by LAWA, LAWA shall notify the Contractor in writing of the defect, default or problem. If the same is not corrected, or substantial steps are not taken toward accomplishing such correction within two (2) calendar days after LAWA's mailing of the notification, LAWA may, at its sole discretion, (a) terminate this Contract forthwith upon giving Contractor a ten (10) day written notice, or (b) withhold any further payment for Contractor's services until such defect, default or problem is corrected within the time specified by LAWA. If the defect, default or problem is still not corrected within that time, LAWA may terminate the Contract forthwith by giving Contractor a ten (10) day written notice.

12.3 Upon notice (written or otherwise) to the Contractor of LAWA's decision to terminate the contract, the Contractor shall immediately surrender to LAWA all LAWA property including, but not limited to, items of authority (badges, permits, etc. issued by LAWA) that are in the possession, custody, and care of the Contractor and/or its agent(s).

Section 13.0 Advertisements. Contractor shall not, at any time, under any circumstances, install, place, or maintain any type of advertising, on or at the Airport.

Section 14.0 Compliance With Applicable Laws.

14.1 Contractor shall, at all times during the performance of its obligations under this Contract, comply with all applicable present and/or future local, LAWA, State and Federal laws, statutes, ordinances, rules, regulations, restrictions and/or orders, including the hazardous waste and hazardous materials regulations, and the Americans With Disabilities Act of 1990. Contractor shall be solely responsible for any and all damages caused, and/or penalties levied, as the result of Contractor's noncompliance with such enactments. Further, Contractor agrees to cooperate fully with the City in its efforts to comply with the Americans With Disabilities Act of 1990 and any amendments thereto, or successor statutes.

14.2 Should Contractor fail to comply with this Section, then LAWA shall have the right, but not the obligation, to perform, or have performed, whatever work is necessary to achieve equal access compliance. Contractor will then be required to reimburse LAWA for the actual cost of achieving compliance, plus a fifteen percent (15%) administrative charge.

Section 15.0 Business Tax Registration.

15.1 Contractor represents that it has registered its business with the City Clerk of City and has obtained, and presently holds, from that Office a Business Tax Registration Certificate, or a Business Tax Exemption Number, required by the City's own Business Tax Ordinance (Article 1, Chapter 2, Sections 21.00 and following, of City's Municipal Code).

15.2 Contractor shall maintain, or obtain as necessary, all such Certificates required of it under said Ordinance and shall not allow any such Certificate to be revoked or suspended during the term hereof.

Section 16.0 Insurance.

16.1 Contractor shall procure at its expense, and keep in effect at all times during the term of this Contract, the types and amounts of insurance specified on the Insurance Requirements for Los Angeles World Airports, Attachment 6, attached hereto and incorporated by reference herein.

16.2 The specified insurance (except for Workers' Compensation and Employers' Liability) shall also, either by provisions in the policies, by the City's own endorsement form or by other endorsement attached to such policies, include and insure the City, LAWA, the Board, and all of its officers, employees and agents, their successors and assigns, as additional insureds, against the areas of risk described in this Section as respects Contractor's acts or omissions arising out of the performance of this Contract, Contractor's acts or omissions in its operations, use and occupancy of the premises hereunder or other related functions performed by or on behalf of Contractor at the Airport.

16.3 Waiver of Subrogation. For Commercial General Liability Insurance, Workers' Compensation Insurance, and Employers' Liability Insurance, the insurer shall agree to waive all rights of subrogation against City for losses arising from activities and operations of Contractor insured in the performance of Services under this Contract.

16.4 Sub-contractors. Contractor shall include all of its sub-contractors as insureds under its policies and shall furnish separate certificates and endorsements for each sub-contractor. All coverages for sub-contractors shall be subject to all of the requirements stated herein unless otherwise agreed to in writing by the CEO and approved as to form by the City Attorney.

16.5 Each specified insurance policy (other than Workers' Compensation and Employers' Liability) shall contain a Severability of Interest (Cross Liability) clause which states, "It is agreed that the insurance afforded by this policy shall apply separately to each insured against whom claim is made, or suit is brought, except with respect to the limits of the company's liability." Additionally, Contractor's Commercial General Liability policy ("Policy") shall provide Contractual Liability Coverage, and such insurance as is afforded by the Policy shall also apply to the tort liability of the City assumed by the Contractor under this Contract.

16.6 All such insurance shall be primary and noncontributing with any other insurance held by LAWA where liability arises out of, or results from, the acts or omissions of Contractor, its agents, employees, officers, invitees, assigns, or any person or entity acting for, or on behalf of, Contractor.

16.7 Such policies may provide for reasonable deductibles and/or retentions acceptable to the CEO, based on the nature of Contractor's operations and the type of insurance involved.

16.8 City shall have no liability for any premiums charged for such coverage(s). The inclusion of the City, LAWA, its Board, and all of its officers, employees and agents, and their agents and assigns, as additional insureds, is not intended to, and shall not, make them, or any of them, a partner or joint venturer of Contractor in its operations at the Airport.

16.9 In the event Contractor fails to furnish LAWA evidence of insurance, or to maintain the insurance as required under this Section, LAWA, upon ten (10) days' prior written notice to Contractor of its intention to do so, shall have the right to secure the required insurance at the cost and expense of Contractor, and Contractor agrees to promptly reimburse City for the cost thereof, plus fifteen percent (15%) for administrative overhead.

16.10 At least ten (10) days prior to the expiration date of any of the above policies, documentation showing that the insurance coverage has been renewed or extended shall be filed with City. If any such coverage is cancelled or reduced, Contractor shall, within fifteen (15) days of such cancellation or reduction of coverage, file with LAWA evidence that the required insurance has been reinstated, or is being provided through another insurance company or companies.

16.11 Contractor shall provide proof of all specified insurance and related requirements to LAWA either by production of the actual insurance policy(ies), by use of LAWA's own endorsement form(s), by broker's letter acceptable to the CEO in both form and content in the case of foreign insurance syndicates, or by other written evidence of insurance acceptable to the CEO. The documents evidencing all specified coverages shall be filed with LAWA prior to the Contractor performing the Services hereunder. Such documents shall contain the applicable policy number(s), the inclusive dates of policy coverage(s), the insurance carrier's name(s), and they shall bear an original or electronic signature of an authorized representative of said carrier(s). Should any of the above required policies be cancelled before the expiration date thereof, notice will be given in accordance with the policy provisions.

16.12 City and Contractor agree that the insurance policy limits specified in this Section shall be reviewed for adequacy annually throughout the term of this Contract by the CEO, who may thereafter require Contractor to adjust the amount(s) of insurance coverage(s) to whatever amount(s) the CEO deems to be adequate. LAWA reserves the right to have submitted to it, upon request, all pertinent information about the agent(s) and carrier(s) providing such insurance.

Section 17.0 Disabled Access.

17.1 As directly related to Contractor's responsibilities with regard to this Contract, Contractor shall be solely responsible for fully complying with any and all applicable present and/future rules, regulations, restrictions, ordinances, statutes, laws, and/or orders of any federal, state, and/or local governmental entity and/or court regarding disabled access including any

services, programs, improvements or activities provided by Contractor. Contractor shall be solely responsible for any and all damages caused by, and/or penalties levied as the result of, Contractor's noncompliance. Further, Contractor agrees to cooperate fully with the City in its efforts to comply with the Americans With Disabilities Act of 1990 and any amendments thereto, or successor statutes.

17.2 Should Contractor fail to comply with Section 17.1, if applicable, then LAWA shall have the right, but not the obligation, to perform, or have performed, whatever work is necessary to achieve equal access compliance. Contractor will then be required to reimburse LAWA for the actual cost of achieving compliance, plus a fifteen percent (15%) administrative charge.

Section 18.0 Nondiscrimination and Equal Employment Practices/Affirmative Action Program.

18.1 During the term of this Contract, Contractor agrees and obligates itself in the performance of this Contract not to discriminate against any employee or applicant for employment because of the employee's or applicant's race, religion, national origin, ancestry, sex, sexual orientation, age, physical handicap, marital status, domestic partner status, or medical condition. Contractor shall take affirmative action to ensure that applicants for employment are treated, during the term of this Contract, without regard to the aforementioned factors and Contractor shall comply with the affirmative action requirements of Los Angeles Administrative Code Sections 10.8, et seq., or any successor ordinances or laws pertaining to discrimination.

18.2 During the performance of this Contract, Contractor agrees to comply with Section 10.8.3 of the Los Angeles Administrative Code ("Equal Employment Practices"), including any future amendments thereto, which is incorporated herein by this reference. By way of specification, but not limitation, pursuant to Sections 10.8.3.E and 10.8.3.F of said Administrative Code, the failure of Contractor to comply with the Equal Employment Practices provisions of this Contract may be deemed to be a material breach of this Contract. No such finding shall be made, nor penalties assessed, except upon a full and fair hearing after notice and an opportunity to be heard has been provided to Contractor. Upon a finding duly made that Contractor has failed to comply with said Equal Employment Practices provisions of this Contract, this Contract may be forthwith terminated, cancelled or suspended.

18.3 During the performance of this Contract, Contractor agrees to comply with Section 10.8.4 of the Los Angeles Administrative Code ("Affirmative Action Program"), including any future amendments thereto, which is incorporated herein by this reference. By way of specification, but not limitation, pursuant to Sections 10.8.4.E and 10.8.4.F of said Administrative Code, the failure of Contractor to comply with the Affirmative Action Program provisions of this Contract may be deemed to be a material breach of this Contract. No such finding shall be made, nor penalties assessed, except upon a full and fair hearing after notice and an opportunity to be heard has been provided to Contractor. Upon a finding duly made that

Contractor has failed to comply with the Affirmative Action Program provisions of this Contract, this Contract may be forthwith terminated, cancelled or suspended.

18.4 All subcontracts awarded under this Contract shall contain similar provisions and Contractor shall require each of its subcontractors to complete a like certification and to submit to it an Affirmative Action Plan acceptable to LAWA.

18.5 Contractor also agrees to comply with the provisions of Article 3 of Chapter 1, Part 7, Division 2 of the Labor Code of the State of California, and with all other applicable statutes, ordinances, and regulations relative to employment, wages, and hours of labor.

Section 19.0 Child Support Orders.

19.1 This Contract is subject to Section 10.10, Article I, Chapter 1, Division 10 of the Los Angeles Administrative Code, related to Child Support Assignment Orders, which is incorporated herein by this reference. Pursuant to this section, Contractor (and any subcontractor of Contractor providing services to the City under this Contract) shall (1) fully comply with all State and Federal employment reporting requirements for Contractor's, or Contractor's subcontractor's, employees applicable to Child Support Assignments Orders; (2) certify that the principal owner(s) of Contractor and applicable subcontractors are in compliance with any Wage and Earnings Assignment Orders and Notices of Assignment applicable to them personally; (3) fully comply with all lawfully served Wage and Earnings Assignment Orders and Notices of Assignment in accordance with California Family Code Section 5230, et seq.; and (4) maintain such compliance throughout the term of this Contract.

19.2 Pursuant to Section 10.10(b) of the Los Angeles Administrative Code, failure of Contractor, or an applicable subcontractor, to comply with all applicable reporting requirements, or to implement lawfully served Wage and Earnings Assignment Orders and Notices of Assignment, or the failure of any principal owner(s) of Contractor or applicable subcontractors to comply with any Wage and Earnings Assignment Orders and Notices of Assignment applicable to them personally, shall constitute a default of this Contract, thereby subjecting this Contract to termination, where such failure(s) shall continue for more than ninety (90) days after notice of such failure(s) to Contractor by LAWA (in lieu of any time for cure provided elsewhere in this Contract).

Section 20.0 Contractor Responsibility Program.

20.1 Pursuant to Resolution No. 21601 adopted by the Board of Airport Commissioners, effective May 20, 2002, it is the policy of LAWA to ensure that all LAWA contractors have the necessary quality, fitness and capacity to perform the work set forth in the contract. LAWA shall award contracts only to entities and individuals it has determined to be Responsible Contractors. The provisions of this Program apply to leases and contracts for construction, for services, and for purchases of goods and products that require Board approval.

20.2 Bidders/Proposers are required to complete and submit with the bid/proposal the attached "Contractor Responsibility Program Questionnaire" that provides information LAWA needs in order to determine if the bidder/proposer is responsible and has the capability to perform the contract. The information contained in the CRP Questionnaire is subject to public review for a period of not less than fourteen (14) days. Bidders/Proposers are also required to complete, sign and submit with the bid/proposal the attached "Contractor Responsibility Program Pledge of Compliance." Bidders/Proposers are also required to respond within the specified time to LAWA's request for information and documentation needed to support a Contractor Responsibility determination. Subcontractors will be required to submit the Pledge to the prime contractor prior to commencing work. The CRP Rules and Regulations are available at <http://www.lawa.org>.

Section 21.0 Equal Benefits Ordinance (EBO).

21.1 Unless otherwise exempt in accordance with the provisions of the Equal Benefits ("EBO") Ordinance, this Contract is subject to the applicable provisions of EBO Section 10.8.2.1 of the Los Angeles Administrative Code, as amended from time to time.

21.2 During the term of this Contract, Contractor certifies and represents that the Contractor will comply with the EBO. Furthermore, Contractor agrees to post the following statement in conspicuous places at its place of business available to employees and applicants for employment:

'During the term of a Contract with the City of Los Angeles, the Contractor will provide equal benefits to employees with spouses and its employees with domestic partners. Additional information about the City of Los Angeles' Equal Benefits Ordinance may be obtained from the Department of Public Works, Bureau of Contract Administration, Office of Contract Compliance at (213) 847-6480.'

Section 22.0 Living Wage and Worker Retention Requirements.

22.1 Living Wage Ordinance

22.1.1 General Provisions: Living Wage Policy. This Contract is subject to the Living Wage Ordinance ("LWO") (Section 10.37, et seq., of the Los Angeles Administrative Code, which is incorporated herein by this reference. The LWO requires that, unless specific exemptions apply, any employees of service contractors who render services that involve an expenditure in excess of twenty-five thousand dollars (\$25,000) and a contract term of at least three months are covered by the LWO if any of the following applies: (1) at least some of the services are rendered by employees whose work site is on property owned by the City, (2) the services could feasibly be performed by employees of the City if the awarding authority had the requisite financial and staffing resources, or (3) the designated administrative agency of the City has determined in

writing that coverage would further the proprietary interests of the City. Employees covered by the LWO are required to be paid not less than a minimum initial wage rate, as adjusted each year. The LWO also requires that employees be provided with at least twelve (12) compensated days off per year for sick leave, vacation, or personal necessity at the employee's request, and at least ten (10) additional days per year of uncompensated time pursuant to Section 10.37.2(b). The LWO requires employers to inform employees making less than twelve dollars (\$12) per hour of their possible right to the federal Earned Income Tax Credit ("EITC") and to make available the forms required to secure advance EITC payments from the employer pursuant to Section 10.37.4. Contractor shall permit access to work sites for authorized City representatives to review the operation, payroll, and related documents, and to provide certified copies of the relevant records upon request by the City. Whether or not subject to the LWO, Contractor shall not retaliate against any employee claiming non-compliance with the provisions of the LWO, and, in addition, pursuant to Section 10.37.6(c), Contractor agrees to comply with federal law prohibiting retaliation for union organizing.

22.1.2 Living Wage Coverage Determination. An initial determination has been made that this is a service contract under the LWO and that it is not exempt from coverage by the LWO. Determinations as to whether this Contract is a service contract covered by the LWO, or whether an employer or employee are exempt from coverage under the LWO are not final, but are subject to review and revision as additional facts are examined and/or other interpretations of the law are considered. In some circumstances, applications for exemption must be reviewed periodically. The City shall notify Contractor in writing about any redetermination by the City of coverage or exemption status. To the extent Contractor claims non-coverage or exemption from the provisions of the LWO, the burden shall be on Contractor to prove such non-coverage or exemption.

22.1.3 Compliance; Termination Provisions And Other Remedies: Living Wage Policy. If Contractor is not initially exempt from the LWO, Contractor shall comply with all of the provisions of the LWO, including payment to employees at the minimum wage rates, effective on the Execution Date of this Contract, and shall execute the Declaration of Compliance Form attached to this Contract, contemporaneously with the execution of this Contract. If Contractor is initially exempt from the LWO, but later no longer qualifies for any exemption, Contractor shall, at such time as Contractor is no longer exempt, comply with the provisions of the LWO and execute the then currently used Declaration of Compliance Form, or such form as the LWO requires. Under the provisions of Section 10.37.6(c) of the Los Angeles Administrative Code, violation of the LWO shall constitute a material breach of this Contract and the City shall be entitled to terminate this Contract and otherwise pursue legal remedies that may be available, including those set forth in the LWO, if the City determines that Contractor violated the provisions of the LWO. The procedures and time periods provided in the LWO are in lieu of the procedures and time periods provided elsewhere in this Contract. Nothing in this Contract shall be construed to extend the time periods or limit the remedies provided in the LWO.

22.1.4 Subcontractor Compliance. Contractor agrees to include in every subcontract involving this Contract entered into between Contractor and any subcontractor, a provision pursuant to which such subcontractor (A) agrees to comply with the LWO and the Worker Retention Ordinance (“WRO”) with respect to this Contract; (B) agrees not to retaliate against any employee lawfully asserting noncompliance on the part of the subcontractor with the provisions of either the LWO or the WRO; and (C) agrees and acknowledges that City, as the intended third-party beneficiary of this provision may (i) enforce the LWO and the WRO directly against the subcontractor with respect to this Contract, and (ii) invoke, directly against the subcontractor with respect to this Contract, all the rights and remedies available to the City under Section 10.37.5 of the LWO and Section 10.36.3 of the WRO, as same may be amended from time to time.

22.2 Worker Retention Ordinance. This Contract may be subject to the WRO (Section 10.36, et seq, of the Los Angeles Administrative Code), which is incorporated herein by this reference. If applicable, Contractor must also comply with the WRO which requires that, unless specific exemptions apply, all employers under contracts that are primarily for the furnishing of services to or for the City and that involve an expenditure or receipt in excess of \$25,000 and a contract term of at least three (3) months, shall provide retention by a successor contractor for a ninety-day (90-day) transition period of the employees who have been employed for the preceding twelve (12) months or more by the terminated contractor or subcontractor, if any, as provided for in the WRO. Under the provisions of Section 10.36.3(c) of the Los Angeles Administrative Code, the City has the authority, under appropriate circumstances, to terminate this Contract and otherwise pursue legal remedies that may be available if the City determines that the subject contractor violated the provisions of the WRO.

Section 23.0 Prevailing Wage. Contractor shall at all times during the performance of the work hereunder pay the general prevailing rate of per diem wages for each craft or type of worker needed to execute this Contract, at such rate(s) as has been determined by the Director of the Department of Industrial Relations of the State of California.

Section 24.0 Assignment of Anti-Trust Claims. Pursuant to California Government Code Sections 4550 et seq. regarding Anti-Trust Claims, it is the policy of the City to inform each Proposer that in submitting a proposal to LAWA the Proposer offers and agrees to assign LAWA all rights, title and interest in and to all causes of action it may have under the Clayton Act or Cartwright Act, arising from purchases of goods, services or materials. This assignment is made and becomes effective at the time LAWA tenders final payment to the Proposer.

Section 25.0 Small Business Enterprise.

25.1 Contractor hereby agrees and obligates itself to use the service of a Business Enterprise (SBE) firm or firms to be designated by Contractor at the level of ten percent (10 %) for each year of the Contract.

25.2 Contractor hereby further agrees and obligates itself to strictly comply with all of the Rules and Regulations ("Rules") of LAWA's Small Business Enterprise Program ("Program").

25.3 Failure to comply with any and all of the Program's requirements shall subject the Contractor to the "Penalties" set forth in the Program's Rules.

25.4 Contractor shall submit, on a monthly basis, together with its invoices for payment, the monthly Subcontractor Utilization Report and/or data entry into a business enterprise monitoring system selected by LAWA listing the SBE Subcontractors utilized during the reporting period. Contractor shall cooperate with LAWA personnel in providing such information as shall be requested by LAWA in order to ensure compliance with the provisions of this section. LAWA will not process or pay Contractor's subsequent invoices if the monthly Subcontractor Utilization Report and/or data entry into a business monitoring system selected by LAWA are not timely submitted or if the Contractor fails to cooperate with LAWA personnel by promptly providing any and all information related to SBE participation requested by LAWA.

25.5 Failure to comply with any of the terms of this Section (or the terms of this Contract) shall constitute a material breach of contract and may result in the Contractor being deemed "Non-Responsible." (Section 10.40 et seq. of the Los Angeles Administrative Code.)

Section 26.0 Compliance With Los Angeles City Charter Sections 470(C)(12) and 609(E).

26.1 The Contractor, other underwriting firm members of the underwriting syndicate, subcontractors, and their principals are obligated to fully comply with City of Los Angeles Charter Sections 470(c)(12), 609(E) and related ordinances, regarding limitations on campaign contributions and fundraising for certain elected City officials or candidates for elected City office. Gifts to elected officials and certain City officials are also limited. Additionally, Contractor and other underwriting firm members of the underwriting syndicate are required to provide and update certain information to the City as specified by law. Any Contractor and other underwriting firm members of the underwriting syndicate subject to Charter Sections 470(c)(12) and 609(E), shall include the following notice in any contract with a subcontractor expected to receive at least \$100,000 for performance under this contract:

Notice Regarding Los Angeles Campaign Contribution and Fundraising Restrictions

As provided in Charter Sections 470(c)(12), 609(E) and related ordinances, you are subcontractor or underwriting firm on City of Los Angeles Contract # _____. Pursuant to City Charter Section 470(c)(12) and 609(E), subcontractor and its principals are prohibited from making campaign contributions and fundraising for certain elected City officials or candidates for elected City office for 12 months after the City contract is signed. Subcontractor is required to provide to Contractor names and addresses of the subcontractor's

principals and contact information and shall update that information if it changes during the 12 month time period. Subcontractor's information included must be provided to contractor within 10 business days. Failure to comply may result in termination of contract or any other available legal remedies include fines. Information about the restrictions may be found at the City Ethics Commission's website at <http://ethics.lacity.org/> or by calling 213/978-1960.

26.2 Contractor, underwriting firms, subcontractors, and their principals shall comply with these requirements and limitations. Violation of this provision shall entitle the City to terminate this Contract and pursue any and all legal remedies that may be available.

Section 27.0 Alternative Fuel Vehicle Requirement Program (LAX Only).

Contractor shall comply with the provisions of the alternative fuel vehicle requirement program (the "Alternative Fuel Vehicle Requirement Program"), if applicable, throughout the term of this Contract. The rules, regulations and requirements of the Alternative Fuel Vehicle Requirement Program are made a material term of this Contract.

Section 28.0 Environmentally Favorable Operations. If applicable, Contractor acknowledges for itself and any sub-contractors/concessionaires that its operation of its activities under this Contract will be subject to all LAWA policies, guidelines and requirements regarding environmentally favorable construction use and/or operations practices (hereinafter collectively referred to as "LAWA Policies") as such LAWA Policies may be promulgated, revised and amended from time-to-time."

Section 29.0 Municipal Lobbying Ordinance. Contractor shall comply with the provisions of the City of Los Angeles Municipal Lobbying Ordinance throughout the term of this Contract.

Section 30.0 Iran Contracting Act, 2010. In accordance with California Public Contract Code Sections 2200-2208, contractors entering into or renewing contracts with City for goods or services estimated at one million dollars (\$1,000,000) or more are required to complete, sign and submit the Iran Contracting Act of 2010 Compliance Affidavit ("Affidavit"). Contractor's compliance with the terms of the Iran Contracting Act of 2010 is made a requirement and condition of this Agreement.

Section 31.0 Waiver. The waiver by either party of any breach of any term, covenant, or condition herein contained shall not be deemed to be a waiver of any other term, covenant, or condition, or of any subsequent breach of the same term, covenant, or condition.

Section 32.0 Miscellaneous.

32.1 **Fair Meaning.** The language of this Contract shall be construed according to its fair meaning, and not strictly for or against either LAWA or Contractor.

32.2 Section Headings. The section headings appearing herein are for the convenience of LAWA and Contractor, and shall not be deemed to govern, limit, modify, or in any manner affect the scope, meaning, or intent of the provisions of this Contract.

32.3 Void Provisions. If any provision of this Contract is determined to be void by any court of competent jurisdiction, then such determination shall not affect any other provision of this Contract, and all such other provisions shall remain in full force and effect.

32.4 Two Constructions. It is the intention of the Parties hereto that if any provision of this Contract is capable of two constructions, one of which would render the provision void and the other of which would render the provision valid, then the provision shall have the meaning which renders it valid.

32.5 Laws of California. This Contract shall be construed and enforced in accordance with the laws of the State of California and venue shall lie in the Southwest District of the California Superior Court located in the County of Los Angeles.

32.6 Gender. The use of any gender herein shall include all genders, and the use of any number shall be construed as the singular or the plural, all as the context may require.

32.7 Amendments to Ordinances and Codes. The obligation to comply with any Ordinances and Codes which have been incorporated into this Contract by reference shall extend to any amendments which may be made to those Ordinances and Codes during the term of this Contract.

Section 33.0 Entire Agreement. This Contract, the attachments attached hereto, and other materials referenced herein, contain the entire agreement between the Parties hereto and supersede any and all prior written or oral agreements between them concerning the subject matter contained herein. There are no representations, agreements, or understandings, oral or written, between and among the Parties relating to the subject matter contained in this Contract which are not fully set forth herein. This is an integrated agreement.

Section 34.0 Execution. This Contract and any other document necessary for the consummation of the transaction contemplated by this Contract may be executed in counterparts, including counterparts that are manually executed and counterparts that are in the form of electronic records and are electronically executed. An electronic signature means a signature that is executed by symbol attached to or logically associate with a record and adopted by a party with the intent to sign such record, including facsimile or e-mail signatures. All executed counterparts shall constitute one Contract, and each counterpart shall be deemed an original. The Parties hereby acknowledge and agree that electronic records and electronic signatures, as well as facsimile signatures, may be used in connection with the execution of this Contract and electronic signatures, facsimile signatures or signatures transmitted by electronic mail in so-called PDF format shall be legal and binding and shall have the same full force and effect as if a paper original of this Contract had been delivered that had been signed using a handwritten

signature. All Parties to this Contract (i) agree that an electronic signature, whether digital or encrypted, of a party to this Contract is intended to authenticate this writing and to have the same force and effect as a manual signature; (ii) intended to be bound by the signatures (whether original, faxed, or electronic) on any document sent or delivered by facsimile or electronic mail or other electronic means; (iii) are aware that the other party(ies) will rely on such signatures; and, (iv) hereby waive any defenses to the enforcement of the terms of this Contract based on the foregoing forms of signature. If this Contract has been executed by electronic signature, all Parties executing this document are expressly consenting, under the United States Federal Electronic Signatures in Global and National Commerce Act of 2000 ("E-SIGN") and the California Uniform Electronic Transactions Act ("UETA") (California Civil Code §1633.1 et seq.), that a signature by fax, e-mail, or other electronic means shall constitute an Electronic Signature to an Electronic Record under both E-SIGN and UETA with respect to this specific transaction.

[Remainder of This Page Intentionally Left Blank]

IN WITNESS WHEREOF, the City has caused this Contract to be executed on its behalf by the CEO and Contractor has caused the same to be executed by its duly authorized officers, all as of the day and year first hereinabove written.

APPROVED AS TO FORM:
Hydee Feldstein Soto,
City Attorney

CITY OF LOS ANGELES

Date: _____

By: _____

Chief Executive Officer
Department of Airports

By: _____
Deputy City Attorney

By: _____

Chief Financial Officer
Deputy Executive Director
Department of Airports

ATTEST:

OTIS ELEVATOR COMPANY

By: 
Signature (Secretary)

Jim STRACHAN
Print Name

By: Catherine Pierce
Signature

Catherine Pierce

Print Name

Authorized Rep

Print Title



CERTIFICATE

I, Kristina Ciaffi, Assistant Secretary of Otis Elevator Company, a New Jersey corporation, (the "Company") do hereby certify that:

1. Under an Appointment of Officers of the Company dated July 18, 2022, I am an Assistant Secretary of the Company.
2. In my capacity as Assistant Secretary of the Company, I have access to and knowledge of the minutes and records of the Company, including delegations of authority.
3. Under a Delegation of Authority dated August 25, 2021, Jim Strachan, in his capacity as General Manager of the Company's North American Area, Greater Los Angeles and Orange County CA Area Office, is authorized as follows:

"To make, execute and approve on behalf of the North American Area of the Company (and its subsidiaries or affiliated operating units) (i) any and all bids or contracts to manufacture, furnish, erect, modernize, service, repair, or maintain elevators, escalators, dumbwaiters, hoisting apparatus, moving walkways and other horizontal transportation systems, and to execute and approve on behalf of the North American Area of the Company any and all waivers of lien, bonds, or other instruments, a part of or incident to such contract; (ii) any and all leases for the storage of supplies and equipment used by the North American Area of the Company in the performance of such contracts."

IN WITNESS WHEREOF, I have hereunto set my hand this 11th day of May 2023.



A handwritten signature in blue ink, appearing to read "Kristina Ciaffi".

Kristina Ciaffi
Assistant Secretary
Otis Elevator Company

Attachment

1

ATTACHMENT 1

SCOPE OF WORK

GENERAL DESCRIPTION OF CONTRACTED SERVICES

This Contract is for maintenance and repair services of all of the conveyance systems at Los Angeles International Airport (LAX) and Van Nuys Airport (VNY). LAX currently has over 400 conveyance units, which range from new to over twenty (20) years old. The Van Nuys Fly Away has three (3) elevators. The full list of conveyances is outlined in Attachment 4.

The conveyance system infrastructure is critical for daily operations as well as proper passenger flow at LAX and VNY Airports. Accordingly, it is imperative that the systems always operate effectively; therefore, Contractor response time and their ability to obtain parts in a timely manner play a vital role in keeping the equipment up and running.

Also included in this Contract, as Attachment 3, is the Los Angeles Fire Department Chief Regulation No. 4 Testing Procedures (LAFD Reg 4) which are required annually. This testing covers all elevators at LAX and VNY Airports and takes place predominantly during the off-shift hours between 10:30 PM and 6:30 AM. The Contractor will be required to provide a REG 4 certified inspector for all elevators under this Contract when and if needed.

LAWA is seeking to improve the maintenance reliability of its conveyances and transition from a fixed fee all-inclusive full maintenance agreement to a Time and Materials agreement structure with complete responsibility of maintenance, repairs, modernization, material and parts procurement, and related services that would allow it to quickly adapt to increases and decreases of assets due many ongoing construction projects and the demanding airport environment which operates continuously, 24 hours per day, 7 days per week, including weekends and holidays.

The Contractor will complement the LAWA Elevator shop team and will be expected to coordinate work with staff to maintain all conveyance assets at LAX and VNY. LAWA will be relying on the Contractor's experience and expertise for the success of the conveyance maintenance program. The LAWA Elevator shop and Contract Administrator will work with Contractor on a work plan to assure that conveyances are maintained to manufacturers' and LAWA's standards. The vision for this agreement is for a close partnership between the LAWA Elevator shop and the new Contractor to make certain LAWA's conveyances are maintained to meet the demand and reliability required of a World Class Airport.

CONTRACTOR AND CONTRACTOR STAFF LICENSE AND CERTIFICATIONS

The Contractor must hold and keep current a valid California Contractor's "C-11" License as well as Certified Qualified Conveyance Company (CQCC) with the State of California, Department of Industrial Relations, Division of Occupational Safety and Health. The failure of the Contractor to comply with the required certifications may be deemed to be a material breach of this Agreement.

Furthermore, all Contractor staff, except for Site Manager, Safety Manager, and Elevator Technician Apprentice/Helper(s), assigned for the services under this Scope of Work shall hold and keep current the following certifications:

- Certified Competent Conveyance Mechanic issued by the State of California Division of Occupational Safety and Health Elevator Unit
- Licensed Journey Level Elevator Mechanic Issued by the City of Los Angeles Department of Building and Safety

Elevator Technician Apprentice/Helper(s) must be actively enrolled in the California Joint Apprenticeship and Training Committee apprenticeship program for Elevator Mechanic and satisfactorily complying with all program requirements.

The Contractor shall replace any Contractor staff not meeting the above certification, license, and/or apprenticeship program enrollment requirements.

GENERAL DESCRIPTION OF SCOPE OF WORK

- A. The Contractor shall furnish all supplies, materials, parts, labor, labor supervision, tools, scaffolding, machinery, hoists, equipment (including employee safety equipment), lubricants, and technical information necessary to provide proactive preventive and corrective maintenance services including, but not limited to, cleaning, lubrication, adjusting, parts replacement, repair and callback service in strictest conformity to best industry practice, applicable laws, and all express and implied provisions herein for LAW A-wide conveyances in and around LAX and VNY.
1. Labor: The Contractor shall provide onsite staffing as described in Hours and Manner of Work under this section. The Contractor will provide a fully burdened hourly rate for each position per shift in Attachment 2 – Contractor's Price Proposal, including employee benefits, overhead, and profit. The Contractor must provide a backup personnel in the event of illness, disability, vacation, leave of absence for any reason of an employee assigned to LAW A. LAW A will not pay Overtime rates for backup personnel utilized by Contractor to backfill any absence of an employee assigned to LAW A and will pay the straight time hourly rates provided by the Contractor in the Cost Proposal Form.
 2. Parts Inventory: LAW A owns a conveyance parts inventory that is currently being utilized to maintain the Elevator Shop assigned conveyances. Upon 60 days of award of the new contract, the Contractor must assess the parts inventory for adequacy to maintain the equipment availability performance standards outlined in this section for all conveyances at LAX and VNY. After completion of the assessment, the Contractor shall provide a full report including but not limited to, deficiencies, recommendations, and a list of recommended parts to be added. LAW A will pay for those parts including taxes, freight, and Contractor markup fee (if applicable).

3. **Parts Inventory Replenishment:** The Contractor shall utilize the LAWA owned parts inventory to maintain all conveyances assigned to the Contractor by the LAWA Contract Administrator or designee. The Contractor must keep the parts inventory at agreed min/max levels and provide parts usage reports that can track costs per conveyance. The replenishment of inventory levels will be the responsibility of the Contractor's Site Manager and Supervisory staff. All parts, materials, and manufacturer service purchases must have the prior written approval of the LAWA Contract Administrator or designee and billed to LAWA per the terms of the contract monthly. The Contractor will be required to provide back up information for each purchase. Please refer to the Materials, Parts and Equipment Section for further information.
- B. The Contractor shall maintain the conveyance equipment in "like new" condition by continuously preserving and maintaining the condition, appearance, and performance of the conveyance in keeping with the manufacturer's original design and purpose. The purpose of the maintenance program specified herein is to provide the following:
 1. Consistent, safe, and reliable operation
 - a. Escalators must be maintained in working order 96% of the time available (see Equipment Availability Section, pages 22- 23 herein)
 - b. Elevators must be maintained in working order 97% of the time available
 - c. Moving walkways must be maintained in working order at 95% of the time available
 2. Maximum operational performance
 3. Maximum beneficial usage
 4. Maximum life cycle
 5. Appearance of machine rooms should be kept in a neat and clean manner at all times.
- C. The Contractor is required to supply staffing of technicians necessary to meet the onsite requirements and response times indicated in this Scope of Work.
- D. The Contractor expressly acknowledges that LAWA is relying on the Contractor's professional expertise in performance of Services to maintain LAWA's equipment.
- E. [THIS SECTION HAS BEEN REMOVED AND NO LONGER APPLIES]

MATERIAL, PARTS, AND EQUIPMENT

- A. All parts, material and equipment shall be new and used for the purposes intended. Parts must be Original Equipment Manufacturer (OEM) unless pre-approved by LAWA.
- B. Repair and Replacement
 - 1. Make repairs and/or replace all worn, damaged, or broken parts or components.
 - 2. Parts or components requiring repair shall be rebuilt to "as new" condition when new are not available. Parts or components shall be replaced:
 - a. When worn beyond normal adjustment limits.
 - b. When necessary to ensure continued normal operation.
 - c. When necessary to extend the useful life of the conveyances or any of their components
 - d. When necessary to continue safe, dependable operation in accordance with American Society of Mechanical Engineers (ASME) A17.1 and A17.2 Code
 - e. When necessary to continue performance of the equipment in accordance with its original design
 - f. When necessary to maintain the performance standards specified in this Contract, including smoothness and quietness of operation
 - 3. When multiple conveyances require repair and onsite staffing has been exhausted, LAWA management, upon consultation with the Contractor, shall establish priorities of accomplishment.
- C. Manufacturers Parts, Materials, and Lubricants
 - 1. It will be the responsibility of the Contractor to maintain an available stock of spare parts, materials, and lubricants for routine maintenance and repair. This inventory shall be developed based on the spare parts listing provided by OEM specification, as well as any other parts and supplies necessary for routine maintenance and/or to ensure functional availability of the conveyances. Any spare parts provided by the equipment manufacturers through airport construction projects shall be included in this inventory. The Contractor shall also maintain an active listing of the sources of spare parts or replacement equipment needed for catastrophic failures as well as the means for rapidly dispatching them to the site so that repairs can be completed without undue downtime.
 - 2. All lubricants shall be suitable for the purpose intended and shall meet or exceed the minimum requirements specified by the manufacturer of the equipment for which the lubricant is applied.

3. Lubricants, cleaning fluids and all combustible liquids shall be stored in compliant and properly labeled flammable metal cabinets in the machine room and shall be disposed of in accordance with Occupational Safety and Health Association (OSHA) and Environmental Protection Agency (EPA) guidelines.
 4. Safety Data Sheets (SDS's) shall be posted as required.
 5. The Contractor will be responsible for removal and disposal of all oils, greases, solvents and soiled cleaning cloths and rags that are used in the repair, service and adjusting of all elevator and escalator equipment. All material will be disposed of in accordance with all applicable municipal, State, County, City, and Federal laws and regulations. LAWA Facilities Management Division will retain title to all hazardous and non-hazardous waste, including but not limited to hydraulic oil, cleaning solvents and other waste generated from maintenance associated with this contract. LAWA will be shown as the waste generator and will sign all waste manifests/bill of lading. Nothing contained within these Contract Documents shall be construed or interpreted as requiring the Contractor to assume the status of owner or generator of hazardous waste substances for non-Contractor generated hazardous wastes. All disposal locations are subject to LAWA approval and Contractor must provide all disposal documentation within thirty (30) calendar days of disposal. Use of LAWA's EPA Identification Number for disposal purposes must be coordinated with contract manager and all documentation such as manifests, land disposal restriction forms, and profiles must be delivered to the contract manager within thirty (30) calendar days of disposal.
- D. Consideration shall be given in regard to obsolescence of systems, materials or parts only when both the original equipment manufacturer(s) and after-market elevator industry suppliers no longer manufacture required materials or parts. Components or materials that can be repaired or refurbished at a machine or repair shop to allow the component or material to function in a safe manner are not considered obsolete. No consideration for obsolescence will be made during the initial five (5) year term of this contract for the conveyances that were modernized in the past fifteen (15) years, unless it is discussed, planned, approved, and coordinated with the LAWA Elevator shop.
- E. Removal of Parts
1. No parts or components required for the performance of services on the vertical transportation equipment or required for its operation may be removed from the job site without prior written approval from LAWA.
 2. This does not include new parts stocked on the job site and owned by the Contractor but does include parts and components which were installed with and are a part of the conveyance installation, and parts delivered and paid by LAWA, which shall remain LAWA property until installed on the equipment.

CONTRACTOR SERVICES

- A. If during the term of the Contract the Contractor violates any of the provisions of the Contract or fails to provide the services as required by LAWA, LAWA shall advise the Contractor of the specific deficiencies and shall allow the Contractor a reasonable time period (thirty (30) calendar days unless otherwise agreed) to correct the deficiencies to LAWA's satisfaction.
- B. In the event the Contractor fails to correct the deficiencies within thirty (30) calendar days or other agreed time, LAWA shall have the right to terminate the Contract.
- C. LAWA may, at its sole discretion, increase or decrease dedicated onsite staffing depending on workload, projects, addition/removal of conveyances, or other reason via Change Order to the Contract. The hourly rates in the Cost Proposal Form submitted by the Contractor will apply to any staffing increase.

PRO-ACTIVE FULL PREVENTIVE MAINTENANCE

The Contractor must regularly and systematically, on a continuous basis, examine, clean, lubricate and adjust the vertical transportation equipment and provide unlimited callback service twenty-four (24) hours a day, seven days a week (24/7) without additional charges no matter what the issue is, in accordance with accepted industry standards and the applicable manufacturer's published specifications and technical field notes, including those published internally within the manufacturer's organization. The Contractor must repair or replace all portions of the equipment, including but not limited to the work and coverages described hereinafter. The Contractor is expected to complete 100% of its preventive maintenance assignments on a monthly basis. The Contractor will provide LAWA with a computerized report of completed maintenance and inspections every month; subject to approval of LAWA's designated Contract Administrator.

LAWA uses Maximo Work Order Management System (Maximo System) as its asset management system. The Contractor will be granted access to the Maximo System via the asset management unit in order to keep track of preventative maintenance work orders. The Contractor will be required to utilize this system and any other system required by LAWA to track scheduled PM's, annual FLSS testing, and LAFD REG 4. Work Orders for the assets will be completed by Contractor and submitted as completed in the Maximo System weekly.

BASIC SCOPE - ELEVATORS

The Contractor shall examine, clean, lubricate, adjust, and when conditions warrant, repair or replace the following items including all components pertaining to the operation of the elevator equipment. Whether or not expressly stated herein, the items include, but are not limited to the following:

- A. Hoist machines, including worms, gears, thrust bearings, drive sheaves, drive sheave shafts and shaft bearings, tachometers, brake assemblies and pulleys, and all other components and parts of the machine and brake.

- B. Hoist motors and power conversion devices, including motor windings, field coils, rotating elements (including armatures and commutators), brushes, brush holders, motor bearings, and all other related components and parts.
- C. Controllers, selectors and dispatching equipment, including all micro-processor and/or solid-state components, relays, resistors, capacitors, condensers, transformers, contacts, leads, dash pots, timing devices, computer devices, encoders, tach-generators, steel selector tapes (or cables), mechanical and electrical driving equipment, and all other related components and parts; including battery back-up power equipment for the elevators.
- D. Governors, including governor sheave shaft assemblies, bearings, contacts, governors, jaws and all other related components or parts.
- E. Car and counterweight safeties, including actuating mechanisms, jaws, and all other related components and parts.
- F. Hoistway equipment, including deflector or secondary sheaves and sheave bearings, car and counterweight guide rails (free of rust and corrosion), top and bottom limit switches, counterweights and counterweight guide shoes including rollers or sliding gibs, inductors, cams, tapes and all other related components and parts.
- G. Hoistway entrance equipment, including hoistway door interlocks, hangers, hanger covers and tracks, hoistway door drive assemblies including vanes, drive blocks, clutches, pick-up assemblies and bearings, bottom door guides, auxiliary door closing devices (including cables, sheaves, and arms), door restrictor devices, and all other related components and parts.
- H. Car and hoistway door gibs, including their attachments to the door panels.
- I. Car equipment, including car guide assemblies, guide rollers or sliding car guides, car door restrictors, car top exhaust fan or blowers, car top 2:1 sheaves, load weighing or sensing switches, car top inspection stations, car top and bottom lights, car frames, car platforms, and all other related components and parts.
- J. Car door operators, including door drive chains, sheaves or belts, car door hangers, hanger covers and rollers, car door contacts, all door protective devices (including screen type detectors, proximity edges, mechanical safe edges and light rays), and all other related components and parts.
- K. Pit equipment, including car and counterweight buffers, tape sheave assemblies, governor rope pit tension sheave assemblies, compensating rope sheave assemblies or other pit mounted compensation guides, pit lights, and light fixtures including re-lamping (bulbs furnished by The Port), and all other related components and parts; Alarm bells, emergency stop switches, emergency car lights, and batteries.
- L. Car operating panels and their attachments to return panels, hall call pushbutton stations, car, and corridor signals and fixtures (including lighted surrounds or buttons),

visual and audible signaling devices, remote status panels and switches, and all other related components and parts, including emergency light batteries.

M. Seismic Devices, including seismic switches and contacts, derailment devices, and all other related components and parts.

N. Hoist, compensating, and governor ropes and their fastening means, and all other similar or related components and parts; Renew all wire ropes as often as is necessary to maintain an adequate factor of safety. Maintain equal tension on all hoisting ropes, and, where appropriate, shorten all ropes as necessary to provide continued safe operation and maintain normal traction.

O. Motors

1. Treat all motor windings, as needed, with proper insulating compound which has been approved by the motor manufacturers.
2. Replace any cracked or badly worn field coil windings.
3. Disassemble machine brakes annually (unless otherwise agreed), check for and replace worn parts, clean all retained parts, reassemble, lubricate, and adjust for proper operation.

P. Cleaning

1. Keep all car tops, pits, and hoistways clean and free from dirt, oil, lint, debris, and stored items, and maintain each machine room in clean, neat condition.
2. Keep all wire ropes and guide rails clean and free from dirt, lint, rust, or accumulated grease, and keep rail shanks properly painted.
3. Clean elevator equipment, machine rooms, and pit floors at regular intervals sufficient in frequency to maintain a professional appearance, prevent tracking of dirt, oil, grease, or carbon dust from car tops, pits or machine rooms onto carpeted areas, and to preserve the life of the equipment.

Q. Traveling Cable: Repair or replace conductor cables and hoistway and machine room elevator wiring to prevent shutdowns and provide uninterrupted operation of elevator signals and uninterrupted elevator operation.

R. Proper labeling

1. Affix by stencil painting and maintain the appropriate elevator numbers on the car crossheads and on all equipment components in the machine rooms and pits, including hoist machines, motor generators, governors, control cabinets, buffers, and compensation sheave assemblies.

2. These numbers shall be a minimum of 1" high except on the governor or compensation sheave assembly, which may be less if a suitable flat surface of 1", is not available.
- S. Repair to Finishes: Repair damage to car and hoist way door finish when caused by improper adjustment or maintenance of associated door equipment.
- T. Lighting: LAWA will furnish bulbs for all machine room and pit light fixtures. Replacement of car light bulbs or tubes shall be LAWA's responsibility. Uninterrupted Power Supplies or UPS for the lighting is contractor responsibility.
- U. Emergency Telephone and Intercom
1. Maintain the emergency telephone, button and contacts, speakers, and wiring to the machine room junction box, in a fully operational condition.
 2. Maintain wiring for the car telephones from the cars to the machine room junction boxes. Maintain and confidence tests the telephone and intercom systems.
- V. In-Elevator Telephone Reprogramming and Intercoms: Maintain the in-car phones which communicate with the Airport's communication center at no additional cost to LAWA for duration of Contract, including batteries for the telephones and intercoms.
- W. Maintain Elevator Status or Monitoring Panels Maintain in fully operational condition.
- X. Hydraulic Elevators
1. Maintain hydraulic elevators as described in the requirements for electric elevators and the following additional requirements.
 2. Provide inspection on the following equipment and/or components for the hydraulic elevator equipment to meet or exceed the Title 8 of the State of California Code of Regulations, City of Los Angeles Municipal Code, Part 1, Section 92.0101 (Elevator Code), and any other applicable codes, standards or regulations including, but not limited to:
 - a. Elevator machine including reservoir, pump, valves, valve operators, valve pistons, and drive motor, speed reduction units and electro-mechanical or motor operated cam devices.
 - b. Hydraulic jack unit's packing gland, surface condition of the jack unit piston, speed reducing valves, above ground piping, (Contractor not responsible for maintaining underground piping), cut off valves, speed reducing valves, and scavenger line systems or tank to collect normal leakage from jack unit packing gland.
 - c. Entire hydraulic jack unit for "holeless" hydraulic elevator applications.
 - d. Batteries, including those for emergency lowering when applicable.

3. Maintain proper clean oil and provide oil to proper levels in hydraulic reservoir.
4. Maintain hydraulic plungers and packing heads, and above-ground hydraulic piping, fitting, hoses, and brackets.

BASIC SCOPE - ESCALATORS & MOVING WALKS

The Contractor shall examine, clean, lubricate, adjust, and when conditions warrant, repair or replace the following items including all components pertaining to the operation of the escalator equipment. This includes, but is not limited to:

- A. Maintain, repair or replace escalator drive machines, motors and brakes, controllers and switches, handrail drive devices, handrails, and worms and gears.
- B. Maintain, repair or replace bearings and thrusts, windings, commutators and rotating elements, contacts, coils switches and relays.
- C. Maintain, repair or replace steps (complete), step chains, handrail chains and drive chains. If a step has to be replaced again during the term of the contract, the Contractor will assume the total cost (both for the step and labor).
- D. Maintain repair or replace step tracks, handrail guides sprockets pulleys and gears, drive belts and timing belts.
- E. Maintain, repair, or replace tension devices, combs, comb plates (combs, comb plates and step treads are billable when damaged by others), and landing plates.
- F. Maintain, repair or replace lubricators, all lighting in escalator interiors, and all safety devices including comb impact and skirt switches.
- G. Perform an annual test of all operating and safety devices in accordance with ASME A17.1, Safety Code for Elevator and Escalators and all other tests required by governing authorities. These tests will be conducted in the presence of LAWAW's authorized representative.
- H. Maintain, adjust, and ensure proper functionality of Escalator sleep mode equipment per OEM recommendations or as requested by LAWAW.
- I. Escalator and Moving Walkway Cleaning
 1. Perform a major clean down of all escalator equipment at least once a year (and more frequently, if necessary), including pits, pans, and balustrade interiors. Removal of all steps is required, and each step must be checked for cracks or other damage. All damaged steps must be replaced. The Contractor will provide LAWAW with a complete clean down report at the conclusion of each total clean down and allow inspection by LAWAW before the equipment is put back into service. All deficiencies identified as part of inspection will be corrected by the Contractor prior to putting the escalator back in service, at no cost to LAWAW. LAWAW may withhold

payment if the major clean downs are not completed or if deficiencies identified during the major clean downs are not corrected.

2. Escalator steps and moving walkways must be cleaned monthly, weekly, and as needed depending on usage. A cleaning schedule must be developed and subject to LAWA approval. The escalator and moving walkway cleaning services shall be discussed and coordinated with the LAWA Contract Administrator. Contractor must have the proper equipment and chemicals necessary to clean the grooves in the tread area of the step.
- J. Wax handrails as required to provide smooth quiet operation.
- K. Examine, adjust, properly fasten and align balustrades, decks, skirt panels, anti-slide devices and guards. The Contractor is responsible for advising LAWA of the necessity of replacing these components but is not responsible for the cost of replacement.
- L. Perform necessary annual skirt index tests as required by California State Labor and Industries. Repair or adjust skirt panels and skirt brushes to maintain compliance index performance requirements on an annual basis or as required by the California State elevator inspector. All annual skirt index test (passed) reports must be submitted to LAWA's designated Contract Administrator. The Contractor is not responsible for replacing components but will notify LAWA of any need for replacement parts in order to pass the test.
- M. Lubrication
1. Lubricate the equipment at intervals recommended by the equipment manufacturer or as dictated by the use of the equipment.
- N. Adjust the equipment as necessary when the operation of the equipment varies:
1. From the originally designed performance as a result of normal wear and tear.
 2. When required to maintain performance standards specified in this Contract.
 3. When necessary to preserve the useful life of a part or assembly.
 4. When necessary to prevent or eliminate equipment nuisances from becoming adversely noticeable to LAWA staff or public.
- O. Dispatching
1. The Contractor shall check and adjust the conveyance dispatching systems and undertake necessary tests at such intervals as are required to ensure all circuits and time settings are consistently and properly adjusted in order to provide optimum service and minimize system response time to registered hall and car calls.

2. If required to complete such system checks, this work shall be completed during overtime at no additional cost to LAWA.

P. Adequate Parts and Parts Storage

The Contractor shall maintain an adequate inventory of spare parts:

1. Components on hand to permit timely replacement and repairs without delay.
2. All parts, materials, lubricants, rags, cleaning fluids, combustible liquids, and other materials and supplies shall be kept and stored in U.L. rated metal cabinets, provided by the Contractor, properly secured, in each machine room, unless code required clearances would be violated by the presence of such cabinets. Materials may also be stored in central storage if such space is not available in certain machine rooms.
3. All materials and supplies kept in these cabinets shall be neatly arranged, and cabinet doors shall be left in the fully closed position after each visit. This includes any replacement boards for any controls that the Contractor is not able to replace within twenty-four (24) hours of identifying the need for replacement.

Q. Cabinets

1. When material is stored on site there shall be cabinets sufficient in number and size to store all parts, materials, and supplies out of sight.
2. No parts, materials, or supplies shall be stored on top of cabinets, on the floors, or any other place where they are visible.

R. Prompt Corrective Action

1. When, as a result of an examination, a need for corrective action is apparent and the corrective action is within the scope of the Contractor's responsibility, the Contractor shall proceed immediately to make (or cause to be made) such replacements, repairs, and/or corrections.
2. If the Contractor reasonably believes the corrective action is not within the scope of the Contractor's responsibility, and no safety or potential safety problem exists, the Contractor shall deliver a written report to LAWA for further action within seven (7) calendar days of the examination. If unit is inoperable LAWA must be notified immediately and offered options by the Contractor.
3. If a safety or potential safety problem exists, the Contractor shall immediately take corrective action at the least possible expense and equipment outage to LAWA, regardless of scope of responsibility, and make a prompt written report to LAWA.

- S. Treads and risers are free of all spills, stains, deposits, gum, stickers, and cleaning marks, leaving a uniform appearance. The adjacent surfaces will be protected or cleaned following the cleaning process.**

1. Adjacent Areas/Surfaces- All interior and exterior areas, cladding, glass, landings, floor, handrails, switches, buttons, controls and related equipment will have a uniformly clean appearance, free from splatter, dirt, dust, cause by the conveyor cleaning and the cleaner.
2. Metal and bright work is to be maintained in accordance with standards listed herein. All adjacent areas are to be left free of residue and spotting following cleaning procedures.

T. General Cleaning Standards

1. Metal Cleaning - All cleaned metal surfaces are without deposits or tarnish and with a uniformly bright appearance, free from spots, smudges and streaks. Cleaning agent is to be removed from all adjacent surfaces, and surrounding finishes will not be damaged.
2. Glass Cleaning Surfaces - Glass is clean when all glass surfaces are without streaks, film, deposits, and stains and have a uniformly bright appearance and adjacent surfaces, including mullions and window sills, have been wiped clean. Glass cleaning work shall be accomplished with the least possible interference to airport passengers and operations. Dark or tinted glass is to be included in cleaning service.
3. Terrazzo Floor Cleaning - The floor needs to be protected prior to the cleaning set up and no harsh chemical should get on Terrazzo floor, in such case, the chemical needs to be cleaned off right way. Only neutral cleaner can be used for cleaning and surrounding finishes will not be damaged. The Terrazzo floor adjacent to landings is free from splatter, dirt, dust, caused by the conveyor cleaning and the cleaner.

CONVEYANCE CONDITIONS

All conveyances are "as is," and LAWA takes no responsibility for and makes no guarantees with respect to the condition of the conveyances. The Contract shall not be invalid due to defects discovered after award of the Contract that may have been discovered by a reasonable inspection of the conveyances by the Contractor before award.

PERFORMANCE REQUIREMENTS

The Contractor agrees to maintain the following minimum performance requirements for the elevator door types designated in the table below:

- A. Door Types Maximum Door Maximum Door Open Time Close Time:**
- 36" side opening 2.5 seconds 3.7 seconds
 - 42" side opening 2. 7 seconds 4.3 seconds
 - 44" side opening 2. 7 seconds 4.6 seconds
 - 48" side opening 2. 7 seconds 4. 7 seconds
 - 36" center opening 1.8 seconds 2.5 seconds

- 42" center opening 2.0 seconds 2. 7 seconds
 - 44" center opening 2.0 seconds 2.8 seconds
 - 48" center opening 2.0 seconds 3.0 seconds
- B. Maximum Floor to Floor Time: Floor to floor times are measured from the time the doors start to close, including a typical one floor travel, until the elevator is level with the next floor and the doors are 3/4 open to fully open position. Minimum requirement is thirty (30) seconds and maximum is sixty (60) seconds.
- C. Quality of Ride: Elevators shall provide smooth acceleration/deceleration transitions in and out of the floors. The travel between floors shall be smooth and quiet.
- D. Maximum Door Opening Time: Door opening times are measured from the start of car door open until the doors are in the fully open position. Minimum requirement is fifteen (15) seconds and maximum is thirty (30) seconds.
- E. Maximum Door Closing Time: Door closing times are measured from the start of door close until hoist way doors are fully closed. Door closing static pressure shall not exceed 30 lbs.
- F. Door Dwell Time: Door dwell time is measured from the time the door is fully open until the time the doors begin to close. Door dwell time from a hall call shall be 5.0 seconds+/- 1.0 seconds or as agreed upon with LAWA. When the system is capable of establishing a different dwell time from a car call this shall be set at 3.0 seconds+/- 1.0 second. When the hall button is located at a lengthy distance from an elevator in a group, the door dwell time from a hall call shall be established at minimum acceptable ADA I accessibility standards.
- G. Floor Accuracy: Elevator car shall be level with floor under all load conditions.
- H. Rated Speed: Variance from rated speed, regardless of load, shall be within 5% of original contract speed.
- I. Performance: Performance shall be measured by original installation design parameters. Eliminating operations or shunting any circuits without written permission by LAWA may be considered a default of contract.

CODE REQUIRED INSPECTIONS AND TESTS

- A. The Contractor shall make "Periodic Inspections and Tests" in accordance with all State of California requirements, and with ASME A 17.1, including oil buffers, car and counterweight safeties and governors for traction elevators and relief valve tests for hydraulic elevators. Tests for traction elevators shall comply with current applicable code requirements.
- B. The Contractor shall provide three (3) weeks prior notification to LAWA of its intention to perform Category 5, rated speed, rated load tests so a representative of LAWA may

schedule and witness the tests. Written reports of all "Periodic" tests shall be submitted to LAWA Facilities and Technical Services Representative on a quarterly basis via email. The Contract Price shall include all such required tests during regular hours.

- C. Additionally, the Contractor shall advise LAWA one (1) year prior to the approximate anticipated date for Category 5 tests so LAWA can consider the need for performing the tests in overtime and prepare budgets accordingly.
- D. The Contractor shall assist with periodic inspection and testing of Standby Power Operation in accordance with ASME A17.1-2004, Rule 8.11.2.2. 7. These tests shall be performed during overtime hours.
- E. The Contractor shall affix metal tags to each of the tested devices for all Category 1 and 5 tests, clearly indicating: 1) the test date, 2) the code requirement number, and 3) name of the Contractor making the test, in accordance with ASME A17.1-2005, Rule 8.11.1.6.
- F. The Contractor's failure to execute statutory tests mandated by either National Codes or local jurisdictions or regulations within thirty (30) calendar days of required time constraint shall subject the Contractor to a \$1000.00 penalty per calendar day per unit per infraction beginning on the thirtieth day subsequent to the required date and continuing until LAWA receives written notification from the Contractor of completion of required test.
- G. Statutory tests include but are not limited to the tests described herein.
- H. The Contractor shall attempt to schedule said tests in the presence of local enforcing authority and/or persons designated by LAWA.
- I. Scheduling difficulties shall not exempt the Contractor from performing tests in strict compliance with applicable Code or regulatory requirements.
- J. The Contractor will forward results to California State Inspection Division, copying the LAWA Maintenance Manager within seven (7) calendar days of all tests.
- K. The Contractor will comply with LAFD Reg 4 and any other LAWA requirement to comply with regulation on an annual basis required within the same month each year.
- L. Before performing tests of the conveyances, the Contractor shall take all necessary steps to verify that the equipment is in a safe condition for testing, shall check appropriate clearances, and shall adhere to best practices in making the tests, including all safety procedures in general use by the Contractor or published by the Contractor or manufacturer of the equipment. LAWA shall have no responsibility for damage to vertical transportation equipment or to building structure due to Category 5 tests.
- M. LAWA will assist the contractor in scheduling annual maintenance and testing, including LAFD Reg 4 testing via a yearly published calendar and entering corresponding data of contractor's monthly work orders of all regulatory maintenance to be completed which

will be returned to LAWA by the contractor and enter corresponding data in LAWA's CMMS.

HOURS AND MANNER OF WORK

LAWA has established the following day /time schedule for conveyance Maintenance and Repair (considered normal work): The Contractor staff assigned to LAWA will have no other scheduled customer responsibilities. Changes to these hours will be mutually agreed on by both LAWA and the Contractor:

- A. The Contractor must maintain minimum onsite 24/7 presence and staff during the normal 5-day work week and 24/7 presence and minimum staff on weekends and holidays. Refer to Table below for schedule.

Minimum Coverage	Minimum Staff
Daily Site Manager Coverage (M-F)	
7:00am to 3:30pm (8 hrs.) - AM	1 – One Site Manager (Salary)
7:00am to 3:30pm (8 hrs.) - AM	1 – Safety Manager (Salary)
Daily Supervisor and Technician Coverage (M-F)	
6:00am to 3:00pm (8 hrs.) - AM	4 – One Supervisor and Three Technicians
3:00pm to 10:30pm (8 hrs.) - MID	4 – One Supervisor and Three Technicians
10:30pm to 6:00am (8 hrs.) - PM	10 – One Supervisor and Nine Technicians
Weekend and Holiday Supervisor and Technician Coverage	
24/7 coverage (AM, MID, & PM)	4 – One Supervisor and Three Technicians

Note: Shift schedule above includes a 60-minute unpaid lunch for AM Technicians, 30-minute unpaid lunch for MID Technicians, and 30-minute unpaid lunch for PM Technicians.

- B. The personnel level of coverage during these hours shall be adequate to respond to all outages (both emergency and nuisance), make repairs, and perform all necessary maintenance as detailed within this contract.
- C. City of Los Angeles / LAWA Holidays are listed below:
1. New Year's Day (January 1 or observed on closest weekday)
 2. Martin Luther King, Jr. Day (observed on the third Monday in January)
 3. President's Day (observed on the third Monday in February)
 4. Caesar Chavez Day (observed on the last Monday in the Month of March)
 5. Memorial Day (observed on the last Monday in May)
 6. Juneteenth (observed on June 19th or the closest weekday)
 7. Independence Day (observed on the 4th of July or the closest weekday)

8. Labor Day (observed on the first Monday in September)
9. Indigenous Peoples Day (observed on the second Monday in October)
10. Veterans Day (observed on November 11)
11. Thanksgiving Day and the Friday after (observed on the fourth Thursday/Friday in Nov.)
12. Christmas Day (observed on the 25th of December or the closest weekday)

D. Service Response Time.

Conveyances called out of service must be responded to within fifteen (15) minutes from notification from Airport staff or Airport Response Coordination Center (ARCC) staff to the Contractor. The ARCC staff shall call out service calls to the Contractor's technicians via two-way radio communication or by phone at the time they generate the emergency work order (EM). The technician will respond to the ARCC via two-way radio communications or by phone when they arrive at the conveyance to indicate they are on-site and have commenced in the effort to resolve the equipment outage. This period of time will be noted on the problem ticket and will constitute the response time.

- E. Any additional staffing required by the Contractor to complete any type of large repair, project, or alike, will be discussed, planned, approved, and coordinated with the LAWA Elevator shop and dealt with on a case-by-case basis. The hourly rates submitted in the Cost Proposal Form by the Contractor will apply, unless otherwise approved by LAWA.
- F. The Contractor must provide a detailed explanation of Scope of Work and costs, including labor, material breakdown, mark-up percentages, and will provide supporting invoices for material and time tickets if requested by LAWA for any additional work performed beyond the scope of work in this Contract.
- G. Travel time to and from LAWA for all maintenance will be included. No separate travel time or mileage will be allowed.
- H. The Contractor shall follow secured Airport protocol by wearing Contractor Uniforms and the proper Identification card depending on location.
- I. Invoices submitted for payment shall show:
 1. The complete Scope of Work performed.
 2. List specific conveyance the invoice references and person contacted.
 3. Shall list the correct wage amount and must also show the material cost and mark-up percentage.
- J. Invoices that are not complete or accurate will be returned to the Contractor with payment due sixty (60) calendar days from when the corrected invoice is received.

- K. Sensitivity to Airport Customers: The Contractor's employees will be sensitive to airport tenants' and other customers' needs during their work activity and will not create excessive noise. Work that will generate excessive noise must be scheduled through LAWA.
- L. The Contractor shall provide and include the LAWA Elevator Shop staff in all training available to the Contractor's staff assigned to the services under this Scope of Work. All training provided the Contractor to LAWA Elevator Shop staff shall comply with all conveyance industry standards, the Occupational Safety and Health Administrations (OSHA), CAL/OSHA, and any other applicable safety standards, laws, ordinances, rules, and regulations that LAWA and Contractor are expected to adhere to.
- M. The Contractor shall keep 3-5 proficient and qualified staff that can carry out escalator vulcanizing and splicing repairs within the first 12 months of this Contract. At a minimum, one (1) staff member must be available on every shift. The Contractor shall enroll the designated staff to do vulcanizing and splicing repairs into a training program within the first 60 days of this contract.

EQUIPMENT AVAILABILITY

- A. The Contractor shall maintain conveyances in such a manner as to provide a safe and reliable service for users. The benchmark for measuring performance related to this expectation shall be determined as follows:
 - 1. The Airport passenger elevators shall be operational and have an availability of no less than 97%. This level will be measured continuously (24/7/365).
 - 2. The Airport passenger escalators shall be operational and have an availability of no less than 96%. This level will be measured continuously (24/7/365).
 - 3. The Airport passenger moving walkways shall be operational and have an availability of no less than 95%. This level will be measured continuously (24/7/365).
- B. Long-term outages requiring units to be out of service for more than twelve (12) hours must be listed on the daily out of service greater than 12-hour report.

The first operational metric is generated as follows:

- 1. Problems are reported to the Airport's Response Coordination Center (ARCC).
- 2. An Emergency Maintenance (EM) work request is generated for the specific conveyance via the LAWA's / MAXIMO Computerized Maintenance Management System (CMMS).
- 3. The conveyance is noted as "out of service" at the time of the opening of the (EM) work request.
- 4. Once a technician is dispatched, and the problem is resolved, the technician must immediately communicate back with the ARCC to indicate the problem has been resolved. This will allow the ARCC to close the EM work request for that conveyance and return it to service.

Data gathered from the EM work request is utilized to calculate the equipment availability. The data is gathered in report form and provided to the Contractor. This data is available real-time via the Airport's Lift-Net System or the conveyance dashboard.

The Contractor's performance will be graded based on these criteria - which will be reported out during a monthly elevator/escalator meeting held with LAWA staff. Any occurrences not meeting the required service level may be considered as unacceptable performance. As a reference, applicable downtime per device must not exceed 3.4 hours per week for passenger elevators, and 5.04 hours per week for passenger escalators and moving walkways. This is calculated as follows:

1. $24 \text{ hours/day} \times 7 \text{ days/week} = 168 \text{ conveyance-hours/week}$
2. Maximum downtime per week per passenger elevator is 3%, passenger escalators are 4%, and moving walkways is 5% of 168 conveyance-hours/week.
3. Passenger elevator $168 \times 3\% = 5.04 \text{ hours per week per elevator}$ / Passenger escalators are $168 \times 4\% = 6.72 \text{ hours per week per escalator}$ and moving walkways $168 \times 5\% = 8.4 \text{ hours per week per moving walkway}$.
4. Should Contractor have a critical unit, as outlined in Attachment 5 – Critical Conveyance List, that doesn't meet the availability performance criteria, described in this section, calculated over the 30-day monthly billing cycle, LAWA will withhold the following amount from the monthly billing cycle per unit below the required availability performance requirement:
 - Moving Walkway: \$400.00
 - Escalator: \$450.00
 - Elevator: \$500.00

LAWA may, at its sole discretion, increase or decrease the number of critical units, in Attachment 5 – Critical Conveyance List, depending on workload, projects, addition/removal of conveyances, or other reason by the LAWA Contract Administrator or Designee. LAWA shall provide a sixty (60) day advanced written notice to advise of any changes to the Critical Conveyance List.

Unless mutually agreed upon, no conveyance device shall be out of service continuously for more than twelve (12) hours. LAWA may also withhold payment under the Contract if the shutdown is considered an unreasonable delay.

REMOVAL OF CONVEYANCES FROM SERVICE

- A. Removal of elevators/escalators from service during peak hours shall be coordinated with and approved by LAWA.

- B. Removal of conveyances for routine maintenance during off-peak hours is expected, but notification to and coordination with LAWA should be provided whenever possible, unless otherwise agreed.

LAWA'S RIGHT TO INSPECT AND REQUIRE WORK

- A. LAWA reserves the right to make or cause to be made inspections and tests whenever it deems it advisable or necessary to ascertain that the requirements of this Contract are being fulfilled.
- B. The Contractor agrees to furnish personnel to accompany LAWA staff and/or their representatives during such inspections.
- C. Deficiencies noted by LAWA shall be submitted in writing to the Contractor. The Contractor shall promptly correct deficiencies covered under the terms of this Contract at its expense within thirty (30) calendar days, unless otherwise agreed by LAWA.
- D. LAWA may retain a qualified Elevator Consultant acceptable to both parties to make tests and inspections on its behalf.
- E. If the Contractor fails to perform the work required by the terms of this Contract in a diligent and satisfactory manner, LAWA, after thirty (30) calendar days' written notice to the Contractor listing the deficiencies or failures to perform, may perform or cause to be performed all or any part of the work required hereunder.
- F. The Contractor agrees that it will reimburse LAWA for any expenses incurred therefor, or LAWA, at its election, may deduct such expenses from any sum owed to the Contractor.
- G. The waiver by LAWA of a breach of any provision of this Contract by the Contractor shall not operate or be construed as a waiver of any subsequent breach by the Contractor.
- H. In the event the Contractor disputes a listing of deficiencies or failures to perform, in whole or in part, and the parties cannot resolve the dispute, a qualified Elevator Consultant acceptable to both parties may be retained to conduct a non-binding mediation of any disputes, and LAWA and the Contractor shall split the mediation fees equally.
- I. In the event that LAWA retains a mutually acceptable Elevator Consultant to provide a maintenance audit:
 - 1. A reasonable time will be allowed for the Contractor to correct the deficiencies noted in the maintenance audit; and
 - 2. If the Elevator Consultant's follow-up review reveals the deficiencies (either in whole or in part) have not been corrected to LAWA's satisfaction, the Contractor shall reimburse LAWA for the cost of any further follow-up reviews initiated by it, in its sole

discretion, until all deficiencies have been resolved to the satisfaction of LAWA or its authorized representative.

3. Such reimbursement may be by means of invoicing the Contractor, or by deducting the cost of such additional review(s) from sums owed to the Contractor.

EMPLOYEES OF THE CONTRACTOR TO BE SATISFACTORY

- A. The Contractor agrees that all labor it furnishes will be trained journey-level mechanics, thoroughly skilled in elevator, escalator, and moving walks in Preventive Maintenance and Repair, directly employed and supervised. Any and all employees performing work under this Contract must have the required licenses set forth herein and shall be satisfactory to LAWA. LAWA shall be given at least fifteen (15) calendar days' notice prior to making changes to site-specific mechanic/employees.
- B. The Contractor shall be responsible for maintaining reasonably satisfactory standards for employees' competency, conduct, courtesy, honesty, integrity, accurate completion of maintenance control plan records, and appearance (including clean uniforms identifying them as employees of the Contractor) and shall be responsible for taking such disciplinary action with respect to any employee, as may be necessary.
- C. After consultation with LAWA and/or LAWA's elevator consultant, the Contractor shall, after being given reasonable notice, replace any employees not meeting the above criteria.
- D. The Contractor will provide a list of back-up personnel within ten (10) business days after award of contract for each employee assigned to LAWA in the event of his or her illness, disability, vacation, or leave of absence for any reason. The back-up personnel are expected to cover all duties and responsibilities of the Contractor's regular personnel with no disruption in service. LAWA will be informed prior to back-up personnel being used.

EXCLUSIONS: THE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR THE FOLLOWING

- A. [THIS SECTION HAS BEEN REMOVED AND NO LONGER APPLIES]
- B. Repair or replacement of building items, such as hoistway or machine room walls and floors, car enclosures, car finish floor material, hoistway and car entrance frames, car or hoistway sills, and signal fixture faceplate surfaces.
- C. Mainline and auxiliary disconnect switches, fuses, and feeders to control panels. The Contractor is responsible for wires from the mainline disconnect to the elevator controllers.

- D. Machine room lighting. However, Contractor shall replace machine room lamps if they are provided by LAWA.
- E. Smoke and heat sensors and related fire safety equipment. All fire alarm equipment outside of the machine room and hoistway. All telephone equipment outside of the machine room and hoistway.
- F. Standby power generators and associated contacts and relays and wiring to the elevator machine rooms (exclusive of wiring connections to elevator controller).
- G. Building paging and/or communication systems, including consoles, panels and wiring to junction box on elevator controllers. However, the Contractor shall maintain paging system and emergency telephone speakers in the cars and wiring from each such speaker to the machine room junction boxes.
- H. Failure or fluctuations of property electric power (Callouts during onsite hours will not be billable), repair or replacement of building items including hoistway and machine room heating, air conditioning, or humidity control. The Contractor is responsible for heating and cooling equipment mounted in or on elevator equipment cabinets and dedicated to heating and/or cooling the equipment therein.
- I. Ingress by water or other material into machine room, hoistway, car enclosure, or pit.
- J. The cost of replacement of keys located in fire key box will not be the responsibility of the Contractor, but the Contractor will be responsible for ensuring all required keys are included in each fire key box.
- K. Underground hydraulic casings, cylinders, and piping.

REMOVAL OF PARTS

- A. No parts or components required for the performance of Services on the vertical transportation equipment or required for its operation may be removed from the job site without prior written approval from LAWA.
- B. This does not include renewal parts stocked on the job by the Contractor but does include parts and components which were installed with and are a part of the conveyance installation, and parts delivered to the property and paid for by LAWA, which shall remain LAWA property until installed on the equipment.
- C. Parts that become out of service and are replaced during the performance of Services may be removed from the job site to be properly discarded.

MACHINE ROOMS

- A. No open storage of parts or supplies shall be permitted, including flammable containers used for storing parts or supplies.

- B. A metal can and lid shall also be provided in each machine room for the temporary storage of oily rags.
- C. Machine rooms and parts cabinets shall be kept clean and neat at all times. Floors shall be kept professionally painted on a continuous basis, and maintained clean and free of dirt, debris, oil, carbon dust, rags, un-stored parts, or other items.

WIRING DIAGRAMS

- A. Wiring diagrams shall be Laminated and stored (except where mounted on boards) and shall be copied and replaced by the Contractor if their condition warrants.
- B. The Contractor shall maintain their own and LAWA's complete set of straight-line wiring diagrams, showing "As-Built" conditions and any changes or modifications to circuits resulting from control modifications, parts replacement, or equipment upgrades.
- C. LAWA may reproduce these original or modified "As-Built" drawings and shall retain sole possession of this set of drawings in the event that the Contract is terminated, or, if LAWA's set of drawings cannot be located at that time, LAWA may reproduce the Contractor's drawings at his expense at that time.
- D. The Contractor shall also maintain its own set of wiring diagrams in readable condition, and, if reproduction becomes necessary, it will check for readability of marked-up changes on the reproduced set and retrace them if necessary.

MACHINE ROOM LOG

- A. The Contractor shall post a preventive maintenance schedule and a work log in a conspicuous location in each elevator machine room. For escalators, the schedules and logs shall be in rooms and/or boxes designated by LAWA.
- B. The log shall include all entries for routine maintenance and repairs, including Supervisor's surveys.
- C. Entries shall include date work is completed, Mechanic's or Supervisor's name, brief description of work completed (including number of conveyances serviced) and the approximate time required for the work.
- D. LAWA may inspect and copy the logs and maintenance schedules at any time.
- E. If the Contractor is utilizing a process-oriented computer-based system to schedule maintenance operations, the Contractor and LAWA shall review work and callback information which can be provided and the Contractor shall provide such documentation as LAWA may require, it being the intent of this contract that data similar to that described above shall be available by means of computer printouts which are readily obtainable by LAWA.

MAINTENANCE CONTROL PROGRAM

Contractor will be Maintenance Control Program (MCP) certified with the California State Labor and Industries. The Maintenance Control Program shall be posted on the controller cabinets, at least one per group, as required by current code, or located in a visible location in each machine room. For escalators, in rooms and/ or boxes designated by LAWA.

EXTENDED SHUT DOWN

LAWA shall be notified a minimum forty-eight (48) hours in advance for any work that requires a conveyance to be out of normal operation for more than twelve (12) hours. The Contractor will coordinate with LAWA Maintenance Manager to determine the best time for the outage.

SCHEDULING OF WORK

- A. Within ninety (90) days of receipt of a fully executed copy of this Contract, the Contractor shall prepare and submit a schedule of repairs, tests, or other work which will require a shutdown of one or more conveyances within the next ninety (90) days. The nature of work, conveyance involved, and anticipated days out of service shall be included. Subsequently, this schedule shall be updated weekly in time for the weekly meeting referenced in this section.
- B. The Contractor will not contact anyone outside of LAWA, besides California State or City of Los Angeles Inspection Division to schedule required tests, without authorization from the LAWA Maintenance Manager and/or contract administrator.
- C. The Airport is an operating facility which will continue in full operation throughout the term of this Contract. Where Airport operations conflict with those of the Contractor, the operations of the Airport will take precedence over those of the Contractor. It shall be the sole responsibility of the Contractor to schedule and coordinate its activities with those of the Airport to assure minimum disruption of Airport operations.

THE CONTRACTOR REVIEWS

Weekly, unless otherwise directed by LAWA, the Contractor shall meet with LAWA Maintenance Managers or his/her designee(s). LAWA is responsible for scheduling the meeting. The scope of this meeting shall include:

- A. A review of the previous week's callbacks.
- B. A review of maintenance including work performed, progress on any deficiency Lists or other programs, and scheduled work requiring removal of conveyances from service.
- C. A review of any reported complaints.
- D. Such other conveyance related items as may be appropriate.
- E. Daily basis report shows every car in past twenty-four (24) hours that had a service call.

- F. If requested by LAWA, the Contractor shall provide a monthly List of callbacks and billable invoices for work outside the contract for review prior to the meetings.

SPECIAL CONDITIONS

- A. Annually, the Contractor shall, within thirty (30) days of the end of each calendar year, provide to LAWA maintenance management:
1. A written report providing results of conveyances that have been audited by the Contractor in the past year.
 2. The duration between audits of each conveyance covered under this Contract shall not exceed three (3) years.
 3. At its option, LAWA may request such reports prior to the end of each year, in which case the next such annual report need not be provided, unless otherwise agreed.
- B. LAWA requires remote monitoring of the equipment to facilitate its Maintenance program, all related installation and maintenance costs shall be at LAWA expense. The Contractor is responsible for all Lift-Net® connections in direct contact with elevator/escalator controls and will maintain and ensure proper functionality of these connections on a quarterly cycle or as requested by LAWA.

LAWA'S RESPONSIBILITIES

- A. Provide clear, safe, and convenient access to the Property and to elevator equipment rooms and pits.
- B. Maintain car Lighting, telephone lines to controller terminals, equipment room electrical switch gear, and electrical feeders to conveyance controllers, Firefighters' Control Room, and Lobby Security Desk consoles.
- C. Maintain equipment room heating and air conditioning systems. Temperature range sixty (60) degrees Fahrenheit to ninety (90) degrees Fahrenheit, non-condensing.
- D. Maintain fire alarm initiating devices in elevators host ways, Lobbies, machine rooms, etc.
- E. Prevent storage of property, equipment, or supplies in elevator equipment rooms and obstruction of equipment room access corridors and doors.
- F. Maintain standby power generator systems (if applicable) and related switch gear and feeders.
- G. Maintain equipment rooms, hoist ways, and pits in a code compliant and dry condition.
- H. Coordinate with the Contractor in regard to LAWA required equipment retrofits such as Lift-Net® and Sleep mode systems, etc.

- I. During building construction and/or retrofit, make provisions to limit infiltration of dust and debris into conveyance equipment and equipment spaces.
- J. Coordination with the LAWA instrument shop when performing LAFD Reg 4 testing.

COMMUNICATION

The Contractor will arrange for all communication between LAWA and contractors' employees via use of a cell phone or radio.

CONTRACTOR OFFICE/SHOP SPACE:

LAWA will provide Contractor the space it deems necessary to perform the Services under this RFP. If Contractor desires additional leased space LAWA will provide Contractor with information regarding any available lease hold areas to rent at Contractor's expense and not billable to LAWA. LAWA assumes no responsibility against loss, whether by theft or otherwise, of any parts, tools, equipment and supplies stored on LAWA's premises.

THE AIRPORT OPERATIONS ENVIRONMENT

It is important to note that the airport environment presents a set of unique challenges that do not exist in a typical commercial setting.

- A. Contractor may be required to perform work in areas that are in "secure or sterile areas" of the airport and not open to the general public. In such cases, all personnel must possess LAX Security Identification Area (SIDA) badges and it will be the responsibility of the Contractor to comply and maintain all requirements of LAWA's Security Credentialing Office, also known as Badge Office, and the United States Customs and Border Protection to secure the required badges for all staff with proper icons and seals to access "secure or sterile" areas. Please note that these additional requirements may increase the timeline and must be completed before work can be performed in those secure/sterile areas. For questions related to security badge requirements for LAX and Van Nuys call (424) 646-5500 and/or consult the LAWA Badge Office website at <https://sbo.lawa.org>. Contractor and its subcontractors will be required to comply with LAWA security policies and meet established requirements. Contractor will be responsible for all expenses incurred by LAWA for corrective action resulting from either the Contractor's or its subcontractor's non-compliance with LAWA or Transportation Security Administration (TSA) rules.
- B. Facilities must be open 365 days-a-year with operating hours and staffing levels reflecting the fluctuations in daily passenger traffic, as determined by LAWA from time to time.
- C. Deliveries for both construction and operations must be made in conformance with LAWA and TSA regulations, which may include limitations on time of day and location/routing. Staff requiring access to drive on the airfield must have a driver icon on

their badge and a proper motor vehicle permit(s) on the vehicle that allows access to the airfield issued by the LAWA Airfield Permits Office.

Attachment

2

Attachment 2
Contractor's Price Proposal

LOS ANGELES WORLD AIRPORTS: COST PROPOSAL FOR:

Elevator, Escalator and Moving Walkway Full Maintenance, Repair, Modernization, Materials and Related Services at Los Angeles International Airport (LAX) and Van Nuys Airport (VNY)

Proposer's Name		Otis Elevator										
Labor Costs												
The following are the fully burdened hourly rates including employee benefits, overhead, and profit for the various positions and the calculated annual labor budget. (Please fill out only the cells shaded in blue)												
Daily Non-Holiday Physical Staffing Requirement	Position Titles	Contract Term										
		Year 1			Year 2		Year 3		Option Year 4		Option Year 5	
Dedicated Contract Site Manager (One salaried position working M-F)		Hourly Rate	Annual Salary		Annual Salary		Annual Salary		Annual Salary		Annual Salary	
1	Site Manager (1 FTE / M-F / Yearly Salary)	N/A	\$	90,000.00	\$	92,700.00	\$	95,481.00	\$	98,345.43	\$	101,295.79
1	Safety Manager (1 FTE / M-F / Yearly Salary)	N/A	\$	116,000.00	\$	119,480.00	\$	123,064.40	\$	126,756.33	\$	130,559.02
Required Staffing Monday through Friday 5 - Days/week (Except on City of Los Angeles Recognized Holidays)		M-F Hourly Rate	Daily M-F Total	Annual Total for M-F Staffing Excluding Holidays (248 days)	M-F Hourly Rate	Annual Total for M-F Staffing Excluding Holidays (248 days)	M-F Hourly Rate	Annual Total for M-F Staffing Excluding Holidays (248 days)	M-F Hourly Rate	Annual Total for M-F Staffing Excluding Holidays (248 days)	M-F Hourly Rate	Annual Total for M-F Staffing Excluding Holidays (248 days)
1	Supervisor AM	\$ 206.34	\$ 1,650.72	\$ 409,378.56	\$ 213.56	\$ 423,706.81	\$ 220.93	\$ 438,324.69	\$ 228.55	\$ 453,446.90	\$ 236.44	\$ 469,090.81
1	Supervisor MID	\$ 245.03	\$ 1,960.24	\$ 486,139.52	\$ 253.61	\$ 503,154.40	\$ 262.36	\$ 520,513.23	\$ 271.41	\$ 538,470.94	\$ 280.77	\$ 557,048.18
1	Supervisor PM	\$ 275.98	\$ 2,207.84	\$ 547,544.32	\$ 285.64	\$ 566,708.37	\$ 295.49	\$ 586,259.81	\$ 305.69	\$ 606,485.77	\$ 316.23	\$ 627,409.53
3	Technicians AM	\$ 183.41	\$ 4,401.84	\$ 1,091,656.32	\$ 189.83	\$ 1,129,864.29	\$ 196.38	\$ 1,168,844.61	\$ 203.15	\$ 1,209,169.75	\$ 210.16	\$ 1,250,886.10
3	Technicians MID	\$ 217.80	\$ 5,227.20	\$ 1,296,345.60	\$ 225.42	\$ 1,341,717.70	\$ 233.20	\$ 1,388,006.96	\$ 241.25	\$ 1,435,893.20	\$ 249.57	\$ 1,485,431.51
9	Technicians PM	\$ 245.31	\$ 17,662.32	\$ 4,380,255.36	\$ 253.90	\$ 4,533,564.30	\$ 262.66	\$ 4,689,972.27	\$ 271.72	\$ 4,851,776.31	\$ 281.09	\$ 5,019,162.59
As/If Required	Apprentice/Helper AM	\$ 146.72	-	-	\$ 151.86	-	\$ 157.09	-	\$ 162.51	-	\$ 168.12	-
As/If Required	Apprentice/Helper MID	\$ 174.23	-	-	\$ 180.33	-	\$ 186.55	-	\$ 192.99	-	\$ 199.64	-
As/If Required	Apprentice/Helper PM	\$ 196.24	-	-	\$ 203.11	-	\$ 210.12	-	\$ 217.36	-	\$ 224.86	-
20	Regular Staffing Total		\$ 33,110.16	\$ 8,211,319.68		\$ 8,498,715.87		\$ 8,791,921.57		\$ 9,095,242.86		\$ 9,409,028.74
Required Staffing Every Saturday		Saturday Hourly Rate	Saturday Total	Annual Total for Saturday Staffing (52 days)	Saturday Hourly Rate	Annual Total for Saturday Staffing (52 days)	Saturday Hourly Rate	Annual Total for Saturday Staffing (52 days)	Saturday Hourly Rate	Annual Total for Saturday Staffing (52 days)	Saturday Hourly Rate	Annual Total for Saturday Staffing (52 days)
1	Supervisor AM	\$ 257.92	\$ 2,063.36	\$ 107,294.72	\$ 266.95	\$ 111,050.04	\$ 276.16	\$ 114,881.26	\$ 285.68	\$ 118,844.66	\$ 295.54	\$ 122,944.81
1	Supervisor MID	\$ 257.92	\$ 2,063.36	\$ 107,294.72	\$ 266.95	\$ 111,050.04	\$ 276.16	\$ 114,881.26	\$ 285.68	\$ 118,844.66	\$ 295.54	\$ 122,944.81
1	Supervisor PM	\$ 257.92	\$ 2,063.36	\$ 107,294.72	\$ 266.95	\$ 111,050.04	\$ 276.16	\$ 114,881.26	\$ 285.68	\$ 118,844.66	\$ 295.54	\$ 122,944.81
3	Technicians AM	\$ 229.26	\$ 5,502.24	\$ 286,116.48	\$ 237.28	\$ 296,130.56	\$ 245.47	\$ 306,347.06	\$ 253.94	\$ 316,916.03	\$ 262.70	\$ 327,849.64
3	Technicians MID	\$ 229.26	\$ 5,502.24	\$ 286,116.48	\$ 237.28	\$ 296,130.56	\$ 245.47	\$ 306,347.06	\$ 253.94	\$ 316,916.03	\$ 262.70	\$ 327,849.64
3	Technicians PM	\$ 229.26	\$ 5,502.24	\$ 286,116.48	\$ 237.28	\$ 296,130.56	\$ 245.47	\$ 306,347.06	\$ 253.94	\$ 316,916.03	\$ 262.70	\$ 327,849.64
As/If Required	Apprentice/Helper AM	\$ 183.40	-	-	\$ 189.82	-	\$ 196.37	-	\$ 203.14	-	\$ 210.15	-
As/If Required	Apprentice/Helper MID	\$ 183.40	-	-	\$ 189.82	-	\$ 196.37	-	\$ 203.14	-	\$ 210.15	-
As/If Required	Apprentice/Helper PM	\$ 183.40	-	-	\$ 189.82	-	\$ 196.37	-	\$ 203.14	-	\$ 210.15	-
12	Regular Staffing Total		\$ 22,696.80	\$ 1,180,233.60		\$ 1,221,541.78		\$ 1,263,684.97		\$ 1,307,282.10		\$ 1,352,383.33
Required Staffing Every Sunday		Sunday Hourly Rate	Sunday Total	Annual Total for Sunday Staffing (52 days)	Sunday Hourly Rate	Annual Total for Sunday Staffing (52 days)	Sunday Hourly Rate	Annual Total for Sunday Staffing (52 days)	Sunday Hourly Rate	Annual Total for Sunday Staffing (52 days)	Sunday Hourly Rate	Annual Total for Sunday Staffing (52 days)
1	Supervisor AM	\$ 309.51	\$ 2,476.08	\$ 128,756.16	\$ 320.34	\$ 133,262.63	\$ 331.39	\$ 137,860.19	\$ 342.83	\$ 142,616.36	\$ 354.66	\$ 147,536.63
1	Supervisor MID	\$ 309.51	\$ 2,476.08	\$ 128,756.16	\$ 320.34	\$ 133,262.63	\$ 331.39	\$ 137,860.19	\$ 342.83	\$ 142,616.36	\$ 354.66	\$ 147,536.63
1	Supervisor PM	\$ 309.51	\$ 2,476.08	\$ 128,756.16	\$ 320.34	\$ 133,262.63	\$ 331.39	\$ 137,860.19	\$ 342.83	\$ 142,616.36	\$ 354.66	\$ 147,536.63
3	Technicians AM	\$ 257.92	\$ 6,190.08	\$ 321,884.16	\$ 266.95	\$ 333,150.11	\$ 276.16	\$ 344,643.78	\$ 285.68	\$ 356,533.99	\$ 295.54	\$ 368,834.42
3	Technicians MID	\$ 257.92	\$ 6,190.08	\$ 321,884.16	\$ 266.95	\$ 333,150.11	\$ 276.16	\$ 344,643.78	\$ 285.68	\$ 356,533.99	\$ 295.54	\$ 368,834.42
3	Technicians PM	\$ 257.92	\$ 6,190.08	\$ 321,884.16	\$ 266.95	\$ 333,150.11	\$ 276.16	\$ 344,643.78	\$ 285.68	\$ 356,533.99	\$ 295.54	\$ 368,834.42
As/If Required	Apprentice/Helper AM	\$ 220.08	-	-	\$ 227.78	-	\$ 235.64	-	\$ 243.77	-	\$ 252.18	-
As/If Required	Apprentice/Helper MID	\$ 220.08	-	-	\$ 227.78	-	\$ 235.64	-	\$ 243.77	-	\$ 252.18	-
As/If Required	Apprentice/Helper PM	\$ 220.08	-	-	\$ 227.78	-	\$ 235.64	-	\$ 243.77	-	\$ 252.18	-
12	Regular Staffing Total		\$ 25,998.48	\$ 1,351,920.96		\$ 1,399,238.19		\$ 1,447,511.91		\$ 1,497,451.07		\$ 1,549,113.13
Holiday Physical Staffing Requirement	Position Titles	Contract Term										
		Year 1			Year 2		Year 3		Option Year 4		Option Year 5	
Staffing requirement and hourly rates for Holidays recognized by the City of Los Angeles and Elevator Mechanic Union Agreements (3 Total: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day)		Hourly Rate	One Holiday Total	Annual Holiday Staffing (8 Holidays)	Hourly Rate	Annual Holiday Staffing (8 Holidays)	Hourly Rate	Annual Holiday Staffing (8 Holidays)	Hourly Rate	Annual Holiday Staffing (8 Holidays)	Hourly Rate	Annual Holiday Staffing (8 Holidays)
1	Supervisor AM	\$ 309.51	\$ 2,476.08	\$ 19,808.64	\$ 320.34	\$ 20,501.94	\$ 331.39	\$ 21,209.26	\$ 342.83	\$ 21,940.98	\$ 354.66	\$ 22,697.94
1	Supervisor MID	\$ 309.51	\$ 2,476.08	\$ 19,808.64	\$ 320.34	\$ 20,501.94	\$ 331.39	\$ 21,209.26	\$ 342.83	\$ 21,940.98	\$ 354.66	\$ 22,697.94
1	Supervisor PM	\$ 309.51	\$ 2,476.08	\$ 19,808.64	\$ 320.34	\$ 20,501.94	\$ 331.39	\$ 21,209.26	\$ 342.83	\$ 21,940.98	\$ 354.66	\$ 22,697.94
3	Technicians AM	\$ 257.92	\$ 6,190.08	\$ 49,520.64	\$ 266.95	\$ 51,253.86	\$ 276.16	\$ 53,022.12	\$ 285.68	\$ 54,851.38	\$ 295.54	\$ 56,743.76
3	Technicians MID	\$ 257.92	\$ 6,190.08	\$ 49,520.64	\$ 266.95	\$ 51,253.86	\$ 276.16	\$ 53,022.12	\$ 285.68	\$ 54,851.38	\$ 295.54	\$ 56,743.76
3	Technicians PM	\$ 257.92	\$ 6,190.08	\$ 49,520.64	\$ 266.95	\$ 51,253.86	\$ 276.16	\$ 53,022.12	\$ 285.68	\$ 54,851.38	\$ 295.54	\$ 56,743.76
As/If Required	Apprentice/Helper AM	\$ 220.08	-	-	\$ 227.78	-	\$ 235.64	-	\$ 243.77	-	\$ 252.18	-
As/If Required	Apprentice/Helper MID	\$ 220.08	-	-	\$ 227.78	-	\$ 235.64	-	\$ 243.77	-	\$ 252.18	-
As/If Required	Apprentice/Helper PM	\$ 220.08	-	-	\$ 227.78	-	\$ 235.64	-	\$ 243.77	-	\$ 252.18	-
12	Holiday Staffing Total		\$ 25,998.48	\$ 207,987.84		\$ 215,267.41		\$ 222,694.14		\$ 230,377.09		\$ 238,325.10
Staffing requirement and hourly rates for Holidays ONLY recognized by the City of Los Angeles (5 Total: Martin Luther King, Jr. Day, President's Day, Cesar Chavez Day, Juneteenth, Indigenous Peoples' Day)		Hourly Rate	One Holiday Total	Annual Holiday Staffing (5 Holidays)	Hourly Rate	Annual Holiday Staffing (5 Holidays)	Hourly Rate	Annual Holiday Staffing (5 Holidays)	Hourly Rate	Annual Holiday Staffing (5 Holidays)	Hourly Rate	Annual Holiday Staffing Total
1	Supervisor AM	\$ 206.34	\$ 1,650.72	\$ 8,253.60	\$ 213.56	\$ 8,542.48	\$ 220.93	\$ 8,837.19	\$ 228.55	\$ 9,142.07	\$ 236.44	\$ 9,457.48
1	Supervisor MID	\$ 245.03	\$ 1,960.24	\$ 9,801.20	\$ 253.61	\$ 10,144.24	\$ 262.36	\$ 10,494.22	\$ 271.41	\$ 10,856.27	\$ 280.77	\$ 11,230.81
1	Supervisor PM	\$ 275.98	\$ 2,207.84	\$ 11,039.20	\$ 285.64	\$ 11,425.57	\$ 295.49	\$ 11,819.75	\$ 305.69	\$ 12,227.54	\$ 316.23	\$ 12,649.39
3	Technicians AM	\$ 183.41	\$ 4,401.84	\$ 22,009.20	\$ 189.83	\$ 22,779.52	\$ 196.38	\$ 23,565.42	\$ 203.15	\$ 24,378.42	\$ 210.16	\$ 25,219.48
3	Technicians MID	\$ 217.80	\$ 5,227.20	\$ 26,136.00	\$ 225.42	\$ 27,050.76	\$ 233.20	\$ 27,984.01	\$ 241.25	\$ 28,949.46	\$ 249.57	\$ 29,948.22
3	Technicians PM	\$ 245.31	\$ 5,887.44	\$ 29,437.20	\$ 253.90	\$ 30,467.50	\$ 262.66	\$ 31,518.63	\$ 271.72	\$ 32,606.02	\$ 281.09	\$ 33,730.93
As/If Required	Apprentice/Helper AM	\$ 146.72	-	-	\$ 151.86	-	\$ 157.09	-	\$ 162.51	-	\$ 168.12	-
As/If Required	Apprentice/Helper MID	\$ 174.23	-	-	\$ 180.33	-	\$ 186.55	-	\$ 192.99	-	\$ 199.64	-
As/If Required	Apprentice/Helper PM	\$ 196.24	-	-	\$ 203.11	-	\$ 210.12	-	\$ 217.36	-	\$ 224.86	-
12	Holiday Staffing Total		\$ 21,335.28	\$ 106,676.40		\$ 110,410.07		\$ 114,219.22		\$ 118,159.78		\$ 122,236.30
Annual price adjustment from Base Year (if any):				Base Year		\$ 11,264,138.48		\$ 11,657,353.33		\$ 12,058,577.21		\$ 12,473,614.67
							3.50%		3.45%		3.45%	
Notes: (1) - Yearly Increases are based on the International Union Of Elevator Constructors (IUEC) collective bargaining agreement Local 18. (2) - Rate increases effective January 1 of each year starting with 2024. (3) - Yearly staffing costs totals are only a budgeted estimate figure. Actual costs will be based on actual worked hours by Contractor staff and agreed hourly rates.												

Parts & Materials - Cost Plus

The following is the mark-up that will be applied to all parts purchased on behalf of LAWA. Parts purchase invoices and back up information will be required in monthly invoicing. (Please fill out only the cells shaded in blue)

Parts & Materials	Contract Term						
	Year 1		Year 2		Year 3		Option Year 5
	Estimated Annual Parts Usage	Markup %	Projected Parts Usage Total	Projected Parts Usage Total	Projected Parts Usage Total	Projected Parts Usage Total	Projected Parts Usage Total
Total Estimated Annual Parts Budget/Proposed Price	\$900,000	15.00%	\$ 1,035,000.00	\$ 1,035,000.00	\$ 1,035,000.00	\$ 1,035,000.00	\$ 1,035,000.00
Initial Parts & Materials Order	\$4,000,000	10.00%	\$ 4,400,000.00	\$ -	\$ -	\$ -	\$ -
Annual Parts Budget for Landside Access Modernization Program (LAMP) Conveyances Commencing 2025 Year 8	\$250,000	15.00%	\$ -	\$ -	\$ 250,000.00	\$ 250,000.00	\$ 250,000.00

Attachment 2
Contractor's Price Proposal

LOS ANGELES WORLD AIRPORTS: COST PROPOSAL FOR:

Elevator, Escalator and Moving Walkway Full Maintenance, Repair, Modernization, Materials and Related Services at Los Angeles International Airport (LAX) and Van Nuys Airport (VNY)

Initial Parts & Materials Order for LAMP Conveyances Commencing in Year 1	\$1,000,000	10.00%	\$ -		\$ 1,100,000.00		
Annual price adjustment from Base Year (if any):	Base Year			0.0%	0.0%	0.0%	0.0%
Notes: (1) - The 15% parts & materials markup fee will remain fixed for the duration of the contract term. (2) - The Contractor will reduce the 15% parts and materials mark up fee by 5% for the first initial parts & material order (Markup fee at 10%). Furthermore, the Contractor will also charge the 10% markup fee on initial parts & material orders for new conveyances added to agreement from current and future construction projects. (3) - Yearly parts costs totals are only a budgeted estimate figure. Actual costs will be based on LAWA approved actual parts & material purchases + 15% markup fee.							

Regulation 4 Certified Inspector Fee

A Regulation 4 Certified Inspector will be required during the yearly Reg 4 inspection process for all elevators whether assigned to Contractor or LAWA Elevator team. Reg 4 Certified Inspector fees to be invoiced after service is completed. (Please fill out only the cells shaded in blue)

Regulation 4 Certified Inspector Fee and Other Conveyance fees (if any)	Contract Term						
	Year 1			Year 2	Year 3	Option Year 4	Option Year 5
	Fee per Conveyance	Markup %	Reg 4 Fee Total for All Conveyances	Reg 4 Fee Total for All Conveyances	Reg 4 Fee Total for All Conveyances	Reg 4 Fee Total for All Conveyances	Reg 4 Fee Total for All Conveyances
Reg 4 Certified Inspector Fee [Total of 244 Elevators]:	\$425	15.00%	\$ 119,255.00	\$ 125,217.75	\$ 131,478.64	\$ 138,052.57	\$ 144,955.20
Annual price adjustment from Base Year [if any]:	Base Year			5.0%	5.0%	5.0%	5.0%
Notes:							
(1) - Reg 4 yearly Certified Inspectors fee is \$425 per unit in year 1 + 15% markup fee.							
(2) - The yearly Reg 4 fee total for all conveyances is only a budgeted estimate figure. Actual costs will be based on LAWA's approved Reg 4 Certified Inspection request per elevator + 15% markup fee.							
(3) - Reg 4 yearly Certified Inspector fee may adjust yearly after the completion of the first year of this contract upon request by Contractor in writing with subcontractor back up information and LAWA approval up to the estimated yearly escalation rate.							

Other Costs (if any)

The following are the proposed addition costs associated with mobilization and startup. (Please fill out only the cells shaded in blue)

Other Costs		Base Term						
		Year 1			Year 2	Year 3	Option Year 4	Option Year 5
		Estimated Costs	Markup %	Total with Markup	Other Costs with markup	Other Costs with markup	Other Costs with markup	Other Costs with markup
Mobilization/Start-Up (if any):		\$ 135,438.72	0.00%	\$ 135,438.72	\$ -	\$ -	\$ -	\$ -
Other (if any):	Escalator Step Cleaning (Work subcontracted to Supreme Facility Svcs)	\$ 240,840.00	15.00%	\$ 276,966.00	\$ 285,274.98	\$ 293,833.23	\$ 302,648.23	\$ 311,727.67
Other (if any):	Vulcanizing Training Costs	\$ 8,000.00	10.00%	\$ 8,800.00	\$ -	\$ -	\$ -	\$ -
Annual estimated price adjustment from Base Year (if any):		Base Year			3.0%	3.0%	3.0%	3.0%
Total Other Costs with Markup Costs		\$ 421,204.72			\$ 285,274.98	\$ 293,833.23	\$ 302,648.23	\$ 311,727.67
Note:								
(1) - The Contractor will bill any subcontractual work at cost plus a 15% markup fee. The markup fee will remain fixed for the duration of the contract term.								
(2) - The escalator estimated cleaning costs are based on 2 hours per unit per month. Actual costs will be based on actual worked hours by subcontractor staff and agreed hourly rates. The fully burdened subcontractor biliable hourly rate is \$36.50.								
(3) - The escalator step cleaning hourly rates may adjust yearly after the completion of the first year of this contract upon request by Contractor in writing with subcontractor back up information and LAWA approval up to the estimated yearly escalation rate,								
(4) - The Contractor will charge a 10% markup fee on the costs from subcontractor for the initial Vulcanizing training for staff.								

Total Annual Estimated Contract Cost

The following are the annual contract cost for the contract term.

Total Annual Contract Cost per year	Base Term				
	Year 1	Year 2	Year 3	Option Year 4	Option Year 5
	\$ 17,239,598.20	\$ 13,102,846.06	\$ 14,868,889.07	\$ 14,199,315.46	\$ 14,644,624.28
Total 5 Year Contract Estimated Cost	\$74,055,273.08				

Attachment

3

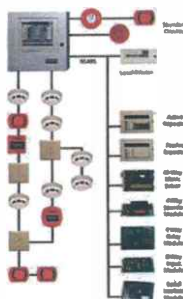


ATTACHMENT 3

Chief's Regulation No. 4

Program Manual 2014 Edition

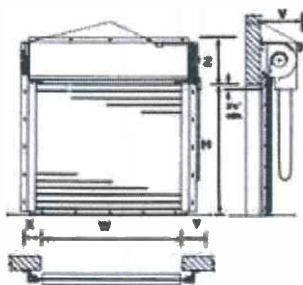
Fire Protection Systems and Equipment Testing



Reg. 4
Certified
Testers



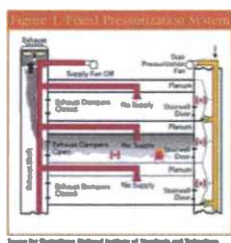
Performance
Tests & Reports



Repairs
by
Licensed Contractors



Permits for Repairs
When Required



Fire Prevention Inspections
Performed by
Fire Station & Fire Prevention
Personnel



System Owner
&
Certified Tester
Support



Program Oversight
&
Quality Assurance
by



Chief's Regulation No. 4 Unit



Program Established Since 1967



This manual was written and produced by the Los Angeles City Fire Department Chief's Regulation No. 4 Unit. The contents herein are the sole property of the Fire Department. Copyright laws expressly forbid any copying for resale or profit of this complete manual or any portion thereof. Copying for individual use is hereby granted

Introduction

Fire protection equipment and systems are installed in many types of buildings/occupancies throughout the City of Los Angeles such as residential, industrial/warehouse, commercial offices, institutions, schools, churches, high-rises, public assembly's and small businesses. Like any other types of equipment, fire protection equipment and systems need periodic preventative maintenance and testing to ensure they will perform correctly during a fire or life safety event.

In the 1950's and 1960's, the Fire Department made regular inspections of fire protection equipment and systems and required performance testing and repairs when obvious or suspected system or equipment defects were discovered.

On January 28, 1966, a major fire erupted on the eighth floor of the **Commercial Exchange Building** at Eighth and Olive Streets in downtown Los Angeles. The building had only one dry standpipe. Recent renovation of the building had made the Fire Department Connection at street level inoperative in a manner that could not be discerned by a visual inspection which resulted in the fire burning upward to the 12th floor before firefighters could control it.

Shortly after the Commercial Exchange fire, a similar situation occurred at the Roselyn Hotel, (also located in downtown Los Angeles). Again, firefighters were thwarted in their efforts by faulty standpipes. Prior to these fires, the Fire Department had identified the need of quality uniform fire protection equipment and systems testing program. These two fires confirmed that need and caused action to be taken.

The Los Angeles Fire Code gives the Fire Chief authority to make rules for the protection of life and property. These rules are known as "Regulations."

At the direction of the Fire Chief, throughout 1966 the Bureau of Fire Prevention and Public Safety (BFP&PS) developed criteria and standards for performance testing of fire protection equipment and systems. They included wet and dry standpipe systems (class I & II), automatic sprinkler systems, fire protection signaling systems (fire alarm), fire doors/automatic fire assemblies, fire escape drop ladders, and emergency power systems.

The criteria and standards were presented to the Fire Chief. The Chief then adopted the performance testing standards and presented them to the Board of Fire Commissioners for validation. On April 3, 1967, the "Chief's Regulation No. 4" became law.

The "Chief's Regulation No. 4" remained relatively unchanged until the early 1980's. By 1983, the Fire Department was becoming increasingly aware of the need to properly maintain the newer elaborate fire/life safety systems being installed in new high-rise buildings and other complex occupancies such as hospitals, public assemblages, etc.

Introduction

On March 21, 1984, the Board of Fire Commissioners adopted a completely revamped "Chief's Regulation No. 4." The new Chief's Regulation No. 4 included standards for smoke management systems, automatic elevator emergency operations, gas detection systems and complex fire/life safety systems that had not been previously addressed. Another important addition was the provision for the repair of defective equipment.

Prior to March 21, 1984, the Fire Department Fire Station or Fire Prevention Unit Personnel was required to witness all Chief's Regulation No. 4 testing with minimal drain on its overall operation. However, inclusion of more equipment, especially the more technical systems, severely hampered the ability of the Fire Department to continue witnessing all testing.

On May 11, 1987, the City of Los Angeles adopted a new Fire Code. Included in this Code are provisions to allow qualified individuals from private industry (not entire companies) to obtain a Certificate of Fitness to perform non-witnessed Chief's Regulation No. 4 testing and were identified as LAFD "Certified Testers" thus, twenty years after the birth of the Chief's Regulation No. 4, the Certified Tester Program was inaugurated. "Certified Testers" were allowed to conduct performance tests or portions thereof without the Fire Department present, provided the Fire Department was notified two full working days (actually 4 days day of notification and the day of the test is not counted) in advance of the test and were required to indicate if only a portion or none of the test would be witnessed.

Most of the Chief's Regulation No. 4 policies and procedures are still intact today. The most notable change is; a few testing frequency changes, new forms, clarification of system defects vs. non operational fire inspection items, and/or Building and Safety installation issues, and the use of newer technology to interact between the Los Angeles Fire Department, the Certified Testers and the public.

In March 2010 the Chief's Regulation No 4 Unit held a 3 day seminar outlining the upcoming new methods of documenting Chief's Regulation No. 4 test results on new F-340R performance report forms, proposed updated testing procedures and a revised Chief's Regulation No. 4 (Reg.4) Program Manual detailing all the policies and procedures in one manual.

This Manual is the culmination of all the work and input of previous LAFD Bureau of Fire Prevention and Public Safety personnel and LAFD Certified Testers. Once again a revamped Chief's Regulation No. 4 Testing Program has been designed to standardize testing, and handle the enormous growth of the program.

The information presented here in is intended to explain the Chief's Regulation No. 4 Program policies and procedures. It is not a recital of the Code, but will address most of the required procedures for testing fire protection systems and equipment.

Chiefs' Regulation No. 4 Program Manual

Table of Contents:

	<u>Section No.</u>
• Introduction	
• Scope of the Chief's Regulation No. 4 Program.....	01
• General Definitions.....	02
• Program Overview of Chief's Regulation No. 4	03
• Certified Tester Code of Conduct	04
• Application and Examination Process.....	05
• Supplemental Documentation.....	Appendix
○ Written, Oral, & Field Test Areas of Study, & Field Test Building Selection Criteria	
○ Testing Notification, and Report Guidelines	
○ Fire Protection Systems & Equipment & Required Testing Intervals	
○ Chief's Regulation No. 4 Procedures and Testing of Fire Protection Equipment	



Scope of the Chief's Regulation No. 4 Program

Scope of the Chief's Regulation No. 4 Program

Various provisions of the Los Angeles Fire Code hold the owner of fire protection equipment responsible for proper maintenance and testing of their systems. The Fire Code gives the Chief the general obligation and authority to determine that fire protection equipment and systems are properly maintained, tested and repaired.

The Chief's Regulation No. 4 Testing Program is a Los Angeles city program designed to accomplish these goals by certifying private individuals as "Certified Testers" to perform approved testing of fire protection systems and equipment without fire department personnel on-site to witness the test in accordance with Los Angeles Fire Code Section 117 Certificates of Fitness.

Building and fire code issues such as system or equipment upgrades, building or fire inspections are outside the scope of the Regulation No. 4 Program

The Chief's Regulation No. 4 (Reg. 4) program is a testing program intended to ensure maintenance of fire protection equipment and systems continue to function at the same level as originally intended to operate in accordance with the code(s) in effect when a new system is installed or when an existing system has been upgraded (e.g. the Title 19, High-rise Retrofit Program of the late 1970's). Once a system is accepted by the Fire and/or Building Department each system or equipment is required to have the entire system tested at either 1 or 5 year intervals also known as a Reg. 4 "Initial Test" which is performed on the system or equipment "Anniversary Testing Date".

NOTE: When a system or equipment is in a state of obvious disrepair in a manner which makes the system or equipment unable to test the "Initial Test" shall not be performed, and therefore no test report is issued. The owner or owner's representative shall initiate a repair immediately. This repair is normally initiated by a "Notice of Violation" (NOV) issued by the Fire Department. Once the approved repair is made, the Initial Chief's Regulation No. 4 test is required.

The "Initial Test" procedure is intended to test the entire system to determine the operating condition of the equipment or system being tested. If system defects are found during the initial test, the Fire Department will require the defective component(s) to be repaired and retested to restore that equipment to proper operating condition.

Sometimes it is found that the equipment was installed in a manner inconsistent with applicable codes and policies, and the original acceptance test did not uncover the discrepancy, or in some cases, certain retroactive provisions may be applicable to the equipment. At the discretion of the Fire Department, the results of a Chief's Regulation No. 4 test may be used to initiate a system upgrade.

NOTE: The Chief's Regulation No. 4 testing program is not applicable for new system acceptance testing, although some testing procedures may be similar.

Scope of the Chief's Regulation No. 4 Program

In 2006 the State Fire Marshal mandated a program of inspection, testing and maintenance and for water based fire protection systems, which is almost identical to the provisions of Chief's Regulation No. 4 program. These provisions are commonly known as California Code of Regulations "Title 19/NFPA 25 Inspection, Testing, and Maintenance."

The Los Angeles Fire Department treats the two programs separately. The test procedures may be performed concurrently (by a Certified Tester), but the Chief's Regulation No. 4 Performance Report shall be submitted to the Fire Department to ensure all testing is performed and submitted correctly to the designated Fire Department Fire Station or Fire Prevention Unit in a consistent manner by qualified individuals certified to perform each test. Companies cannot become certified. Only an individual can hold a Chief's Regulation No. 4 (Reg.4) Certificate of Fitness.

The Chief's Regulation No. 4 Unit is responsible for coordinating the Chief's Regulation No. 4 Program. Its main duties are to examine qualified individual applicants to determine competency to become a LAFD Chief Regulation No.4 Certificate of Fitness holder, and to provide oversight of all Certified Testers and act as a liaison between Testers, the public and Fire Department personnel.



Chief's Regulation No.4 Program

General Definitions

Chief's Regulation No.4 Program

General Definitions

Building Inspector (Los Angeles Department of Building and Safety): A Member of the Los Angeles Department of Building and Safety who enforces the City of Los Angeles Building Code and works with the Los Angeles Fire Department on issues concerning, new construction system upgrades tenant improvement, building permits etc.

Certificate of Fitness: - Section 117 of the Los Angeles Fire Code defines a Certificate of Fitness as a written document issued by the authority of the Chief to any person for the purpose of granting permission to such person to conduct or engage in any operation or act for which approval of the Fire Department is required by Division 6 of the Los Angeles Fire Code. The document issued in a wallet-sized identification card which contains; the name of the Certified Tester, company information, current photograph and systems and equipment for which the Tester is certified.

Certified Tester: An individual approved by the Los Angeles Fire Department Chief's Regulation No. 4 Unit to test the performance of fire protection systems/equipment and submit the results to the Fire Department

Note: The Company itself is not certified

Certified Tester Scope of Practice: The scope of the Certified Tester does not include the evaluation of; the system design, equipment upgrades, or inspections of the building/area where the system resides. Testers are required to use only LAFD accepted performance criteria that is necessary to determine the operability of fire protection system(s) and equipment for which they are certified.

Chief's Regulation No. 4 Certificate of Fitness: Certification that a person has successfully passed all the requirements of the Los Angeles Fire Department and has been granted approval to test or certify the performance of fire protection systems or equipment as per Section 117 of the Los Angeles Fire Code.

Chief's Regulation No. 4 Inspector: A Member of the Los Angeles Fire Department assigned to the Bureau of Fire Prevention and Public Safety, Chief's Regulation No. 4 Unit as a Fire Inspector. _____

Chief's Regulation No. 4 Performance Test: An approved procedure used to evaluate the condition of fire protection systems and equipment to determine that it will operate properly as intended and originally installed and approved by the Los Angeles Fire Department and/or Los Angeles Department of Building and Safety.

Note: This is a not an inspection. Chief's Regulation No. 4 Certified Testers shall not represent themselves as inspectors, nor refer to a Reg.4 test as a Reg. 4 inspection.

Chief's Regulation No.4 Program

General Definitions

Chief's Regulation No. 4 Testing Program: The program was developed by the Los Angeles City Fire Department and is designed to ensure consistent and standardized testing of fire protection systems and equipment in the City of Los Angeles in accordance with the City of Los Angeles Fire Code and applicable national standards, practices and manufacturer recommendations.

After a thorough examination process well qualified and experienced private individuals (not companies) are granted permission to test fire protection systems and equipment as LAFD Certified Testers without an onsite witness from a member of the Fire Department and submit the results to the Fire Department for review and follow-up.

The program includes ongoing oversight and support to all Certified Testers and provides a liaison between the public, the Certified Tester and Fire Department personnel.

All Certified Testers are required to complete an onsite "Field Observation" in the presence of the Chief's Regulation No. 4 inspector at least once prior to reapplying for a renewal of his/her Certificate of Fitness.

Defect: Fire Protection System/Equipment: A problem with a fire protection system or equipment or component that causes it to operate improperly as opposed to an item or condition that is not part of the fire protection system or equipment that may interfere with the intended effect of system.

Note: This is usually caused by the owner or owner's representative failing to properly maintain the area or building where the system/equipment is housed. These violations are routinely handled by LAFD personnel during the regularly scheduled fire/life safety inspection.

Disciplinary Process: A four phase procedure used as an attempt to encourage Certified Testers to comply with the policies and procedures of the Chief's Regulation No. 4 Testing Program

- Phase One: Written notice to improve
- Phase Two: Written notice of suspension of non witnessed testing privileges or restricted Reg. 4 activities
- Step/phase Three: Written notice of Certificate of Fitness Revocation Hearing
- Step/phase Four: Suspension or revocation of Certificate of Fitness

Field Observation: A Chief's Regulation No. 4 test performed by a Certified Tester which is required to be witnessed by a Reg. 4 Fire Inspector prior to re-applying for a Certificate of Fitness renewal. This test shall be scheduled in advance by the Tester, and is subject to the availability of the Chief's Regulation No. 4 Inspector.

Fire Code/Building Code Issues (FC/BC): Information or concerns closely related to fire protection systems and equipment testing, but are beyond the scope, authority and testing parameters of the Certified Tester. Items such as; storage stacked too close to sprinkler heads (FC), missing signs (FC), inadequate sprinkler coverage (BC) bent sprinkler or standpipe hangers etc. may require follow-up by the Fire Department or Department of Building and Safety for clarification or follow-up inspection.

Chief's Regulation No.4 Program

General Definitions

Fire Inspector/Firefighter (LAFD): A member of the Los Angeles Fire Department who performs visual fire/life safety inspections in the city of Los Angeles and enforces all applicable fire codes. A notice of violation may be issued to the building owner and/or responsible parties to correct fire code violations, or to test, repair or replace existing fire protection systems and equipment as needed. These types of inspectors are not authorized to require system or equipment upgrades or installation of new or additional equipment.

Note: Some Fire Inspectors perform; new construction/ tenant improvement inspections, plan checking and/or acceptance testing of fire protection systems and equipment.

Forms (LAFD):

Notice of Violation: (NOV): A form issued by LAFD personnel to a property owner/ responsible party to correct fire/life safety violations which include an order to repair or replace inoperative fire protection systems or equipment.

Fire Protection Equipment Performance Reports:

F-340R Fire Protection Equipment Performance Report , System Specific and General Use: The approved Los Angeles Fire Department form used by Certified Testers to submit the initial test results of a Chief's Regulation No. 4 performance test.

F-340RT Fire Protection Equipment Performance Report Retest Coversheet: The approved Los Angeles Fire Department form used by Certified Testers to submit the re-test results of the corrected items in the List of Defects from Section III of the initial Chief's Regulation No. 4 test.

F-340NT Fire Protection Equipment Performance Unable to Test: The approved Los Angeles Fire Department form issued by the Certified Tester, for equipment that is inoperative and in obvious need of repair in order to perform a Chief's Regulation No. 4 test.

Note: Performance tests shall not be performed on broken or seriously damaged equipment.

Inoperative Equipment: Equipment that requires repair in order to perform a Reg. 4 performance test .An F-340NT is required to be submitted to the Fire Department who will issue a notice of violation to repair and test or replace.

Where inoperative equipment will cause a serious threat to life and/or safety the Certified Tester is required to notify the Fire Department within 24 hours.

Inspection: A visual observation to determine the physical appearance or condition of a systems or equipment or component to determine that it appears to be in the in its proper position or normal state.

Note: Only LAFD Fire personnel are authorized to conduct fire/life safety inspections.

Chief's Regulation No.4 Program

General Definitions

Metro Fire Communications (Metro Fire): The Los Angeles Fire Department Emergency Dispatch Center Available 24 hours a day 7 days a week. (Formerly known as "OCD")

Normal Business Hours (LAFD): 7:00 am to 5:30 pm Monday through Thursday or Tuesday through Friday

Notification: All Certified Testers are required to contact Fire Department personnel, and building occupants concerning Chief's Regulation No. 4 Testing. The following 4 types of notifications shall be made in all cases where applicable:

1. Minimum Two Full Working Days Notice: (not including the date of notification) or day of the test)

Prior to performing a Chief's Regulation No. 4 test all Certified Tester shall contact the following:

- The Chief's Regulation No. 4 Unit
- The Fire Prevention Inspection Unit or Fire Station which has the inspection responsibility

2. Building Occupants: Prior to conducting any Chiefs Regulation No. 4 test, all Certified Testers shall ensure that the building occupants are given adequate notice prior to initiating evacuation alarm signals or when the test may interfere with normal building activities. (Posting signs are highly recommended)

3. Metro Fire Communications: (LAFD Dispatch) – Prior to the starting any test of a fire protection system or equipment that initiates notification appliances, the Certified Tester shall call Metro Dispatch) provide the following information:

- Chief's Regulation No. 4 certified Tester Name & Number
- Type of test
- Address of the test site
- Duration of the test
- Certified Tester call back number

4. Twenty Four Hours Notice – Anytime the Certified Tester encounters fire protection systems or equipment that is in such disrepair as to cause a serious threat to life safety and/ or property, the Tester shall contact the following Fire Department personnel within 24 hours of discovery.

During Normal Business Hours: (07:00 – 17:30)

- The responsible Fire Prevention Inspection Unit/Inspector or Fire Station
- The Chief's Regulation No. 4 Unit (If unable to speak to someone at the location shown above)
- Metro Fire Communications (LAFD Dispatch) 213 847-5360 or 213 847-5340 (If unable to speak to someone in the list above or after normal business hours)

Chief's Regulation No.4 Program

General Definitions

Off Hour Inspection: A request to the Chief's Regulation No. 4 Unit by a Certified Tester to perform any Reg. 4 activity for which a Chief's Regulation No. 4 Inspector is required for certification or renewal at time other than normal LAFD business hours.

Permits: All repairs on fire protection systems and or equipment shall be performed by a qualified person in accordance with the regulating body for repairs e.g. California State Licensing Board (CSLB) and or local Department of Building and Safety. Re-tests performed on any "System Defect(s)" that were repaired without a permit from the Los Angeles Department of Building and Safety (LADBS) when required, shall be deem invalid upon discovery.

Title 19/NFPA 25 Inspection Testing and Maintenance: Required inspection testing and maintenance of water based fire protection systems mandated by the Office of the California State Fire Marshal and is closely related to the Los Angeles City Chief's Regulation No. 4 Program which may be performed along with a Reg. 4 Test by a Certified Tester.

Type of Occupancy: The classification of a building used to determine; the type of operation permitted to be conducted and/or which Fire Department entity has the inspection responsibility (e.g. A-Assembly, B –Business, E-Education, I -institution etc)

System Description: description of all devices, appliances, components, and/or equipment attached to or associated with a fire protection system or equipment.

Serious Threat to Life Safety and/or Property: A system or equipment component that fails to provide notification of an emergency to building occupants prevents building evacuation, or is unable to control the spread of fire or smoke.

System Passed: Indication that the system or equipment has passed all required testing criteria in accordance with the policies and procedures of the Los Angeles Fire Department's Chief's Regulation No. 4 Testing Program.

Note: The evaluation of the adequacy of the system design, fire code compliance or building code compliance is not a criteria for system pass or fail status and is not within the scope of the Chief's regulation No. 4 Testing Program.

System Fail: Indication that the system or equipment did not pass all of the required tests/procedures as per the Los Angeles Fire Department testing form F-340R Fire Protection Equipment Performance Report.

Tax Registration Certificate: Documentation required by the Los Angeles City Office of Finance to conduct business in the city of Los Angeles



Chief's Regulation No. 4 Program

Program Overview

Chief's Regulation No. 4 Program

Program Overview

In the city of Los Angeles, the Fire Department is responsible for saving lives and property from fire panic, explosion or medical emergencies. When any such emergency occurs the Fire Department responds to mitigate the situation. While the Fire Department can do little to prevent medical emergencies, much can be done to prevent fire, panic or explosions. As such fire prevention is a high priority for the Los Angeles Fire Department. A big part of the Fire Department fire prevention program is periodic testing of all fire protection systems and equipment through the Chief's Regulation No. 4 Program which is unique to the city of Los Angeles.

The Initial Process

Fire Department Notice to Test (fire protection systems or equipment)

Based on the occupancy size, type or number of stories (above ground) a Fire Prevention Unit (staffed by Fire Inspectors) or a local fire station (staffed by Fire Fighters) conduct building fire/life safety inspections in accordance with the fire code to ensure building owners or their representatives are maintaining their occupancies and fire protection equipment and/or systems properly. Where non compliant issues are discovered, a written notice of violation is issued to the building owner or responsible party.

A specific notice to test specific fire protection equipment and systems is issued based on the type of system or equipment installed and the required testing interval. The official record of the last successful performance test (also known as a Chief's Regulation No. 4 or Reg. 4 test) is kept on file at each fire station or fire prevention unit. A copy of this report is also required to be retained on site for fire department inspection and review. At this time Notices of Violations (NOL) are delivered either personally, via U.S. Mail or by email.

The Notice of Violation will contain the following information:

- Address where the equipment and/or system is located
- Specific equipment needing a Chief's Regulation No. 4 Test
- Responsible party (usually the property owner)
- Date of the Notice
- LAFD Fire Station or Fire Prevention Unit/ that must be notified of the pending test and receive the test results

Once the owner or responsible party receives a written notice from the Fire Department to perform a Reg. 4 test of the fire protection equipment or system he/she must arrange to have the test performed by an individual who holds a valid Chief's Regulation No. 4 Certificate of fitness within 30 days.

Chief's Regulation No. 4 Program

Program Overview

Building Owner Voluntary Test

Building owners may initiate a test of their fire protection equipment prior to receiving a notice from the fire department, because of their desire to properly maintain the equipment or system, or to satisfy insurance requirements.

Such a test may be acceptable to satisfy the Fire Department's Chief's Regulation Number 4 requirements if permission from the fire station or fire prevention unit responsible for fire prevention and record retention for the building, is requested in advance. There is no guarantee that the Fire Department will accept the test, therefore the Certified Tester is required to verify that : (1) the test(s) is a required Reg. 4 test, and that the test is due, or is within the due date (according to fire department records) prior to advising the building owner/owners' representative to perform a voluntary test.

Once a Certified Tester agrees to conduct the work, the owner must provide a copy of the notice to the Reg. 4 Certified Tester(s). If more than one system requires testing, the Certified Tester must be certified to perform each particular test. More than one Tester may be required to perform the tests and submit a separate performance report for each type of test.. The owner must provide each Tester with a copy of the original notice. If a system description is needed for the system, the owner should provide it to the Certified Tester if possible.

Note: Certified Testers are required to be certified for each type of system to be tested and is solely responsible and liable for each test result. Company certification is not part of the Reg. 4 program. Only the individual Certified Tester can hold what is known as a "Certificate of Fitness" to test fire protection equipment and systems in the city of Los Angeles.

Initial Test (Test of entire system)

The initial Reg.4 test is normally a test of the entire system. This test is recurring test that is due on the anniversary test date at one or five year intervals depending on the required testing interval per system. The test results shall show the overall operational status of the entire system. In general, the building and system descriptions, test procedures performed shall be listed as part of the initial test.

Components, of the system found to operate below the minimum requirement or are found to be completely inoperable are indicated as "system defects". All system defects are required to be repaired and retested.

Note: Partial testing of the fire protection equipment or system may be allowed for large buildings complex buildings such as hospitals or high-rise buildings with the permission of the fire inspector responsible for fire code compliance in the building. In all cases the heart of the system shall be included in the test.

Chief's Regulation No. 4 Program

Program Overview

Report Submittals

The initial F-340R Fire Protection Equipment Performance Report

All Chief's Regulation No. 4 Fire Protection Performance Reports shall be submitted by the Certified Tester within seven days after the completion of any Chief's Regulation No. 4 test. All test report shall be sent directly to the fire station or fire prevention unit responsible for fire prevention and record retention based on occupancy type occupancy size, or number of stories (above the ground)

All reports are required to be sent via the following methods in the approved format:

- Fire Prevention Unit general email address
- Local Fire Station building address (unless requested to use a different method by the fire station personnel)
- Chief's Regulation No. 4 general email address

See the appendix of this manual for a list Fire Department contact information.

NOTE: Reports sent via email are required to be signed and sent in pdf document format.

The fire department personnel will review the test results for accuracy and determine the status of the system. Where system defects are found in the initial test report, the fire department member shall follow up with the building owner or owner's representative to ensure compliance in a timely manner.

Repairs, Permits and Retest of System Defects

Repair of Defects

All system defects shall be repaired and retested. The results shall be submitted to the Fire Department in the same method as the initial test. All repairs shall be made by a qualified individual who poses the required certifications and/or contractor license to conduct such repairs in accordance with all state and local codes. The Chief's Regulation No. 4 Program does not include the certification of repair companies.

NOTE: Most repairs require a permit from the Department of Building and Safety. The most common license is C-16 for water based systems, C-10 for fire alarm repairs or electrical repairs/ connections, Repair personnel are required to know when permits are required.

Permits for Repairs

Permits from the appropriate agency shall be obtained and a valid copy given to the building owner and retained onsite for fire department review. Any repairs conducted by an unqualified person or without a valid permit (when required) shall be deemed unapproved upon discovery.

Chief's Regulation No. 4 Program

Program Overview

Re-Test of System Defects Partial test)

Note: In some cases it may not be possible for repairs and retests to be performed within a 30 day period. The fire department will determine what additional time frame is acceptable.

F-340RT Fire Protection Equipment Performance Retest Report Coversheet is required to be attached to a copy of Section III "List of Defects" from the initial report

All System defects shall be re-tested by a LAFD Certified Tester and submitted to the fire department on the F-340RT Fire Protection Equipment Performance **Retest** Report after all valid repairs have been made. Only the items in the "List of Defects" in section III of the initial F-340R Fire Protection Equipment Performance Report are required to be re-tested. **The entire system is not required to be retested.** If a new problem is found which is not listed in the "List of Defects" The certified Tester is required to contact the fire station or fire prevention unit responsible for the building's fire prevention and be guided by their instructions.

New items are not permitted to be added to section III after the initial test has been signed by the initial Tester of the system. Where the Re-tester discovers items in section III that are outside the scope of or not required by the reg. 4 program the Re-Tester shall not perform a re-test and shall contact the fire station or fire prevention unit responsible for the building's fire prevention to have the initial report amended.

NOTE: All items in Section III are required to be repaired prior to report submittal to the fire department. The Tester that performed the initial test is not required to perform the re-test. Re-tests may be performed by any Certified Tester who holds the appropriate certification for the type system to be tested.

All reports are required to be sent via the following methods in the approved format.

- Fire Prevention Unit general email address
- Local Fire Station building address (unless requested to use a different format by the fire station personnel)
- Chief's Regulation No. 4 general email address

See the appendix of this manual for a list Fire Department contact information.

NOTE: Reports sent via email are required to be signed and sent in pdf document format.

Chief's Regulation No. 4 Program

Program Overview

CERTIFIED TESTERS

Since mid 1987, the Fire Department has certified applicants to perform Chief's Regulation No. 4 testing under the Certificate of Fitness Program. These tests are performance tests.

Upon successful completion of the examination process the applicant is given the title of "**Certified Tester**".

Certified Testers must be capable, qualified individuals. These individuals have been examined for competency by the Fire Department. They must demonstrate their ability to properly test the equipment for which they have a Certificate of Fitness. They are required to document the results of each test and submit the results to the Fire Department for review and follow up. The information is required to clearly show what was tested, how it was tested and the performance criteria required for each component or segment of the test.

Certified testers are not employees of the fire department and are not firefighters or inspectors. They are only given authority to test and submit the results to the fire department. **Requiring system upgrades, additional installations, performing fire code inspections or citing fire code violations is outside the scope of practice of Certified Testers.** The official record of testing is kept at fire department fire stations or fire prevention units. **Certified Testers do not have the authority to initiate a test based on their company records or to cause any business owner/operator to make repairs.** Although, they have no direct tie to the Los Angeles City Fire Department, they are considered to be representatives of the Department; consequently they are expected to be honest individuals who will not reflect poorly on the Fire Department or the Chief's Regulation No. 4 Program.

Certified Testers are to refer to any Reg. 4 testing activities as a "test" or "performance test" and shall identify themselves as Certified Testers and not Reg. 4 Inspectors.

Certified Testers are not given authority to perform inspections of any kind nor to identify themselves as Reg. 4 Inspectors.

Note: The use of the term Chief's Regulation No.4 inspection is inaccurate because an inspection is merely a visual observation, which is outside the scope of the Chief's Regulation No. 4 program.

Each Certified Tester must be affiliated with a company qualified and where required licensed by the State of California, and must maintain a current Business Tax Registration with the City of Los Angeles. If the Certified Tester leaves a company prior to the Certificate of fitness expiration date, his/her Certificate of Fitness becomes invalid and the status of the Tester becomes "inactive" until he/she starts a new business or becomes affiliated with a new business that holds a valid and current Business Tax Registration. Certified Testers are allowed to test only the equipment listed on their certification identification card. They are required to have the card in their possession at all times during any testing and must display it if requested.

Chief's Regulation No. 4 Program

Program Overview

Certificate of Fitness Identification Card.

The Fire Department issues an identification card to each qualified applicant upon successful completion of the examination process.

The Certificate of Fitness Identification Card shall be carried whenever the Certified Tester is performing any Chief's Regulation No. 4 testing and shall be produced on demand by any person for whom testing is being performed, or by any member of the Fire Department or member of the Department of Building and Safety.

The Certificate of Fitness Identification Card provides the following information about the Certified Tester:

1. Name of Certified Tester
2. Business affiliation of Certified Tester
3. Specific system/equipment for which the Tester is certified
4. Approval signature of the Fire Marshal
5. Signature of Certified Tester.
6. Certified Tester. Certification Number
7. Expiration date of Certificate of Fitness
8. Address of business affiliation of Certified Tester
9. One-inch square, color passport-type photograph

The individual designated on the I.D card is the owner of the Certificate of Fitness, and the Certificate is only valid for; that individual. However, the Business affiliation/company of the Certified Tester shall be indicated on the Certificate Identification Card.

The Certificate of Fitness is valid for a period of three years and will expire or can be renewed for an additional three year period per system.

Certificate of Fitness Suspension or Revocation

Section 105.5 of the Los Angeles City Fire Code prescribes what action the Fire Department may pursue when any person violates any rule or regulation adopted by the Board of Fire Commissioners.

The law grants the Chief the power to revoke, suspend, or deny the granting of any Certificate of Fitness for any of the following reasons:

1. Violation of any provision of the Los Angeles City Fire Code or any rule or regulation as adopted
EXAMPLE: Certified Tester alleges to a building owner that they are certified to test equipment not listed on their card. Or tests a system for which they are not certified.
2. Violation of any of the terms or conditions of the Certificate of Fitness.
EXAMPLE: Certified Tester is not onsite for the duration of a Chief's Regulation No. 4 test but submitted a signed F-340R Fire Protection performance report, which was signed and submitted by the Certified Tester.

Chief's Regulation No. 4 Program

Program Overview

Certificate of Fitness Suspension or Revocation (continued)

3. **EXAMPLE:** Changing the condition of fire protection equipment or systems in such a manner as to create a greater risk of fire or less protection than was present prior to the testing of such equipment or system.

EXAMPLE: Certified Tester fails to restore equipment to its normal operating condition after test, or certifies equipment that was not tested.

4. Upon a finding by the Chief of any deceptive practice constituting a fraud upon the public.

EXAMPLE: Certified Tester lists equipment defective when in fact it is not.

5. Upon a finding by the Chief of evidence of inability, lack of necessary expertise or willful or negligent failure to properly and safely perform the duties for which a Certificate of Fitness is granted.

EXAMPLE: Certified Tester attempts a test on a complex system for which he has inadequate background and knowledge.

6. Violation of applicable law.

EXAMPLE: Certified Tester makes repairs on equipment without proper permits, or is not licensed to perform such work.

General Qualifications

The Certified Tester shall have a working knowledge of all Chief's Regulation No. 4 policies and procedures and shall have the proper tools, equipment and competent personnel onsite to perform all required test procedures for the fire protection equipment being tested. All tests shall be performed in accordance with an approved "System Description; and "Sequence of Operation" (where required).

The Certified Tester must perform all test procedures required by Chief's Regulation No. 4 policies and procedures and the F-340R Fire Protection Equipment Performance Report and shall not add any information to the system specific F-340R Report or add unapproved testing requirements or procedures to the F-340R General Use Report. (See the appendix for F340R instructions).

All assistants shall be verified by the Certified Tester as competent and shall be required to perform in a competent manner and possess a working knowledge of all testing criteria. **The Certified Tester must remain on-site for the duration of entire test and personally supervise all assistants and attest to the accuracy of all test results.**

Chief's Regulation No. 4 Program

Program Overview

Certified Tester Responsibilities

As part of the Los Angeles City Fire Department Chief's Regulation No. 4 Testing program, The Certified Tester has the sole responsibility for accurate communication and notification to the Fire Department regardless of the size of the company for whom the Certified Tester works, or how the company has assigned staff to assist the Certified Tester.

Certified Testers are responsible for complying with all Chief's Regulation No. 4 policies and procedures, and shall ensure all company staff such as company owners, sales personnel, schedulers, dispatchers, testing assistance etc. have the necessary knowledge and/or documentation to assist Reg.4 Testers with compliance with Reg. 4 policies and procedures.

Chief's Regulation No.4 Test - Fire Department Witness

The Certified Tester is permitted to conduct Chief's Regulation No. 4 testing without the Fire Department on-site to witness the test. However, the Fire Department may witness any portion or any Chief's entire Chief's Regulation No. 4 test. An LAFD Fire Inspector or fire station member may visit the test site with or without prior notification to the Tester to determine that the test is being conducted properly, or because extra procedures may be required, or unusual conditions exist, or for training purposes.

In all cases, the Certified Tester is required to notify the Fire Station or the Fire Prevention Unit as well as the Chief's Regulation No. 4 Unit at least two full (2) working days prior to any testing. **Holidays and weekends are not working days for LAFD, therefore the actual time frames is 4 days.**

NOTE: The day of notification and the day of the test are not counted as part of the 2 day notification. Occasionally the two day minimum notice is not possible, in such cases the Chief's Regulation No. 4 unit shall be contacted for approval.

Required Notifications:

All Chief's Regulation No. 4 Certified Testers shall ensure all required notifications are made before and after each test is conducted as follows:

Prior to Testing:

Two Full Working Days Notice (not including the day of notification or the day of the test)

Prior to performing any Chief's Regulation No. 4 initial Test or Re-test the Certified Tester shall notify:

1. Fire Prevention Unit (staffed by Fire Inspectors) or local fire station (staffed by Fire Fighters)
2. Chief's Regulation No. 4 Unit

NOTE: Any notification less than the 2 full working day requirement is subject to disapproval and the test will not be accepted as valid. Depending on the situation notification in less than two full working days may be permitted with prior approval from the Chief's Regulation No. 4 Unit. Where more than one Tester is hired (for one location) or contracted by another Reg. 4 Tester to perform different type of tests, **each tester is responsible for their own notification.**

Chief's Regulation No. 4 Program

Program Overview

Required Notifications: (continued)

Day of the Test

1. LAFD Metro Fire Communications Dispatch
2. Occupants of the Building (signage is highly recommended)
3. Supervising Station Monitoring Company

Twenty Four Hours Notice (System out of Service / Life threatening/Inoperative Equipment)

If a Certified Tester suspects such a problem, immediate contact to the Fire Department shall be made in the applicable following order as follows:

1. Fire Prevention Unit responsible for fire inspection compliance and record retention
Monday through Friday 7:00am to 5:30pm
2. Local Fire Station responsible for fire inspection compliance and record retention
Seven days a week 7:00am to 5:30pm
3. The Chief's Regulation Number 4 Unit at (213) 978-3596
Metro Fire Communications (LAFD Fire Dispatch) -After normal working hours and or when unable to contact any of the above. The Tester can ask to speak to the Fire Department Floor Captain.

NOTE Certified Testers shall speak directly to a fire department representative. Do not simply leave a voice message. : The certified Tester shall personally make all notifications or ensure all proper notifications are performed.

Chief's Regulation No. 4 Program

Program Overview

Fire Station and Fire Prevention Inspection Responsibilities

It is imperative to contact the correct Fire Department entity prior to testing to:

- Verify fire department inspection and record keeping responsibility
- Notify the proper fire station or FPB Unit
- Ensure the Performance Report will be delivered to the correct fire department location for processing and follow-up as needed.

The following list shows the breakdown of fire inspection responsibilities for the local fire station and fire prevention inspection units.

Fire Station Inspection Responsibilities

The Los Angeles Fire Department Fire Stations are usually responsible for fire code compliance and record retention for the following occupancy types:

Smaller, less complex buildings:

- **Apartment Buildings**
 - 5 stories/levels or less above the ground
- **Industrial Warehouses, Commercial Office Buildings**
 - Less than 40,000 square feet or
 - Less than 4 stories in height (above ground level)
- **Small Restaurants** (Public Assemblages)
 - with an occupancy load of 99 or less
- **Small schools & churches**
 - with an occupant load of less than 750 people but does not have a school or daycare on the same property

A list of Fire Station addresses and locations are available in this appendix of this manual.

Fire Prevention Bureau Inspection Responsibilities (FPB Units)

The Los Angeles Fire Department Bureau of Fire Prevention and Public Safety are responsible for fire code compliance and record keeping for the following types of occupancies.

Note: as a general rule each unit is identified by the type of occupancy for which they inspect.

HIGH-RISE UNIT

- Buildings greater than 75 feet in height above the fire department access

Note: Does not include buildings use as a hospitals

Chief's Regulation No. 4 Program

Program Overview

Fire Prevention Bureau Inspection Responsibilities (FPB Units continued)

INDUSTRIAL/COMMERCIAL UNITS

- Large commercial offices or warehouses that are:
 - 4 or more stories/levels in height (above the ground)
 - 40,000 square feet or more in size).

Unit Locations:

- **Valley Industrial Unit**
 - Occupancies located in **San Fernando Valley**
- **Central Industrial Unit**
 - Occupancies located in **Los Angeles Metropolitan Area,**
- **West Industrial Unit**
 - Occupancies located in **West Los Angeles and Westchester Areas**
- **Harbor Industrial Unit**
 - Occupancies located in **Harbor Area**

CENTRAL AND WEST PUBLIC ASSEMBLAGE UNIT *(Located in Downtown Los Angeles main office)*

- Occupancies located in Central, West and Harbor areas
 - **Hotels, Apartment Houses/ Residential Buildings** Six stories or more but are not high-rise buildings
 - **Restaurants** with an occupant load of 100 people or more
 - **Theaters**
 - **Stadiums**
 - **Libraries** with an occupant load of 100 people or more

INSTITUTIONS UNIT *(Located in Downtown Los Angeles main office)*

Occupancies located in Central, West and Harbor areas

- **Hospitals,**
- **Convalescent Homes**
- **Jails**
- **24 Hour Rehabilitation Facilities**
- **Daycares with more than 6 children**
- **24 hour Mental Health Facilities**
- **Group homes with more than 6 people**

Chief's Regulation No. 4 Program

Program Overview

Fire Prevention Bureau Inspection Responsibilities (FPB Units continued)

SCHOOLS AND CHURCHES UNIT *(Located in Downtown Los Angeles main office)*

Occupancies located in Central, West and Harbor areas

- **Schools**
 - Kindergarten (K) through the twelfth grade (Elementary, Middle and High School)
- **Churches**
 - **Churches** with an occupant load of 750 or more
 - Churches with a school or daycare on the same property

FILM UNIT *(Located in Downtown Los Angeles main office)*

- **Film Studio Lots** and all occupancies on the lot

METRO RAIL UNIT

- **Rail Stations** and facilities on the premises

LEGAL LIAISON UNIT

- All occupancies with outstanding non compliance issues.

Chief's Regulation No. 4 Program

Program Overview

Fire Prevention Bureau Inspection Responsibilities (FPB Units continued)

VALLEY PUBLIC SAFETY UNIT (Located in the Valley Office)

Responsible for the following types of occupancies located in the San Fernando Valley

Public Assemblage Occupancies

- **Hotels, Apartment Houses/ Residential Buildings** Six stories or more but are not high-rise buildings
- **Restaurants** with an occupant load of 100 people or more
- **Theaters**
- **Stadiums**
- **Libraries** with an occupant load of 100 people or more

Institutional Occupancies

- **Hospitals,**
- **Convalescent Homes**
- **Jails**
- **24 Hour Rehabilitation Facilities**
- **Daycares with more than 6 children**
- **24 hour Mental Health Facilities**
- **Group homes with more than 6 people**

Schools and Churches

- **Schools**
 - Kindergarten (K) through the twelfth grade (Elementary, Middle and High School)
- **Churches**
 - Churches with an occupant load of 750 or more
 - All Churches with a school or daycare on the same property

Note: Multiple building on one property with separate addresses may be inspected by the local fire station personnel and FPB personnel



Chief's Regulation No. 4 Program Certified Tester Code of Conduct

Certified Tester Code of Conduct

All Chief Regulation Certified Testers shall commit themselves to a thorough understanding of this material and conduct a periodic review to maintain a working knowledge of its contents.

Individuals with a Certificate of Fitness to test fire protection systems and equipment are required to maintain certain standards of conduct to ensure that all aspects of the Chief's Regulation No. 4 (Reg. 4) Program are conducted in an efficient, fair, and impartial manner. Such standards of behavior ensure that the Certified Tester will act with integrity and ethics that maintain the public trust.

It is the responsibility of each individual Certified Tester to observe the letter and spirit of the Chief's Regulation No. 4 "Code of Conduct" in the performance of their duties. Certified Testers are required to become familiar with all Reg. 4 policies and procedures and comply with this code of conduct. It is expected that you will do everything you can to apply these principles to your decision-making.

While this code of conduct specifies a number of policies and procedures that govern professional behavior, you are also expected to familiarize yourself with the other documents that support integrity, ethics, respect, and legal behavior that govern your scope of practice.

- Chief's Regulation No.4 Program Manual
- Chief's Regulation No.4 Testing Procedures
- L.A.M.C. 57.117.1 of the City of Los Angeles Fire Code - Certificates of Fitness
- L.A.M.C. 57.105.5 of the City of Los Angeles Fire Code - Revocation, suspension or denial of permits, general approvals and certificates of fitness.
- All documents on the Chief's Regulation No. 4 Webpage

Violations of the Code of Conduct will be addressed in accordance with the Chief's Regulation No. 4 disciplinary process. Enforcement and implementation of the disciplinary process addresses personal and professional accountability and the reinforcement of Chief's Regulation No. 4 policies and procedures. It is expected that in the course of their work every Certified Tester will exercise self-discipline deserving of the respect of the citizens of Los Angeles, fellow Certified Testers and the members of the Los Angeles Fire Department. Should there be any question or need for additional information you are urged to direct your inquiry to the Chief's Regulation No. 4 Unit.

Certified Tester Code of Conduct

All Certified Testers Shall:

- a) Exert their greatest effort to perform to the best of their ability under all circumstances. Negligence, inefficiency or indifference of Testers in the performance of any Chief's Regulation No. 4 requirements is sufficient cause for disciplinary action.
- b) Exercise precautionary measures and good judgment to avoid injury to themselves and others while on the jobsite.
- c) Be thoroughly familiar with all equipment they may be required to use, in the full performance of their testing, and related work.
- d) Be governed by the ordinary and reasonable rules of behavior observed by law abiding and self-respecting citizens, and no Certified Tester shall commit any act tending to bring discredit upon the Fire Department or its members.
- e) Accord proper respect and courtesy to Fire Department personnel, the public and other Certified Testers.
- f) Provide all necessary information and instruction to anyone assisting them with required Chief's Regulation No. 4 requirements, responsibilities and/ or procedures.
- g) Posses a valid Chief's Regulation No. 4 Certificate for the system/equipment he/she is testing at all times while performing Chief's Regulation No. 4 testing.
- h) Ensure all personnel assisting with Chief's Regulation No. 4 testing, have a thorough working knowledge of the proper testing methods and performance criteria, and not sign any performance report unless the Certified Tester was onsite to supervise the test.
- i) Not perform any test required by any other agency or regulation and present it as a required Chief's Regulation No. 4 test.
- j) Submit all F-340R reports to the Fire Department in the required time frame after performing any Reg. 4 test, regardless of financial issues with any building representative, subcontractor, or /conflict with his/her company.
- k) Test and report the findings to the Fire Department and not represent themselves as a fire code or building code authority by initiating an order to repair upgrade, or install any fire protection system or equipment.

Certified Tester Code of Conduct

All Certified Testers Shall:

- l) Identify themselves as Certified Testers and not Reg. 4 Inspectors. Nor represent themselves as members of the Los Angeles Fire Department verbally, or by the use of the Los Angeles Fire Department logo on any personal documents, webpage, business card or stationery.
- m) Describe Reg. 4 testing activities as a "Performance "Test" or "REG.4 Test ", and not a Reg. 4 inspection.
- n) Make truthful and accurate entries on all F-340R and F-340RT reports, and shall not make misleading entries or statements nor add additional information not required by the Chief's Regulation No. 4 program nor add additional information in Section III Findings of the F-340R Performance Reports that is not specifically referenced in Section IV" Testing Procedures" nor add to or change the content of any item referenced
- o) Not indulge in obscene or uncivil language; altercations or conduct, which might cause adverse public reaction or injury to any person while conducting business as a Chief's Regulation No.4 Certified Tester.
- p) Carry their Certificate of Fitness identification card at all times when conducting business as a LAFD Chief Regulation No. 4 Tester.
- q) Not lend, sell, give away, nor appropriate any public property, nor pilfer or be guilty of theft.
- r) Submit all test results on current approved LAFD Chief's Regulation No. 4 forms
- s) Not perform any Chief's Regulation No. 4 test nor submit any Reg. 4 reports at any time his/her Certificate of Fitness is expired, or revoked.
- t) Keep separate any results or tests required by other agencies or authorities having jurisdiction (AHJ)
- u) Perform a minimum of one Chief's Regulation No. 4 Field Observation Test on at least one type of system/equipment category for which the tester is certified prior to applying for renewal of a Reg. 4 Certificate of Fitness.
- v) Remain up to date on current codes and standards required to test and certify the performance of fire protection systems and equipment and be familiar with the approved codes, standards and requirements utilized for the installation and performance of older systems.

Certified Tester Code of Conduct

All Certified Testers Shall:

- w) Adhere to all restrictions placed on him/her by the Reg. 4 Unit because of; improvement needed in the areas of; improper notifications, testing, or report submittal.
- x) Be Familiar with and adhere to all policies and procedures of the Chief's Regulation No. 4 Program.
- y) Contact the Chief's Regulation No. 4 Unit at the earliest moment they are aware of a Reg. 4 Test cancellation, or schedule change in excess of 15 minutes.



Chief's Regulation No. 4 Program Certificate of Fitness Application and Examination Process

Chief's Regulation No. 4 Certificate of Fitness Application and Examination Process

Application Process

Applications may be obtained from Chief's Regulation No. 4 Unit, 200 North Main Street, Room 1700, (City Hall East) Los Angeles, CA 90012 or via website: www.lafd.org/prevention/reg4.html. Application must be on form F-322-R4. (Listed as R4002) Applications shall be filed in person at the Chief's Regulation No. 4 Unit of the Bureau of Fire Prevention and Public Safety. **Only one application per system is accepted at a time (except when two systems are closely related).**

Applications must be filled out completely, signed and dated by the applicant. All applicants must go to the Chief's Regulation No. 4 Unit to register. After he/ she is given a registration number they are sent to the accounting office for payment and processing. The accounting office address is:

**Los Angeles City Fire Department
200 North Main Street, Room 1620, (City Hall East)
Los Angeles, CA 90012
Attention: Accounting Services**

Each applicant shall submit a completed application and pay the current fee, for each category along with a written resume. The fee is periodically adjusted by the Board of Fire Commissioners in accordance with Section 57.114.1.1 of the Los Angeles Fire Code.

NOTE: Applications are non transferrable and non refundable after the applicant starts the examination process.

Minimum requirements

Qualified applicants for a Certificate of Fitness to perform Chief's Regulation No. 4 testing shall meet the following requirements:

1. Be affiliated with a valid company that has a valid business license with the City of Los Angeles,
2. A valid State Contractor's License or a license issued by the California State Fire Marshal as per Section 13196.5 of the Health and Safety Code.
3. Possess a valid California Driver's License.
4. Applicants must have at least two years full-time job-related experience as an installer journey person, maintenance or repairperson, or related experience at a company, firm, or business that performs such services. This experience requirement may be reduced at the discretion of the Chief for basic fire protection equipment, e.g., fire escape assemblies, or emergency unit lighting (battery back-up).

Chief's Regulation No. 4 Certificate of Fitness Application and Examination Process

Minimum requirements (continued)

NOTE: Educational courses in fire protection engineering at a recognized college, university, NFPA seminar, or training held by industry professional about fire protection equipment, and other such training that provides solid technical background for understanding how to conduct tests of fire protection equipment, may be substituted for up to one year of the required experience. Proof in the form of course completion certificate(s) or degree from a recognized college, university, or trade school or letter of recommendation shall be required for submission at the time of application.

5. Provide a resume with at listing a minimum of two (2) years experience, training, working knowledge and competency with the materials, tools, equipment, standards, techniques, formulas, and recognized good maintenance practices pertaining to the fire protection equipment and systems for which they are applying. The resume shall include at least two references from a person knowledgeable in the fire protection field.

Examination Process (All written tests require a passing score of 80%)

Note: At the discretion of the Reg.4 Unit the General Program written test and the System Specific written test may be administered at the same time. The candidate will be informed of this at the time of scheduling.

Applicants must successfully complete the following four steps of the examination process before receiving a Certificate of Fitness to perform Chief's Regulation No. 4 testing.

1. **Reg. 4 General Program Written Examination** based on general Reg. 4: policies, procedures and Certified Tester duties and responsibilities.

After a valid application is delivered to the Chief's Regulation No. 4 Unit, the General Program test/examination will be administered. The written examination is the first step toward obtaining a Certificate of Fitness. The test is based on written material available from the Chief's Regulation No. 4 Webpage.

The written examination may include questions on knowledge of procedures, policies, and practices related to Chief's Regulation No. 4, definitions and testing intervals, Fire Department inspection responsibilities and notification requirements, general test procedures, system descriptions, repair requirements, understanding the Fire Department "Notice to Test Fire Protection Equipment Forms" and Forms; F-340R Fire Protection Equipment Report, F340 RT Fire Protection Equipment Re-test Report and F-340NT Unable to Test Report, report instructions, the requirements and procedures for obtaining a Certificate of Fitness, suspension and revocation of certification recertification, and other relevant knowledge and abilities.

Upon notification of passing the General Program written examination, the applicant must schedule a date for the system specific written (if not taken with the General Program test) and the oral exam and interview. Contact Inspector Bolden at darryll.bolden@lacity.org

Chief's Regulation No. 4 Certificate of Fitness Application and Examination Process

Examination Process (Continued)

2. System Specific Written Exam/Oral Interview and Exam

(a) System Specific Written Exam The applicant will take a multiple choice exam on the system/equipment for which he/she applied, upon successful completion the applicant will go directly into the oral exam/interview. The applicant will be required to have knowledge in the areas indicated in "Areas of Study for Written, Oral, and Field Test Requirements guide.", NFPA Standards, Manufacture Specifications Los Angeles City Ordinances (as they pertain to fire protection systems and equipment), and Reg.4 Testing Procedures

NOTE: The Applicant must achieve a passing score of 80 percent on the General Written and System specific examination to proceed with the Certificate of Fitness testing process.

(b) The Oral Interview and Exam: Detailed comprehensive exam on overall knowledge Reg.4 program policies and procedures and specific system/equipment.

The Chief's Regulation No. 4(Reg. 4) oral interview/exam is designed to give the applicant the opportunity to demonstrate his/her working knowledge of fire protection systems and equipment and the testing parameters of the Los Angeles Fire Department's Chief's Regulation No. 4 Program.

The criteria for becoming a successful Chief's Regulation No. 4 Tester is the ability to test fire protection systems and equipment in accordance with applicable Reg. 4 policies and procedures without Fire Department supervision, and maintaining a good working knowledge of the LAFD Fire Department's fire prevention program as it pertains to Fire Department inspection responsibility, enforcement and record retention for each type of building/occupancy.

The applicant is required to discuss his experience in the field of fire protection and answer questions to demonstrate a good working knowledge of proper testing methods/procedures and industry standards that govern the installation and testing of fire protection systems and equipment being tested, and have access all the necessary tools, equipment, and qualified personnel to perform the test.

The applicant shall also have a good working knowledge of all LAFD Reg. 4 policies and procedures.

NOTE: The Applicant must report to the Chief's Regulation No. 4 Unit a few minutes before the scheduled interview time. The applicant should bring two "passport-type" one-inch square color photographs (not Polaroid type); one will be placed in the applicant's file and the other affixed to the Certificate of Fitness identification card upon successful completion of the examination process

After successful completion of the oral exam, the applicant must schedule a date for a field performance test. In the same manner as the system specific written and oral exam and interview

Chief's Regulation No. 4 Certificate of Fitness Application and Examination Process

Examination Process (Continued)

3. Field Test Proficiency Examination: Applicant is evaluated on his/her ability to perform all required testing procedures on the type of system applied.

The Chief's Regulation No. 4 (Reg. 4) certification field test is designed to give the applicant the opportunity to demonstrate his/her proficiency in testing fire protection equipment within the testing parameters of the Los Angeles Fire Department Chief's Regulation No. 4 Program.

The criteria for becoming a successful Chief's Regulation No. 4 Tester is the ability to test fire protection systems and equipment in accordance with applicable policies and procedures without Fire Department supervision, and to maintain a good working knowledge of the Fire Department's fire prevention program as it pertains to building inspection responsibility, enforcement and record retention for each building/occupancy.

A full system test is not required during the Reg. 4 Certification Field Test; however the applicant is required to demonstrate proper testing methods and procedures in a manner that demonstrates his/her ability to test the entire system in a methodical and well organized manner that meets all Reg. 4 testing criteria. The applicant is required to have all the necessary tools and equipment to perform all aspects of the test. All assistants must have sufficient knowledge and proficiency to assist in the testing process safely and efficiently.

NOTE: The applicant is required to select the building for the field test in accordance with the minimum requirements for Reg. 4 Field Testing found in the appendix of this manual.

More than one test may be required to suitably demonstrate proficiency. Proposed test sites and times shall be reviewed by the Chief's Regulation No. 4 Unit.

No fee is charged during regular inspection hours. For this purpose, regular inspection hours are 7:00 a.m. to 5:30 p.m., Tuesday through Friday.

At times other than regular inspection hours, an "Off Hour" Emergency Inspection fee will be charged as follows; Four Hour Minimum at the current one hour minimum fee plus the one hour minimum fee per hour or any portion thereof. An "Off Hour Inspection Request Form" can be obtained from the Chief's Regulation No. 4 webpage @ <http://lafd.org/prevention/reg4.html> under "Application Forms"

4. Evaluation of Applicant's Field Test Documentation: The applicant shall submit the test results of the field test on the correct F-340R Fire Protection Equipment Performance Report and 340RT Re-test Report forms. Reports shall be submitted in the proper email report submittal method and format for initial test and re-test reports.

Unsuccessful Completion of the Certification Process

An applicant who does not pass any one of the four steps of the examination process has failed the certification process. Applicants must wait at least 30 days but, no more than 90 days to reapply. In no event shall the examination be given to the same applicant more than twice in any one-year period.

Chief's Regulation No. 4 Certificate of Fitness Application and Examination Process

Examination Process (Continued)

Whenever an applicant fails an examination and applies for a second examination within 90 days of such failure, the fee for the second examination is *50 percent* of the initial application fee. After 90 days full fee is required.

Upon successful completion of all four phases of the examination process the applicant will receive a "R4" Certificate of Fitness Identification Number and Identification Card which is valid for 3 years. If additional systems are applied for and passed, the additional systems will be aligned with the month and year of the original certification expiration date.

A Certified Tester may add additional categories of equipment and systems to their certificate by submitting an application and full fee. However, a specific written and oral exam/Interview, Field Proficiency Test and Document Review on the new system is required.

Certificate of Fitness Renewal

Prior to renewing a Reg. 4 Certificate of Fitness the Certified Tester is required to have Field Test Observation conducted by a Reg. 4 Inspector. The Certified Tester must be in good standing at the time of renewal and be able to demonstrate that he/she is still competent all Reg. 4 policies and procedures.

In some cases The Certified Test may be required to pass a written examination.

All Certified Testers are responsible for renewing their Certificate of Fitness in a timely manner. As a rule of thumb the tester should contact the Regulation No. 4 Unit a minimum of 30 days prior to expiration to ensure a date is available. A courtesy "Renewal Letter" is usually sent to each Tester prior to the Certificate of Fitness expiration date, however it is the responsibility of the Certified Tester's to schedule the Renewal "Field Observation prior to submitting a renewal application whether a courtesy letter was received or not .

"Renewal Fee" Variations and Requirements

The Certificate of Fitness becomes invalid when the Certificate of Fitness expires. The status of the Certified Testers becomes "invalid" and no testing or report submittal by the inactive Certified Tester is allowed and is invalid. The Tester is allowed to renew the Certificate of fitness as follows:

- Renewal prior to Certificate of Fitness expiration date. -50% of the current fee. Field Observation and renewal application required
- Renewal after 1 to 3 months after Certificate of Fitness expiration date – Full fee, Field Observation and renewal application required.
- Renewal after 4 to 6 months Certificate after Fitness expiration – Full fee, oral interview and renewal application required.
- Renewal not allowed after six months after Expiration date — Full fee and Initial application process required.

Chief's Regulation No. 4 Certificate of Fitness Application and Examination Process

Change of Notification Address/ or Company Affiliation

Each person holding a certificate of fitness shall notify the Chief's Regulation No. 4 Unit in writing of any change of business, residential and/or notification information within 10 days after such change. Failure on the part of the Certified Tester to provide such notification shall constitute grounds for suspension of non witnessed testing privileges and or revocation of the Certificate of Fitness.

Certified Tester Change of Status:

- When a Certified Tester leaves a company his/her Certificate of fitness becomes "inactive" and no testing or report submittal is permitted until the Tester reestablishes a company affiliation and submits an application for an Add/Change of Business Affiliation
- When a Tester wishes to add an additional company affiliation an application for an Add/Change of Business Affiliation is required along with the current fee. The Tester will be issued an identification card for each company affiliation.

NOTE: The Certificate of Fitness is the property of the individual Certificate of fitness holder and is nontransferable.

Reinstatement Prior to Certificate of Fitness Expiration Date – Change of business application and current fee.

To regain "active" status as a Certified Tester, a new application, two (2) one-inch by one-inch passport type photos must be submitted. The evaluation to reinstate the Certificate will be determined on an individual basis by the Chief's Regulation No. 4 Unit. Factors to be evaluated will be knowledge of current Chief's Regulation No. 4 program and procedures, and past performance as evidenced in the Certified Tester's file.



Chief's Regulation No. 4 Program Manual Appendix

1. Written, Oral, & Field Test, Areas of Study & Field Test, Building Selection Criteria
2. Testing Notification and Report Guidelines
3. Fire Protection Systems and Equipment & Required Testing Intervals
4. Chief's Regulation No. 4 Testing Procedures -2014 Edition



**Los Angeles Fire Department
Chief's Regulation No. 4 Program
Areas of Study
For
Written, Oral & Field Test Requirements**

The Chief's Regulation No. 4 Unit administers the testing process for the Division 6 "Certificate of Fitness" for testing of fire protection systems and equipment. The testing process consists of the following:

Written Tests:

1. **Chief's Regulation No. 4 Program Test:** Tests applicants' knowledge of the Chief's Regulation No. 4 Program policies and procedures.

System Specific Test: Tests the applicant's knowledge of specific fire protection installation, testing and maintenance requirements as well as systems operating procedures and system concepts.

A passing score of 80% is required on both tests to advance to the Oral Interview and Exam. Study material and information for these tests are located in the Chief's Regulation No. 4 Program Manual and on Chief's Regulation No 4 webpage at: www.lafd.org/prevention/reg4.html

2. **Oral Interview and Exam:**

Applicants must demonstrate a good working knowledge and experience testing the fire protection system and equipment for which they are applying. Major study areas are outlined in Table 1 below

3. **Field Test:** The applicant will demonstrate his/her proficiency while performing testing procedures of a specific system and /or equipment and its components.

The applicant is responsible for obtaining the building/location to perform the Field Test. Applicant shall have all required equipment and qualified personnel needed to perform the test. Minimum requirements for acceptable buildings for testing are listed in Table 2 of this document.

The testing process is formulated to examine an applicants' ability to test a particular system, to determine their overall system knowledge, and to verify that they understand the individual components of a system and how they relate to the complete system.

The applicant is responsible for knowing the changes in resource information pertinent to the year of installation for each system. Table 1 below states only the "Areas of Study", it does not reflect the specific years for the reference.

Any of the system references that contain "definitions" are part of the required knowledge. Report writing requires the proper use of terms.

The Annexes for each of the references in Table 1 are used to provide a better understanding of the intent of the code; and will assist the applicant with a better understanding of concepts and theory. Some system specific questions are taken from the annexes of publications such as the NFPA.

Where testing in accordance with equipment manufacture recommendations is required, the applicant will be tested on those specific procedures (example: Won Door)

The information in the latest revision of this document supercedes all previous information

Table 1

Revision 01-10-2014

System	Reference	Areas of Study
Fire Alarms	<ul style="list-style-type: none"> -NFPA 72 -LAFD Fire Code Division 122 -CFC Title 24 Part 9- Chapter 9 -Chief's Regulation No. 4 Procedures 	<ul style="list-style-type: none"> -Primary and Secondary Power -Initiating Devices, Notification Appliances -Testing and Maintenance -Definitions -Emergency Control Functions -Circuits and Pathways -Fire Alarm Fundamentals -Building Communication -Firefighter Phones/ two-way Communication -Testing Procedures
Central Station Signaling Systems	<ul style="list-style-type: none"> -NFPA 72 -NFPA 72- Supervising Station Fire Alarm Systems -NFPA 72- Inspection, Testing, and Maintenance Chief's Regulation No. 4 Procedures 	<ul style="list-style-type: none"> -Primary and Secondary Power - Initiating Devices -Notification Appliances -Testing and Maintenance -Supervising Station Alarm Sys. -Proprietary Systems -Definitions -Fire Alarm Fundamentals -Testing Procedures
Emergency Power-Generator	<ul style="list-style-type: none"> -NFPA 110 -CBC Title 24 Part 2-Chapter 10 -LAFD Fire Code Division 118 -NFPA 70 -IB-P-BC 2002-19 Exit Illumination (available at LADBS.org) Chief's Regulation No. 4 Procedures 	<ul style="list-style-type: none"> -Definitions -Classification of Emergency Power Systems -Transfer Switch Equipment -Egress path Illumination -Egress Path Components -Testing Procedures
Emergency Power-Battery/Unit Lighting	<ul style="list-style-type: none"> -CBC Title 24 Part 2 Chapter 10 -LAFD Fire Code Division 118 -NFPA 111 -NFPA 70 -IB-P-BC 2002-19 Exit Illumination (available at LADBS.org) Chief's Regulation No. 4 Procedures 	<ul style="list-style-type: none"> -Means of Egress Identification -Where required -Illumination intensity/ Locations -Power Sources -Combination Egress Light/ Exit Signs -Emergency Lighting Circuits -Testing Procedures
Automatic Closing Fire Assemblies	<ul style="list-style-type: none"> -NFPA 80 -NFPA 80- Annex A-L -Won Door Manufacturer Recommendations -Chief's Regulation No. 4 Procedures 	<ul style="list-style-type: none"> -Care and Maintenance -Fire Shutters -Horizontal/ Vertical Fire Doors -Hardware requirements -Accordion/ Folding Fire Doors -Rolling Steel Fire Doors -Chute Doors -Testing Procedures -Self and Automatic Closing -Fabric Fire Safety Curtains

Table 1

System	Reference	Areas of Study
Automatic Elevator Emergency Operations	<ul style="list-style-type: none"> -CBC Title 24 Part 2- Chapter 30 -ASME A17.1- 1996 -ASME A17.1- 2004 -Cal. Code Reg., Title 8, Sec. 3041 -Chief's Regulation No. 4 Procedures 	<ul style="list-style-type: none"> -Emergency Signaling -Two way Communication -Safety Devices -Phase I Emergency Recall Operation -Phase II Emergency In-Car Operation -Testing Procedures
Automatic Sprinkler Systems	<ul style="list-style-type: none"> -NFPA 13 -CBC Title 24 Part 2- Chapter 9 -Dorothy Mae Ordinance -Central Recall Brochure -NFPA 25 2013 Ca. Edition -Consumer Product Safety (CPSC), Sprinkler Recall Brochure -Chief's Regulation No. 4 Procedures 	<ul style="list-style-type: none"> -System Components & Hardware -Sprinkler head temperature rating and types -Definitions -Sprinkler spacing -Pressure Reducing Valves -System Attachments -Wet, Dry, Pre-action, Deluge -Hose Connections -Recall Requirements -Testing Requirements
Class I Systems	<ul style="list-style-type: none"> -Title 19 Chapter 5 -LAFD Fire Code Division 138 -CBC Title 24 Part 2- Chapter 9 -NFPA 14 -NFPA 25, 2013 Ca. Edition -Chief's Regulation No. 4 Procedures 	<ul style="list-style-type: none"> -Fire Dept. Connections -Definitions -System Types -Flow Rates -Hydrostatic Testing -System Gauges -Pressure Regulating Devices -Testing Procedures
Class II Systems	<ul style="list-style-type: none"> -Title 19 Chapter 5 -NFPA 1962 -NFPA 14 -NFPA 25, 2013 Ca. Edition -Chief's Regulation No. 4 Procedures 	<ul style="list-style-type: none"> -Hose Stations -Fire Dept. Connections -Minimum and Maximum Pressures (different Years) -Pressure Regulator Devices -Testing Procedures -Fire Hose Care
Class III Systems	<ul style="list-style-type: none"> -Title 19 Chapter 5 -CBC Title 24 Part 2- Chapter 9 -NFPA 14 -NFPA 1962 -NFPA 25, 2013 Ca. Edition -Chief's Regulation No. 4 Procedures 	<ul style="list-style-type: none"> -Hose Stations -Fire Dept. Connections -Minimum/Maximum Flow Pressures (Different Years) -Pressure Regulator Devices -Testing Procedures Care of Hose
Combined Sprinkler/ Standpipe Systems	<ul style="list-style-type: none"> -Title 19 Chapter 5 -NFPA 13 -CBC Title 24 Part 2- Chapter 9 -NFPA 14 -NFPA 25, 2013 Ca. Edition -Chief's Regulation No. 4 Procedures 	<ul style="list-style-type: none"> -Fire Dept. Connections -Minimum and Maximum Pressures -Pressure Regulating Devices -Gauges -Piping components -Testing Procedures

Table 1

System	Reference	Areas of Study
Stationary Pumps for Fire Protection	-NFPA 20 -NFPA 25 - Chief's Regulation No. 4 Procedures	-Fire Dept. Connections -Minimum and Maximum Pressures and Flows -Piping components -Electric and Diesel Drivers -Pressure Regulator Devices -Testing Procedures -Controllers
Special Sprinkler Systems	NFPA 13, NFPA 25 2013, Ca Edition Chief's Regulation No. 4 Procedures	Pre-action -Deluge Systems -Dry Pipe Systems -Testing Procedures
Smoke Control	-CBC 2001-2013 Chapter 9 Sections-905/909 -Chief's Regulation No. 4 Procedures	-Pressure Differentials -Door Opening Force -System Components/Controls -Definitions Testing Procedures
Fire Escapes (Request CBC and UFC docs from the Reg. 4 Unit until further notice)	-2001 C BC Appendix Ch 34 Sec. 3407.4 Fire Escapes -2001 UFC Appendix 1-A Sec.2.4 -Chief's Regulation No. 4 Procedures	-Openings -Components -Balconies/stairs/railings -Testing Procedures
Smoke Proof Enclosures	-CBC Title 24 Part 2- Chapter 9 -NFPA 92A & 92B Chief's Regulation No. 4 Procedures	-Fundamentals -System Components -Smoke Control Systems & Applicability -Building Equipment & Controls -Testing Procedures
Mechanical Smoke Removal	-CBC Title 24 Part 2- Chapter 9 -NFPA 92A & 92B Chief's Regulation No. 4 Procedures	-Fundamentals -System Components -Smoke Control Systems & Applicability -Building Equipment & Controls -Testing Procedures
Stair Pressurization	-CBC Title 24 Part 2- Chapter 9 -NFPA 92A & 92B Chief's Regulation No. 4 Procedures	-Fundamentals -System Components -Smoke Control Systems & Applicability -Building Equipment & Controls -Testing Procedures
Gas Detection Systems	-LAFD Gas Detection Ordinance -By Specific Manufacture Requirements/ Recommendations	-Testing Procedures -Maintenance
Private Hydrants		Not applicable at this time

Field Test Building Minimum Requirements Per System
Fire Alarm- 7 story building with ancillary devices such as Dampers, A/C shut down, Stairwell Pressurization, Building Communication, Fireman's phones, Central Station Service, Fire Control Room, Elevator Recall, and Central Station, Remote Annunciator Panel
Supervisory Station Monitoring System- Multi-zone Panel (minimum 3 zones used), LAFD Division 4 Permit, Two Communication Systems, must monitor: Panel, Power, Alarm, Supervision, Trouble Conditions
Emergency Power; Generator- 7 story building with the following on E-Power: Corridor and Tenant Area Lighting, Stairwell Lighting, Exit Signs, Elevator Operations and Lighting, Fire Pump, Pressurized Stairshaft Fans, Fire Alarm Panel, Garage Area Lighting. Must Provide a single Line Diagram for the test
Stored Energy Lighting- 5 story building, Egress Lighting, Exit Signs. Must Provide a single Line Diagram for the test that shows primary and secondary circuitry
Pressurized Stair Shaft Systems- 7 story building, 2 Stair Shafts on System, Status Indicator in Fire Control Room, New High Rise Building (built after July 1974)
All Other Smoke Management Systems- New High Rise Building (built after July 1974)
Automatic Elevator (both witness only and contractor)- New High Rise Building (built after July 1974), Must have Phase I and Phase II, Minimum Group 3, Minimum of 3 Cars, Elevator Reset Keys
Automatic Closing Fire Assemblies- Must be able to provide a minimum of 3 assemblies of each type: Magnetic Hold Open, Fire Fly, "Won" Type, Vertical Sliding, Vertical Rolling, Horizontal Sliding (level and incline), Swinging, Rubbish Chute. This may take multiple buildings to accomplish.
Fire Escapes- 4 story building, 2 fire escape Assemblies, Must test weighted and Hydraulic types. This may take multiple buildings to accomplish.
Class I Standpipe- 5 story building, 2 Risers, Air Test for 30 minutes at 25 psi, Hydrostatic Test for 15 minutes at 150 psi
Class II Standpipe- 5 story building, 2- Inch and One Half Outlets on Roof, 6 Hose Stations
Class III Standpipe- 12 story building, 2 Risers Interconnected, 500 gpm Pump, Unsprinklered Building, 6 Hose Stations
Combined Standpipe- New High Rise Building (built after July 1974), 2 Risers Equipped with 2 1/2" Outlets with Adjustable PRV's and Sprinkler System, 750 gpm Pump, Street Use Permit if dumping into street
Automatic Sprinkler System- 5 story building, 2 Risers with Sectional Control Valves, OS&Y or PI, ITV, FDC with 2 Inlets. Tester will be unable to test Deluge or Dry Systems until they field test each one
Fire Pump- Minimum 2 Fire Pumps, Jockey Pump, 3 Test Headers, Previous Test Report that includes Pump Curve, Street Use Permit if dumping into street
Special Extinguishing Systems- Coming Soon
Private Hydrants- Coming Soon
Gas Detection Systems- Multi-story building, Certification from each Sensor Manufacture,

Chief's Regulation No. 4 Certification Process**Oral Interview and Exam**

Please read all the information below carefully

The Chief's Regulation No. 4(Reg. 4) oral interview/exam is designed to give the applicant the opportunity to demonstrate his/her working knowledge of fire protection systems and equipment and the testing parameters of the Los Angeles Fire Department's Chief's Regulation No. 4 Program.

The criteria for becoming a successful Chief's Regulation No. 4 Tester is the ability to test fire protection systems and equipment in accordance with applicable Reg. 4 policies and procedures without Fire Department supervision, and maintaining a good working knowledge of the LAFD Fire Department's fire prevention program as it pertains to Fire Department inspection responsibility, enforcement and record retention for each type of building/occupancy.

The applicant is required to discuss his experience in the field of fire protection and answer questions to demonstrate a good working knowledge of proper testing methods/procedures and industry standards that govern the installation and testing of fire protection systems and equipment being tested, and have access all the necessary tools, equipment, and qualified personnel to perform the test.

The applicant shall also have a good working knowledge of all LAFD Reg. 4 policies and procedures.

In addition to proper testing procedures, the applicant will also be tested on:

- The name of the LAFD Fire Prevention Bureau(FPB) Units and FPB office locations
- Occupancy types as they pertain to Fire Department inspection units/fire stations
- Which occupancy types is the responsibility of Fire Prevention Units vs. Fire Stations (based on occupancy type and/or size)
- Proper notification procedures to the proper Fire Department entity (prior to testing and on the day of testing)
- Proper F-340R Report completion and distribution to the proper Fire Department entity
- Proper F-340RT Retest Report completion and distribution to the proper Fire Department entity

Chief's Regulation No. 4 Certification Process

Field Test

Read all the information below carefully

The Chief's Regulation No. 4 (Reg. 4) certification field test is designed to give the applicant the opportunity to demonstrate his/her proficiency in testing fire protection equipment within the testing parameters of the Los Angeles Fire Department Chief's Regulation No. 4 Program.

The criteria for becoming a successful Chief's Regulation No. 4 Tester is the ability to test fire protection systems and equipment in accordance with applicable policies and procedures without Fire Department supervision, and to maintain a good working knowledge of the Fire Department's fire prevention program as it pertains to building inspection responsibility, enforcement and record retention for each building/occupancy.

A full system test is not required during the Reg. 4 certification Field Test; however the applicant is required to demonstrate proper testing methods and procedures in a manner that demonstrates his/her ability to test the entire system in a methodical and well organized manner that meets all Reg. 4 testing criteria

In addition to proper testing procedures the applicant will be tested on:

- The name of the LAFD Fire Prevention Bureau(FPB) Units and FPB office locations
- Occupancy types as they pertain to fire department inspection units/fire stations
- Which occupancy types is the responsibility of the Fire Prevention Units vs. Fire Stations based on occupancy type and/or size
- Proper notification procedures, prior to and during testing to the proper Fire Department entity
- Proper 340R report completion and distribution to the proper Fire Department entity
- 340RT Retest report completion and distribution o the proper Fire Department entity

It is the applicant's responsibility to select and secure the proper building for the certification test and have all necessary equipment, qualified personnel, and F-340R reports onsite during the Field Test. Please review the document below to determine the proper type of building to select for the certification test.

Note: This field test does not count as an actual Reg.4 performance test, however all forms will be completed as the applicant would actually complete the forms as a Certified Tester.

Send the completed certification field test F-340R and F340RT reports **directly** to darryll.bolden@lacity.org (for field test certification only) in the format shown below for review and approval.

Please keep a copy of your report with you. You will be contacted via telephone to discuss the report. For verbal questions regarding testing Inspector Bolden can be contacted at 213 272-8549 (cell)

Reminder: Email notification of testing to the Reg. 4 and subsequent report submittal is required in the following format to [lafdfreg4@lacity.org](mailto:lafdreg4@lacity.org)

Email Testing Notification and F-340R Report Submittal format is shown below: (Sample only)

Testing Notification: 00/00/00 0600 Darryll Bolden R4XXX, 200 N Main St. 213 272-8549

F-340R Report Submittal: Report 00/00/00 0600 Darryll Bolden R4XXX, 200 N Main St. 213 272-8549



Los Angeles Fire Department Chief's Regulation No. 4 Fire Protection Equipment Testing Program

LAFD Testing Notification & Report Guidelines



Fire Alarm, F-340R 04-09-2013

LOS ANGELES FIRE DEPARTMENT FIRE PROTECTION EQUIPMENT PERFORMANCE REPORT

TOTAL HOURS
PAGE 1 of

TEST SITE INFORMATION

TEST SITE ADDRESS: (STREET)	(CITY) LOS ANGELES	(STATE) CA	(ZIP)	TEST SITE PHONE
OCCUPANCY TYPE:	NUMBER OF STORIES:	YEAR BUILT:	CONSTRUCTION TYPE: Drop-down menu	SQUARE FOOTAGE:

RESPONSIBLE PARTY

NAME (LAST, FIRST, MI)	TITLE:	FIRM OR D.B.A.
MAILING ADDRESS: (STREET)	(CITY)	(STATE) (ZIP)
		PHONE:

INITIAL TEST INFORMATION

INITIAL TEST DATE(S)	TESTING AGENCY AGENCY NAME	PHONE
ADDRESS OF TESTING AGENCY: (STREET)	(CITY)	(STATE) (ZIP)

CONTACT THE FIRE DEPARTMENT MEMBER (BELOW) PRIOR TO STARTING REPAIR

<input type="checkbox"/> FC/BC	TEST RESULTS <input type="checkbox"/> PASSED <input type="checkbox"/> FAILED
---------------------------------------	---

The Chief's Regulation No. 4 Unit was notified on _____ at lafdreg4@lacity.org

All sections below shall be found in the following pages of this report.

SECTIONS:

- I. BUILDING DESCRIPTION
- II. SYSTEM DESCRIPTION
- III. FINDINGS
- IV. TESTING PROCEDURES/ WORKSHEETS
- V. FIRE CODE/BUILDING CODE ISSUES (OPTIONAL)

I HEREBY CERTIFY THAT THE FIRE PROTECTION EQUIPMENT LISTED ABOVE HAS BEEN FULLY TESTED IN ACCORDANCE WITH THE CHIEF'S REGULATION NO. 4 OF THE LOS ANGELES FIRE CODE AND THAT THE RESULTS ARE ACCURATELY LISTED ABOVE AND THE EQUIPMENT IS FULLY OPERABLE EXCEPT AS NOTED.

TESTER'S NAME (Print) & CERTIFICATE #	EXPIRATION DATE	TESTER'S SIGNATURE	FIRE DEPARTMENT WITNESS (NAME IF APPLICABLE)
---------------------------------------	-----------------	--------------------	--

REPAIR AND RETEST: IF DEFECTS ARE FOUND IN EQUIPMENT TESTED, CORRECTION OF SUCH DEFECTS SHALL COMMENCE FORTHWITH AND SHALL BE COMPLETED AS SOON AS POSSIBLE, BUT IN EVERY CASE WITHIN 30 DAYS OF INITIAL TEST. THE F-340RT SHALL BE USED TO DOCUMENT THE RETEST OF DEFECTS FOUND IN SECTION III. A COPY OF SECTION III OF THIS REPORT SHALL BE ATTACHED TO THE F-340RT PRIOR TO SUBMITTING TO THE FIRE DEPARTMENT.

THIS SECTION TO BE FILLED OUT BY THE CERTIFIED TESTER

NOTIFICATION TO RESPONSIBLE FIRE STATION OR INSPECTION UNIT (MINIMUM 2 FULL WORKING DAYS PRIOR TO THE TEST)

RESPONSIBLE FIRE STATION OR INSPECTION UNIT

- ☐ FIRE STATION #: _____ NOTIFICATION MADE TO: (Print): _____
- ☐ FIRE PREVENTION UNIT: Drop-down menu NOTIFICATION MADE TO: (Print): _____
- DATE NOTIFIED: _____

THE ORIGINAL AND ONE COPY OF THIS REPORT SHALL BE SENT DIRECTLY TO THE RESPONSIBLE FIRE STATION OR FIRE PREVENTION UNIT AND ONE COPY SENT TO THE CHIEF'S REGULATION NO. 4 UNIT WITHIN 7 DAYS.

REPORT SUBMITTAL INFORMATION: I ☐ emailed or ☐ mailed (U.S. Mail) this report to the Fire Station/ Fire Prevention Unit shown above at the following address: _____ on _____.

FIRE DEPARTMENT OFFICIAL USE ONLY

I HAVE REVIEWED AND DISCUSSED THIS REPORT WITH: _____ ON: _____

Owner/Representative Signature: _____ (OWNER/OWNER'S REPRESENTATIVE) (DATE)

LAFD Member's Name (Print): _____ Member's Signature: _____

Fire Department Member's Work Assignment: _____ Telephone Number: _____

Fire/Life Safety Notice to correct defects issued ☐ No ☐ Yes Notice number: _____ Date of Notice: _____

Introduction

The city of Los Angeles is approximately 469 square miles with 102 fire stations and 21 separate Fire Prevention Bureau Inspection Units (FPB) located in one of seven regional offices in the Los Angeles area. At this time the Fire Department does not have one central location in which fire prevention records are stored. Each fire station and each fire prevention unit maintains inspection, testing and compliance records at each unit or fire station. Proper interaction between the Certified Tester and the Fire Department is vital in order to maintain a consistent and efficient LAFD Chief's Regulation No. 4 (REG. 4) testing program.

This guild is designed to assist the LAFD Certified Tester and/or his/her assistant(s) with proper testing notification report writing and report submittal to the proper LAFD Fire Station or FPB Unit that has the responsibility for fire inspections, life/safety compliance and record retention based on; occupancy type, size (in square feet) & number of stories (above ground). Notification of all upcoming fire equipment tests to the proper LAFD entity (i.e. fire Station or Fire Prevention Bureau Unit (FPB) is required at least two full working days prior to testing (actually four days). The day of notification and the day of the test do not count. Within 7 days after any test is complete an F-340R Fire Equipment Performance Report is required to be submitted to the proper LAFD entity with seven days

In many cases Certified Testers work for a fire protection company that employs various methods of operation which include; sales, service, dispatch, scheduling, report writing etc.

Regardless of the company set-up all individual Chief's Regulation No. 4 Certified Testers shall maintain a working knowledge of all Reg. 4 policies and procedures including proper notification, report writing, and report submittal and shall be personally responsible for the proper implementation of all Chief's Regulation No. 4 policies and procedures. Certified Tester are required to inform and train all persons or company personnel that assist him/her with implementing the policies and procedures that comprise the Chief's Regulation No. 4 Fire Protection Equipment Testing Program.

Note: Certified Testers and/or fire protection company personnel shall not call any Fire Department Unit or Fire Station to obtain information regarding inspection responsibilities unless the information can not obtained from this guide.

Table of Contents

1. Type of Occupancies
2. How to Distinguish Fire Prevention Bureau Occupancies from Fire Station Occupancies
3. Breakdown of Fire Prevention Unit and Fire Station Responsibilities
4. Building Construction Types
5. Fire Prevention Bureau Contact Information
6. Fire Station Contact Information
7. Notification and Report Submittal Email Format
8. F-340R Fire Protection Equipment Performance Form Instructions 04-25-2013
9. F-340RT Fire Protection Equipment Performance Retest Form Instructions Attached 04-04-2012 -
10. F-340RNT Fire Protection Equipment Performance Unable to Test Form 10-2-2011
11. Reg. 4 Newsletter Article “The weakest Link” 12- 2011

To view a specific F340R Fire Protection Performance Report Forms go to:
http://lafd.org/prevention/reg4/reg4_F340R.html

For Chief's Regulation No. 4 Purposes the Certified Tester only needs to know the Occupancy Group not the Division

Occupancies types High-rise, A, B, E, I, R, will determine inspection responsibilities:

High rise - (Greater than 75 Feet from Fire Department Access at Ground Level),

GROUP AND DIVISION	SECTION	DESCRIPTION OF OCCUPANCY
A-1	303.1.1	A building or portion of a building having an assembly room with an occupant load of 1,000 or more and a legitimate stage.
A-2		A building or portion of a building having an assembly room with an occupant load of less than 1,000 and a legitimate stage.
A-2.1		A building or portion of a building having an assembly room with an occupant load of 300 or more without a legitimate stage, including such buildings used for educational purposes and not classed as a Group E or Group B Occupancy.
A-3		Any building or portion of a building having an assembly room with an occupant load of less than 300 without a legitimate stage, including such buildings used for educational purposes and not classed as a Group E or Group B Occupancy.
A-4		Stadiums, reviewing stands and amusement park structures not included within other Group A Occupancies.
B	304.1	A building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts; eating and drinking establishments with an occupant load of less than 50.
E-1	305.1	Any building used for educational purposes through the 12th grade by 50 or more persons for more than 12 hours per week or four hours in any one day.
E-2		Any building used for educational purposes through the 12th grade by less than 50 persons for more than 12 hours per week or four hours in any one day.
E-3		Any building or portion thereof used for day-care purposes for more than six persons.
F-1	306.1	Moderate-hazard factory and industrial occupancies include factory and industrial uses not classified as Group F, Division 2 Occupancies.
F-2		Low-hazard factory and industrial occupancies include facilities producing noncombustible or nonexplosive materials that during finishing, packing or processing do not involve a significant fire hazard.
H-1	307.1	Occupancies with a quantity of material in the building in excess of those listed in Table 3-D that present a high explosion hazard as listed in Section 307.1.1.
H-2		Occupancies with a quantity of material in the building in excess of those listed in Table 3-D that present a moderate explosion hazard or a hazard from accelerated burning as listed in Section 307.1.1.
H-3		Occupancies with a quantity of material in the building in excess of those listed in Table 3-D that present a high fire or physical hazard as listed in Section 307.1.1.
H-4		Repair garages not classified as Group S, Division 3 Occupancies.
H-5		Aircraft repair hangars not classified as Group S, Division 5 Occupancies and heliports.
H-6		Semiconductor fabrication facilities and comparable research and development areas when the facilities in which hazardous production materials are used, and the aggregate quantity of material is in excess of those listed in Table 3-D or 3-E.
H-7	307.1	Occupancies having quantities of materials in excess of those listed in Table 3-E that are health hazards as listed in Section 307.1.1.
I-1.1	308.1	Nurseries for the full-time care of children under the age of six (each accommodating more than five children), hospitals, sanitariums, nursing homes with nonambulatory patients and similar buildings (each accommodating more than five patients).
I-1.2		Health-care centers for ambulatory patients receiving outpatient medical care which may render the patient incapable of unassisted self-preservation (each tenant space accommodating more than five such patients).
I-2		Nursing homes for ambulatory patients, homes for children six years of age or over (each accommodating more than five persons).
I-3		Mental hospitals, mental sanitariums, jails, prisons, reformatories and buildings where personal liberties of inmates are similarly restrained.
M	309.1	A building or structure, or a portion thereof, for the display and sale of merchandise, and involving stocks of goods, wares or merchandise, incidental to such purposes and accessible to the public.
R-1	310.1	Hotels and apartment houses, congregate residences (each accommodating more than 10 persons).
R-2.1		Residential care facilities for the elderly (each accommodating more than six nonambulatory clients).
R-2.2		Residential care facilities for the elderly (each accommodating more than six ambulatory clients).
R-2.1.1		Residential care facilities for the elderly (each accommodating six or less nonambulatory clients).
R-2.2.1		Residential care facilities for the elderly (each accommodating six or less ambulatory clients).
R-3	311.1	Dwellings, lodging houses, congregate residences (each accommodating 10 or fewer persons).
S-1		Moderate hazard storage occupancies including buildings or portions of buildings used for storage of combustible materials not classified as Group S, Division 2 or Group H Occupancies.
S-2		Low-hazard storage occupancies including buildings or portions of buildings used for storage of noncombustible materials.
S-3		Repair garages where work is limited to exchange of parts and maintenance not requiring open flame or welding, and parking garages not classified as Group S, Division 4 Occupancies.
S-4		Open parking garages.
S-5		Aircraft hangars and heliports.
U-1	312.1	Private garages, carports, sheds and agricultural buildings.
U-2		Fences over 6 feet (1829 mm) high, tanks and towers.

The occupancy types above applies to the "major use" within the building e.g. a High-rise office building with a restaurant on the 1st floor is a "High-rise B" even though it has a restaurant. A High-rise apartment building is a "High-rise "R"

How to Determine Whether an Address belongs to the Fire Prevention Bureau or Fire Station.

F.P.B. RESPONSIBILITY: The following occupancies or conditions will normally be inspected by members of the Fire Prevention Bureau. All other occupancies will be inspected by fire station personnel. Occupancy classification definitions are contained in the Manual of Operation, 11/1-30.00 and in the Fire Code, Section 57.02.02.

- A. **Group A Occupancies** with an occupant load of 100 or more persons.

The occupancy types above applies to the "major use" within the building e.g. a High-rise or

- B. **Group B Occupancies:**

1. Four stories or more in height.
2. 40,000 square feet or more total area of all floors.
3. Where a Division 4 Permit is required in accordance with Section 57.04.03 of the Fire Code.

EXCEPTION: Group A Occupancies with an occupant load of 99 or less.

- C. **All Group E Occupancies.**

- D. **All Group H Occupancies** except repair garages.

- E. **All Group I Occupancies**

- F. **Group R, Division 1 Occupancies** six stories or more in height (Not High-rise)

1. Group R, Occupancies housing more than six (6) persons (day care, small home for people with special needs).

FIRE STATION RESPONSIBILITY: The following occupancies or conditions will normally be inspected by fire station personnel. All other occupancies will be inspected by members of the Fire Prevention Bureau. Occupancy classification definition are contained in the Fire Code.

- A. **Group A Occupancies** with an occupant load of less than 100 persons.

Occupancies types High-rise, A, B, E, I, R, will determine inspection responsibilities:

- B. **Group B Occupancies** with less than four stories in height and less than 40,000 square feet total of all floors.

- C. **Group H Division 4 Occupancies** (Repair garages)

- D. **Group R Occupancies.**

1. Group R, Division 1 Occupancies less than six stories in height.
2. Group R, Division 3 Occupancies.
3. Group R, Occupancies housing 6 or fewer ambulatory persons, on the premises, not including employees or relatives.

MULTI-OCCUPANCY BUILDINGS: The inspection responsibility in multi-occupancy building for individual occupancies having separate street addresses may be divided between the Fire Prevention Bureau and fire station personnel.

**Los Angeles City Fire Department
Local Fire Station vs. Fire Prevention Unit
Inspection Responsibilities**

Occupancy Descriptions	Fire Station / FPB Unit	Phone	Fax
All High-Rise buildings All buildings 75 feet or taller (except hospitals)	High-Rise Unit	(213) 978-3600	(213) 978-3518
Large Industrial & Commercial Occupancies (Less than 75 feet in height) 4 or more stories in height OR More than 40,000 square	Central Industrial Unit L.A. Metropolitan Areas West Industrial Unit West L.A. & Westchester Areas Valley Industrial Unit San Fernando Valley Harbor Industrial Unit Harbor Areas	 (213) 978-3630 (818) 374-1110 (213) 473-7700 (310) 732-4580	 (213) 978-3519 (818) 778-4911 (213) 473-7702 (310) 732-4579
Places Of Assemblage: Restaurants with occupant load of 100 or more . Hotels, Apartments, Theatres Stadiums, & Other Residential Buildings, which are 6 stories or more but are <u>NOT</u> high-rise buildings. Stadiums & Arenas	Public Assemblage Unit Central, West LA & Harbor Areas Valley Public Safety Unit San Fernando Valley Areas	 (213) 978-3640 (818) 374-1110	 (213) 978-3611 (818) 778-4939
Hospitals, Jails, Convalescent Homes, 24 Hour Mental Health/Drug Habilitation, & Other Similar Institutional Occupancies.	Institution Unit Central, West LA & Harbor Areas Valley Public Safety Unit San Fernando Valley Areas	 (213) 978-3730 (818) 374-1110	 (213) 978-3612 (818) 778-4939
Schools K-12 Churches with occupancy loads of 750 or more or on the same property as a school	Schools & Churches Unit Central, West LA & Harbor Areas Valley Public Safety Unit San Fernando Valley	 (213) 978-3660 (818) 374-1110	 (213) 978-3612 (818) 778-4939
Smaller, Less Complex Buildings 3 Stories or Less/Less than 40,000 sq. ft. Apartments - 5 stories or less Repair Garages.	Local Fire Stations	You can find the local fire station for the address by going to http://zimas.lacity.org or http://www.lafd.org/fsloc.html	
Film Studios & Lots	Film Unit	(213) 978-3670	
Any Building Pending Legal Action	Legal Liaison Unit	(213) 978-3560	
LAFD 24 Hour Dispatch - Contact the day of the test - before and after testing	Metro Fire Communications	(213) 847-5360	

Construction Types - Definitions

TYPE I-A--Fire Resistive Non-combustible (Commonly found in high-rise buildings and Group I occupancies).

- 3 Hr. Exterior Walls*
- 3 Hr. Structural Frame
- 2 Hr. Floor/Ceiling Assembly
- 1 ½ Hr. Roof Protection

TYPE I-B--Fire Resistive Non-Combustible (Commonly found in mid-rise office & Group R buildings).

- 2 Hr. Exterior Walls*
- 2 Hr. Structural Frame
- 2 Hr. Ceiling/Floor Separation
- 1 Hr. Ceiling/Roof Assembly

TYPE II-A--Protected Non-Combustible (Commonly found in newer school buildings).

- 1 Hr. Exterior Walls
- 1 Hr. Structural Frame
- 1 Hr. Floor/Ceiling/Roof Protection

TYPE II-B--Unprotected Non-Combustible (Most common type of non-combustible construction used in commercial buildings).

Building constructed of non-combustible materials but these materials have no fire resistance.

TYPE III-A--Protected Combustible (Also known as "ordinary" construction with brick or block walls and a wooden roof or floor assembly which is 1 hour fire protected).

- 2 Hr. Exterior Walls*
- 1 Hr. Structural Frame
- 1 Hr. Floor/Ceiling/Roof Protection

TYPE III-B--Unprotected Combustible (Also known as "ordinary" construction; has brick or block walls with a wooden roof or floor assembly which is not protected against fire. These buildings are frequently found in "warehouse" districts of older cities.)

- 2 Hr. Exterior Walls*
- No fire resistance for structural frame, floors, ceilings, or roofs.

TYPE IV--Heavy Timber (also known as "mill" construction; to qualify all wooden members must have a minimum nominal dimension of 8 inches.)

- 2 Hr. Exterior Walls*
- 1 Hr. Structural Frame or Heavy Timber
- Heavy Timber Floor/Ceiling/Roof Assemblies

TYPE V-A--Protected Wood Frame (Commonly used in the construction of newer apartment buildings; there is no exposed wood visible.)

- 1 Hr. Exterior Walls
- 1 Hr. Structural Frame
- 1 Hr. Floor/Ceiling/Roof

TYPE V-B--Unprotected Wood Frame (Examples of Type V-N construction are single family homes and garages. They often have exposed wood so there is no fire resistance.)

- Note exceptions in the building code for fire resistance ratings of exterior walls and opening protection.



**Fire Code & Chief's Regulation No. 4 Compliance
Fire Prevention Bureau Office Locations & Units**

Directory

Metro/ Los Angeles FPB Office

200 No. Main Street Suite 1700, Los Angeles, CA, 90012

High Rise Unit -213-978-3600, 213-978-3518 (Fax)

lafdhr@lacity.org

Central Industrial Unit - 213-978-3630, 213-978-3519 (Fax)

lafdciu@lacity.org

Public Assemblage (PA) Unit - 213-978-3640, 213-978-3611 (Fax)

lafdpau@lacity.org

Schools & Churches /Instructions Unit -213-978-3660, 213-978-3612 (Fax)

lafdsci@lacity.org

Institutions Unit /Schools/Churches - 213-978-3730, 213-978-3612 (Fax)

lafdsci@lacity.org

Film Unit - 213-978-3670, 213-978-3613 (Fax)

lafdfilm@lacity.org

Legal Liaison Unit - (213) 978-3560, (213) 978-3515 (Fax)

lafdlegal@lacity.org

Research Unit (213) 978-3580, (213) 978-3516 (Fax)

Metro Rail FPB Office

1 Gateway Plaza Los Angeles Ca. 90012

DouglassS@metro.net (213) 922 -7269 (213) 922-7536

West Los Angeles FPB Office

7166 W Manchester Ave. Room No.5 Los Angeles, Ca 90045

West Industrial - 213-473-7700, 213-473-7702 (Fax)

lafdwic@lacity.org

Harbor Office FPB

638 Beacon Street Room 530 San Pedro, Ca 90731

Harbor Industrial Unit (310)-732-4580, 310-732-4579 (Fax)

lafdhiu@lacity.org

Valley Office FPB

6262 Van Nuys Blvd Room 451 Van Nuys, Ca 91401

Valley Industrial (818)-374-1110, 818-778-4911 (Fax)

lafdvic@lacity.org

Valley Public Safety Unit (Schools, Churches & Institutions) 818-374-1110, 818-778-4911 (Fax)

lafdvp@lacity.org



FIRE STATION DIRECTORY

September 2013

LOS ANGELES FIRE DEPARTMENT

www.lafd.org

Brian L. Cummings
Fire Chief

For corrections or updates, please contact the Manuals and Orders Unit
e-mail Jennifer Corona at: jennifer.corona@lacity.org

FIRE STATION LOCATIONS

Fire Sta	Resource Grapevine(s)	Bn HQ	Dv HQ	Address Business Phone(s)	City	Zip Code
1	LF, PA, RA	2 <input type="checkbox"/>	S <input type="checkbox"/>	2230 Pasadena Avenue (213) 485-6201	Los Angeles	90031 (323) 226-1605 FAX
2	ALF, E, PA	1 <input type="checkbox"/>	S <input type="checkbox"/>	1962 E Cesar Chavez Ave. (213) 485-6202	Los Angeles	90033 (213) 847-4464 FAX
3	TF, PA, RA, EL, CP, MST, URB	1 <input type="checkbox"/>	S <input checked="" type="checkbox"/>	108 N Fremont Avenue (213) 485-6203	Los Angeles	90012 FAX
4	AE, PA, EM, RA	1 <input checked="" type="checkbox"/>	S <input type="checkbox"/>	450 E Temple Street (213) 485-6204	Los Angeles	90012 (213) 847-7325 FAX
5	LF, AE, PA, EM, URB (310) 645-0082	4 <input checked="" type="checkbox"/>	S <input type="checkbox"/>	8900 S Emerson Avenue (213) 485-6205	Los Angeles	90045 (310) 202-2861 FAX
6	E, PA (323) 661-1294	11 <input type="checkbox"/>	S <input type="checkbox"/>	326 N Virgil Avenue (213) 485-6206	Los Angeles	90004 (323) 644-3657 FAX
7	AE, PA (818) 892-2824	12 <input type="checkbox"/>	N <input type="checkbox"/>	14123 Nordhoff Street (818) 892-4807	Arleta	91331 (818) 895-5613 FAX
8	AE, BP (818) 368-1443	15 <input type="checkbox"/>	N <input type="checkbox"/>	11351 Tampa Avenue (818) 756-8668	Northridge	91324 (818) 831-3237 FAX
9	AE, AT, RA	1 <input type="checkbox"/>	S <input type="checkbox"/>	430 E 7th Street (213) 485-6209	Los Angeles	90014 (213) 485-2160 FAX
10	PA, RA, ALF	1 <input type="checkbox"/>	S <input type="checkbox"/>	1335 S Olive Street (213) 485-6210	Los Angeles	90015 (213) 749-9121 FAX
11	PA, RA, ALF, AE (213) 413-9473 (213) 413-9534	11 <input type="checkbox"/>	S <input type="checkbox"/>	1819 W 7th Street (213) 485-6211	Los Angeles	90057 (213) 847-3825 FAX
12	TF, PA (323) 256-9563	2 <input type="checkbox"/>	S <input type="checkbox"/>	5921 N Figueroa Street (213) 485-6212	Los Angeles	90042 (323) 913-4160 FAX
13	E, PA, EM (213) 388-1307	11 <input checked="" type="checkbox"/>	S <input type="checkbox"/>	2401 W Pico Blvd (213) 485-6213	Los Angeles	90006 (323) 913-4164 FAX
14	PA, RA, AE	1 <input type="checkbox"/>	S <input type="checkbox"/>	3401 S Central Avenue (213) 485-6214	Los Angeles	90011 (213) 763-5195 FAX
15	E, ALF, PA (213) 745-8841 (213) 745-8304	11 <input checked="" type="checkbox"/>	S <input type="checkbox"/>	915 W Jefferson Blvd. (213) 485-6215	Los Angeles	90007 (213) 765-8346 FAX
16	AE (323) 222-4324	2 <input type="checkbox"/>	S <input type="checkbox"/>	2011 N Eastern Avenue (213) 485-6216	Los Angeles	90032 (323) 226-1606 FAX
17	PA, FT, HMT, AE, AR (213) 614-9044	1 <input type="checkbox"/>	S <input type="checkbox"/>	1601 S Santa Fe Avenue (213) 485-6217	Los Angeles	90021 (213) 485-4383 FAX
18	AE, PA (818) 832-7634	15 <input type="checkbox"/>	N <input type="checkbox"/>	12050 Balboa Blvd. (818) 756-8618	Granada Hills	91344 FAX

All updates and corrections should be submitted to Jennifer Corona, Manuals and Orders Unit at (213) 978-3425, or jennifer.corona@lacity.org
This report is also available on-line at the Administrative Services Bureau web pages located at <http://inside.lafd>

FIRE STATION LOCATIONS

Fire Sta	Resource Grapevine(s)	Bn	HQ	Dv	HQ	Address Business Phone(s)	City	Zip Code
19	E, PA, BP (310) 889-7751	9	<input type="checkbox"/>	N	<input type="checkbox"/>	12229 Sunset Blvd. (310) 575-8519	Los Angeles	90049 (310) 471-7891 FAX
20	ALF, PA, RA (213) 413-4573	11	<input type="checkbox"/>	S	<input type="checkbox"/>	2144 W Sunset Blvd. (213) 485-6220	Los Angeles	90026 (213) 207-2101 FAX
21	PA, TF, RM, SQ, RA (323) 235-9192	13	<input type="checkbox"/>	S	<input type="checkbox"/>	1192 E 51st Street (213) 485-6221	Los Angeles	90011 (213) 485-6153 FAX
23	AE, PA, BP (310) 454-2003	9	<input type="checkbox"/>	N	<input type="checkbox"/>	17281 Sunset Blvd. (310) 575-8523	Pacific Palisades	90272 (213) 230-0592 FAX
24	AE (818) 353-3063	12	<input type="checkbox"/>	N	<input type="checkbox"/>	9411 Wentworth Street (818) 756-8624	Sunland	91040 FAX
25	AE, PA (323) 264-0744	1	<input type="checkbox"/>	S	<input type="checkbox"/>	2927 E Whittier Blvd. (213) 485-6225	Los Angeles	90023 (213) 485-9812 FAX
26	AE, LF, PA, RA (323) 737-9010	11	<input type="checkbox"/>	S	<input type="checkbox"/>	2009 S Western Avenue (213) 485-6226	Los Angeles	90018 (213) 763-5198 FAX
27	TF, PA, RA, UR (323) 962-0234 (323) 962-3378	5	<input checked="" type="checkbox"/>	N	<input type="checkbox"/>	1327 N Cole Avenue (213) 485-6227	Los Angeles	90028 (323) 957-6411 FAX
28	AE, RA, BP (818) 368-3568	15	<input type="checkbox"/>	N	<input type="checkbox"/>	11641 Corbin Avenue (818) 756-9728	Northridge	91326 (818) 368-0412 FAX
29	TF, PA, RA, DECON	11	<input type="checkbox"/>	S	<input type="checkbox"/>	4029 W Wilshire Blvd. (213) 485-6229	Los Angeles	90010 (213) 485-0719 FAX
31			<input type="checkbox"/>		<input type="checkbox"/>	Future fire station	Los Angeles	FAX
33	AE, ALF, RA, PA (323) 758-6978	13	<input checked="" type="checkbox"/>	S	<input type="checkbox"/>	6406 S Main Street (213) 485-6233	Los Angeles	90003 (213) 847-4462 FAX
34	AE, PA, RA (323) 737-9100	18	<input type="checkbox"/>	S	<input type="checkbox"/>	3661 S 7th Avenue (213) 485-6234	Los Angeles	90018 (213) 763-5199 FAX
35	ALF, PA, RA, BP (323) 667-9657	5	<input type="checkbox"/>	N	<input type="checkbox"/>	1601 N Hillhurst Avenue (213) 485-6235	Los Angeles	90027 (213) 913-4165 FAX
36	AE, PA, FT	6	<input type="checkbox"/>	S	<input type="checkbox"/>	1005 N. Gaffey Street (310) 548-2836	San Pedro	90732 (310) 548-7748 FAX
37	E, ALF, PA (310) 208-9270	9	<input checked="" type="checkbox"/>	N	<input type="checkbox"/>	1090 S Veteran Avenue (310) 575-8537	Los Angeles	90024 (310) 208-8191 FAX
38	E, PA, HMT (310) 513-9717	6	<input type="checkbox"/>	S	<input type="checkbox"/>	124 E "I" Street (310) 548-7538	Wilmington	90744 (310) 513-2141 FAX
39	E, ALF, PA (818) 997-9981 (818) 989-9814	10	<input checked="" type="checkbox"/>	N	<input type="checkbox"/>	14415 Sylvan Street (818) 756-8639	Van Nuys	91401 (818) 756-7596 FAX

All updates and corrections should be submitted to Jennifer Corona, Manuals and Orders Unit at (213) 978-3425, or jennifer.corona@lacity.org
This report is also available on-line at the Administrative Services Bureau web pages located at <http://inside.lafd>

FIRE STATION LOCATIONS

Fire Sta	Resource Grapevine(s)	Bn HQ	Dv HQ	Address Business Phone(s)	City	Zip Code
40	AE, RAT (310) 831-8439	6 <input type="checkbox"/>	S <input type="checkbox"/>	330 Ferry Street (310) 548-7540	Terminal Island	90731 (310) 548-2815 FAX
41	E, PA, BP (323) 874-2206	5 <input type="checkbox"/>	N <input type="checkbox"/>	1439 N Gardner Street (213) 485-6241	Los Angeles	90046 (310) 513-2141 FAX
42	AE	2 <input type="checkbox"/>	S <input type="checkbox"/>	2021 Colorado Blvd. (213) 485-6242	Los Angeles	90041 (323) 257-9419 FAX
43	E, PA	18 <input type="checkbox"/>	S <input type="checkbox"/>	3690 S. Motor Ave. (310) 840-2143	Los Angeles	90034 (310) 842-9596 FAX
44	AE, RA, BP, SW (323) 223-3939	2 <input type="checkbox"/>	S <input type="checkbox"/>	1410 Cypress Avenue (213) 485-6244	Los Angeles	90065 (323) 224-0934 FAX
46	AE, (2)PA, RA, EM (323) 233-0342	13 <input type="checkbox"/>	S <input type="checkbox"/>	4370 S Hoover Street (213) 485-6246	Los Angeles	90037 (323) 846-3939 FAX
47	E, PA, BP, EM	2 <input type="checkbox"/>	S <input type="checkbox"/>	4575 Huntington Dr. South (213) 485-6247	Los Angeles	90032 (323) 226-1608 FAX
48	AE, LF, RA, SQ (310) 514-9747 (310) 832-4768	6 <input type="checkbox"/>	S <input type="checkbox"/>	1601 S Grand Avenue (310) 548-7548	San Pedro	90731 (310) 548-2816 FAX
49	AE, BT3 & BT4 (310) 513-8900 (310) 513-9172	6 <input checked="" type="checkbox"/>	S <input type="checkbox"/>	400 Yacht Street, Berth 194 (310) 548-7549	Wilmington	90744 (310) 548-2922 FAX
50	ALF, RA	2 <input type="checkbox"/>	S <input type="checkbox"/>	3036 Fletcher Drive (213) 485-6250	Los Angeles	90065 (323) 913-4162 FAX
51	AE, PA (310) 642-9906	4 <input type="checkbox"/>	S <input type="checkbox"/>	10435 Sepulveda Blvd. (213) 485-6251	Los Angeles	90045 (310) 568-9842 FAX
52	AE, PA (323) 462-4232	5 <input type="checkbox"/>	N <input type="checkbox"/>	4957 Melrose Avenue (213) 485-6252	Los Angeles	90029 (213) 485-6240 FAX
55	E, PA (323) 257-5686	2 <input checked="" type="checkbox"/>	S <input type="checkbox"/>	4455 E York Blvd. (213) 485-6255	Los Angeles	90041 (213) 847-4463 FAX
56	AE, PA, HR (323) 666-3505	2 <input type="checkbox"/>	N <input type="checkbox"/>	2759 Rowena Avenue (213) 485-6256 (213) 847-4634	Los Angeles	90039 (323) 913-4169 FAX
57	AE, 2PA, RA (323) 753-1388	13 <input type="checkbox"/>	S <input type="checkbox"/>	7800 S Vermont Avenue (213) 485-6257	Los Angeles	90044 (213) 565-2594 FAX
58	AE, PA, RA (310) 246-9812	18 <input type="checkbox"/>	S <input type="checkbox"/>	1556 S Robertson Blvd. (213) 485-6258	Los Angeles	90035 (323) 957-7085 FAX
59	AE, PA, EM, RAT (310) 444-9970	9 <input type="checkbox"/>	N <input type="checkbox"/>	11505 W Olympic Blvd. (310) 575-8559	Los Angeles	90064 (310) 479-3992 FAX
60	E, ALF, PA, RA, FT (818) 509-8505	14 <input checked="" type="checkbox"/>	N <input type="checkbox"/>	5320 Tujunga Avenue (818) 756-8660	North Hollywood	91601 (818) 756-7594 FAX

All updates and corrections should be submitted to Jennifer Corona, Manuals and Orders Unit at (213) 978-3425, or jennifer.corona@lacity.org
This report is also available on-line at the Administrative Services Bureau web pages located at <http://inside.lafd>

FIRE STATION LOCATIONS

Fire Sta	Resource Grapevine(s)	Bn	HQ	Dv	HQ	Address Business Phone(s)	City	Zip Code
61	TF, PA, RA (323) 936-3710	18	<input type="checkbox"/>	S	<input type="checkbox"/>	5821 W 3rd Street (213) 485-6261	Los Angeles	90036 (213) 847-4460 FAX
62	AE, PA	4	<input type="checkbox"/>	S	<input type="checkbox"/>	11970 W Venice Blvd. (310) 397-2662	Los Angeles	90066 (310) 391-7091 FAX
63	TF, PA (310) 306-9934 (310) 827-2696	4	<input type="checkbox"/>	S	<input type="checkbox"/>	1930 Shell Avenue (310) 575-8563	Venice	90291 (310) 306-4162 FAX
64	E, ALF, (2)PA, RA (323) 230-9314	13	<input type="checkbox"/>	S	<input type="checkbox"/>	118 W 108th Street (213) 485-6264	Los Angeles	90061 (323) 230-8455 FAX
65	AE, PA, RA	13	<input type="checkbox"/>	S	<input type="checkbox"/>	1801 E Century Blvd. (213) 485-6265	Los Angeles	90002 (323) 789-4945 FAX
66	AE, ALF, (2)PA, RA (323) 298-8035	13	<input type="checkbox"/>	S	<input type="checkbox"/>	1909 W Slauson Avenue (213) 485-6266	Los Angeles	90047 (213) 346-7371 FAX
67	AE, RA	4	<input type="checkbox"/>	S	<input type="checkbox"/>	5451 Playa Vista Drive (310) 862-2844	Los Angeles	90094 (310) 862-2846 FAX
68	E, PA (323) 932-9502	18	<input checked="" type="checkbox"/>	S	<input type="checkbox"/>	5023 W Washington Blvd. (213) 485-6268	Los Angeles	90019 (323) 938-4870 FAX
69	ALF, PA, RA (310) 454-9210 (310) 454-7474	9	<input type="checkbox"/>	N	<input type="checkbox"/>	15045 Sunset Blvd. (310) 575-8569	Pacific Palisades	90272 (310) 230-9352 FAX
70	AE, PA, EM	15	<input checked="" type="checkbox"/>	N	<input type="checkbox"/>	9861 Reseda Blvd. (818) 756-7670	Northridge	91324 (818) 756-7906 FAX
71	AE, PA (310) 475-8318	9	<input type="checkbox"/>	N	<input type="checkbox"/>	107 S Beverly Glen Blvd. (310) 575-8571	Los Angeles	90024 (310) 234-9272 FAX
72	AE, PA (818) 884-7623 (818) 992-9070	17	<input type="checkbox"/>	N	<input type="checkbox"/>	6811 De Soto Avenue (818) 756-8672	Canoga Park	91303 (818) 756-7595 FAX
73	ALF, PA, RA (818) 705-9340 (818) 705-9341	17	<input type="checkbox"/>	N	<input type="checkbox"/>	7419 Reseda Blvd. (818) 756-8673	Reseda	91335 (818) 756-7915 FAX
74	ALF, PA, BP, RA (818) 342-3576 (818) 996-7543	12	<input type="checkbox"/>	N	<input type="checkbox"/>	7777 Foothill Blvd. (818) 756-8674	Tujunga	91042 (818) 352-6762 FAX
75	ALF, PA, HMT, RA (818) 361-5909 (818) 365-9076	17	<input type="checkbox"/>	N	<input type="checkbox"/>	15345 San Fernando Mission (818) 756-8675	Mission Hills	91340 (818) 756-7915 FAX
76	AE, PA (323) 850-9521	5	<input type="checkbox"/>	N	<input type="checkbox"/>	3111 N Cahuenga Blvd. (213) 485-6276	Los Angeles	90068 (323) 882-6522 FAX
77	AE, PA, WT (818) 767-5443 (818) 767-9129	12	<input type="checkbox"/>	N	<input type="checkbox"/>	9224 Sunland Blvd. (818) 756-8677	Sunland	91352 (818) 767-1077 FAX
78	ALF, PA, EM, RA, AR	14	<input type="checkbox"/>	N	<input type="checkbox"/>	4041 Whitsett Avenue (818) 756-8678	Studio City	91604 (818) 623-4162 FAX

All updates and corrections should be submitted to Jennifer Corona, Manuals and Orders Unit at (213) 978-3425, or jennifer.corona@lacity.org
This report is also available on-line at the Administrative Services Bureau web pages located at <http://inside.lafd>

FIRE STATION LOCATIONS

Fire Sta	Resource Grapevine(s)	Bn HQ	Dv HQ	Address Business Phone(s)	City	Zip Code
79	AE, PA (310) 329-0110	13 <input type="checkbox"/>	S <input type="checkbox"/>	18030 S Vermont Avenue (310) 548-7579	Gardena	90247 FAX
80	CR, FM (310) 645-7127 (310) 642-9996	4 <input type="checkbox"/>	S <input type="checkbox"/>	6911 World Way West (213) 485-6280	Los Angeles	90045 (310) 646-8217 FAX
81	AE, PA, RA, RAT	10 <input type="checkbox"/>	N <input type="checkbox"/>	14355 W Arminta Street (818) 756-8681	Panorama City	91402 (818) 374-5875 FAX
82	E, PA (323) 462-9324	5 <input type="checkbox"/>	N <input type="checkbox"/>	5769 W Hollywood Blvd. (213) 485-6282	Los Angeles	90028 (323) 957-7082 FAX
83	AE, PA, BP, WT, ELT, MST	10 <input type="checkbox"/>	N <input type="checkbox"/>	4960 Balboa Blvd. (818) 756-8683 (818) 310-1055	Encino	91316 (818) 386-2906 FAX
84	AE, PA, BP, EM	17 <input checked="" type="checkbox"/>	N <input type="checkbox"/>	21050 W Burbank Blvd. (818) 756-8684	Woodland Hills	91367 (818) 756-9454 FAX
85	TF, PA, UR, MST, ELT (310) 534-9101 (310) 539-0969	6 <input type="checkbox"/>	S <input type="checkbox"/>	1331 W 253rd Street (310) 548-7585	Harbor City	90710 (310) 548-2823 FAX
86	AE, PA, SW, BP (818) 506-5998	14 <input type="checkbox"/>	N <input type="checkbox"/>	4305 Vineland Avenue (818) 756-8686	North Hollywood	91602 (818) 623-4162 FAX
87	E, ALF, PA, SQ	15 <input type="checkbox"/>	N <input type="checkbox"/>	10124 Balboa Blvd. (818) 756-8687 (818) 756-0967	North Hills	91343 (818) 366-0708 FAX
88	E, ALF, PA, UR, TR, EA, WT	10 <input type="checkbox"/>	N <input checked="" type="checkbox"/>	5101 N Sepulveda Blvd. (818) 756-8688	Sherman Oaks	91403 (818) 756-9646 FAX
89	E, ALF, PA, RA, URB (818) 765-9941 (818) 765-9942	14 <input type="checkbox"/>	N <input type="checkbox"/>	7063 Laurel Canyon Blvd. (818) 756-8689	North Hollywood	91605 (818) 756-7921 FAX
90	TF, PA, AE (818) 787-6380	10 <input type="checkbox"/>	N <input type="checkbox"/>	7921 Woodley Avenue (818) 756-8690	Van Nuys	91406 FAX
91	AE, PA (818) 367-6800	12 <input type="checkbox"/>	N <input type="checkbox"/>	14430 Polk Street (818) 756-8691	Sylmar	91342 (818) 362-9412 FAX
92	ALF, PA, RA (310) 842-8552	18 <input type="checkbox"/>	S <input type="checkbox"/>	10556 W Pico Blvd. (310) 840-2192	Los Angeles	90064 (213) 847-1669 FAX
93	TF, PA (818) 342-1645 (818) 344-1353	17 <input type="checkbox"/>	N <input type="checkbox"/>	19059 Ventura Blvd. (818) 756-8693	Tarzana	91356 (818) 756-7916 FAX
94	AE, LF, PA, RA, BP	18 <input type="checkbox"/>	S <input type="checkbox"/>	4470 Coliseum Street (213) 485-6294	Los Angeles	90016 (213) 485-1670 FAX
95	TF, PA, SQ (310) 642-9985	4 <input type="checkbox"/>	S <input type="checkbox"/>	10010 International Road (213) 485-6295	Los Angeles	90045 (310) 342-3128 FAX
96	ALF, PA, RA (818) 341-0418	15 <input type="checkbox"/>	N <input type="checkbox"/>	21800 Marilla Street (818) 756-8696	Chatsworth	91311 (818) 756-7907 FAX

All updates and corrections should be submitted to Jennifer Corona, Manuals and Orders Unit at (213) 978-3425, or jennifer.corona@lacity.org
This report is also available on-line at the Administrative Services Bureau web pages located at <http://inside.lafd>

FIRE STATION LOCATIONS

Fire Sta	Resource Grapevine(s)	Bn HQ	Dv HQ	Address Business Phone(s)	City	Zip Code
97	AE, PA (323) 656-0395	14 <input type="checkbox"/>	N <input type="checkbox"/>	8021 Mulholland Drive (818) 756-8697	Los Angeles	90046 (323) 957-7089 FAX
98	E, ALF, PA, RA, DECON, BP (818) 899-6957 (818) 896-4056	12 <input checked="" type="checkbox"/>	N <input type="checkbox"/>	13035 Van Nuys Blvd. (818) 756-8698	Pacoima	91331 (818) 834-5159 FAX
99	AE, PA (818) 981-6379	10 <input type="checkbox"/>	N <input type="checkbox"/>	14145 Mulholland Drive (818) 756-8699	Beverly Hills	90210 (818) 756-7920 FAX
100	E, PA, FT, SW (818) 881-0744	10 <input type="checkbox"/>	N <input type="checkbox"/>	6751 Louise Avenue (818) 756-8600	Van Nuys	91406 (818) 345-8476 FAX
101	E, PA (310) 833-7400	6 <input type="checkbox"/>	S <input type="checkbox"/>	1414 W 25th Street (310) 548-7501	San Pedro	90732 (310) 548-7712 FAX
102	AE, PA (818) 785-3222 (818) 989-3284	14 <input type="checkbox"/>	N <input type="checkbox"/>	13200 Burbank Blvd. (818) 756-8602	Van Nuys	91401 (818) 756-7904 FAX
103	AE, RA (818) 885-9850	15 <input type="checkbox"/>	N <input type="checkbox"/>	18143 Parthenia Street (818) 756-8603	Northridge	91325 (818) 756-7908 FAX
104	E, PA (818) 341-4006	17 <input type="checkbox"/>	N <input type="checkbox"/>	8349 Winnetka Avenue (818) 756-8604	Canoga Park	91306 (818) 756-3817 FAX
105	ALF, PA, E (818) 713-1544 (818) 883-0588	17 <input type="checkbox"/>	N <input type="checkbox"/>	6345 Fallbrook Avenue (818) 756-8605	Woodland Hills	91364 (818) 756-7913 FAX
106	AE, PA, FD (818) 347-0543	17 <input type="checkbox"/>	N <input type="checkbox"/>	23004 Roscoe Blvd. (818) 756-8606	West Hills	91304 (818) 756-7914 FAX
107	E, PA (818) 341-9497	15 <input type="checkbox"/>	N <input type="checkbox"/>	20225 Devonshire Street (818) 756-8607	Chatsworth	91311 (818) 341-5635 FAX
108	AE (310) 274-2618	14 <input type="checkbox"/>	N <input type="checkbox"/>	12520 Mulholland Drive (818) 756-8608	Beverly Hills	90210 (213) 978-3816 FAX
109	AE, RA, BP (310) 471-3981 (818) 780-8685	10 <input type="checkbox"/>	N <input type="checkbox"/>	16500 Mulholland Drive (818) 756-8609	Los Angeles	90049 (310) 472-0924 FAX
110	BT5 (310) 833-9929	6 <input type="checkbox"/>	S <input type="checkbox"/>	2945 Miner Street, Berth 44A (310) 548-7545	San Pedro	90731 (310) 548-2819 FAX
111	BT1 (310) 831-3475 (310) 831-5540	6 <input type="checkbox"/>	S <input type="checkbox"/>	1444 S Seaside Ave., Berth 256 (310) 548-7541	Terminal Island	90731 (310) 548-2926 FAX
112	E, PA, BT2 (310) 548-9929	6 <input type="checkbox"/>	S <input type="checkbox"/>	444 S Harbor Blvd, Berth 86 (310) 548-7542	San Pedro	90731 (310) 548-2606 FAX
114	HELICOPTERS, CR, FM (818) 782-1430	10 <input type="checkbox"/>	N <input type="checkbox"/>	16617 Arminta Street (818) 756-8635	Van Nuys	91406 (818) 756-4094 FAX

All updates and corrections should be submitted to Jennifer Corona, Manuals and Orders Unit at (213) 978-3425, or jennifer.corona@lacity.org
This report is also available on-line at the Administrative Services Bureau web pages located at <http://inside.lafd>



Email Notification & Report Submittal Instructions

Notification to the Chief's Regulation No. 4 Unit shall be made at least two (2) working days prior to any testing. Less than two working days requires verbal approval.

MS OUTLOOK

- Go into your calendar
- Find the Meeting Request option
- Fill in the boxes:
 - To: **LAFDreg4@lacity.org**
 - Location: leave blank
 - Start Time: The time the tester will be at the test site
 - End Time: **30 minutes** MAXIMUM even if the test will be longer.
 - Subject: FOLLOW THE FORMAT BELOW.
 - **Format:** Date (1 day only), Time, Tester's name: Cert #, Equipment being tested, Testing Address, Tester's Cell number (FORMAT AND PUNCTUATION IS ESSENTIAL - see examples)

Send the request

OTHER EMAIL SYSTEMS

Enter the information onto the **SUBJECT LINE** only. Use the punctuations as shown below.

Format:

Date, Time, Tester's name: Cert #, Equipment being tested, Building Address, Tester's Cell number.

Example (on SUBJECT LINE, Various formats):

12/25, 5PM, John Smith: R4000, FP, FA, 200 N. Main St., (213) 571-4567

12-25-2010, 1700, John Smith: R4000, EP, FA, 200 North Main Street, 213-571-4567

01/12/2011, 0800, John Smith: R4000, **RETEST** (bold not required), EP, 200 N. Main, 213-571-4567

CANCEL 01/12/2011, 0800, John Smith: R4000, (bold not required), EP, 200 N. Main, 213-571-4567

NOTE: Subject line shall be used for one (1) day and one time period only. Multiple days shall be put on multiple emails.

Abbreviations for equipments:

AE– Auto Elevator

AEWO– Auto Elevator Witness Only

AS– Auto Sprinkler

Batt– Battery

BC– Building Communications

CFA– Complex Fire Life Safety (Fire Life Safety Sys.)

CI– Class I

CII– Class II

CIII– Class III

Combined– Combined Standpipe & Sprinkler

CS– Central Station

EP– E-Power (Generator)

FA– Basic Fire Alarm

FD– Auto. Closing Fire Assemblies (Fire Doors)

FE– Fire Escape Assemblies

FP– Fire Pumps

GD– Methane Gas Detection

MS– Mechanical Smoke-proof Enclosures

PH– Private Hydrant

PS– Pressurized Stairshaft

SE– Smoke Evacuation

UL300– UL300 system

Reminder- FAX, CALL, or EMAIL the Fire Prevention Unit or Fire station responsible for the occupancy.

Call the Chief Regulation No. 4 Unit at (213) 978-3597 or email us at LAFDreg4@lacity.org for any *changes* in time, date, or tester. Include the *ORIGINAL* time & date.



Email Notification & Report Submittal Instructions

Report Submission via Email:

After a Reg. 4 test is done for a building, you may send a copy of the F340 report to the Reg. 4 Unit via email. You need to follow the format when you type the information in the subject line of the email.

The format is:

REPORT: Date, Time, Tester's Name: Cert #, Equipment being tested, Building Address, Tester's Cell #.

Example:

Report, 12/25, 5PM, John Smith: R4000, FP, FA, 200 N. Main St., (213) 571-4567

Report, 12-25-2010, 1700, John Smith: R4000, EP, FA, 200 North Main Street, 213-571-4567

Report, 1/12/2011, 0800, John Smith: R4000, **RETEST** (bold not required), EP, 200 N. Main, 213-571-4567

Remember to attach the file to the email. Do not send a hard copy to the Reg. 4 Unit if you emailed an electronic copy.

Another method is to find your 2 days notification that you sent to the Reg. 4 Unit in your sent box and edit the subject line to include the word "Report" in front of it, then attach the file and send the email.



F-340R FIRE PROTECTION EQUIPMENT PERFORMANCE REPORT INSTRUCTIONS Initial Test

INITIATED BY: Chief's Regulation No. 4 Certified Tester

NUMBER OF SECTIONS: I-IV Required
(Section V- "Supplemental Information" Optional)

PERIOD RETAINED: Five years or until next certification, in Fire Station or Inspection Unit file

FORWARD TO: Fire Station or Fire Prevention Unit responsible for the maintenance of all inspection records for the occupancy

REFERENCE: L.A.M.C. L.A.M.C. **57.107.6.**, Chief's Regulation No. 4

ROUTING: Certified Tester to Fire Station or Fire Prevention Unit

INITIAL TEST: Certified Tester completes a separate F-340R for each system tested and submits the original and one copy directly to the Fire Station or Fire Prevention Unit responsible for the maintenance of all inspection records for the occupancy concerned and a second copy to the Chief's Regulation No. 4 Unit. The Fire Station or Fire Prevention Unit shall send a copy to the Responsible Party.

The Fire Station or Fire Prevention Unit shall contact the Responsible Party to discuss the results of the test. If system defects are indicated, the Fire Department shall direct the Responsible Party to repair all system defects immediately through the use of a Notice of Violation.

APPLICATION:

1. This form is used by Chief's Regulation No. 4 Certified Testers to document test results of fire protection equipment performance per Chief's Regulation No. 4 and L.A.M.C. 57.107.6. The form provides certification that the required testing has been performed.
2. This form shall **NOT** be initially used to require repair of equipment known to be defective and/or inoperative prior to the start of the test. Fire Department personnel shall issue a "Notice of Violation" (NOV) to the Responsible Party to repair such equipment. Subsequent testing shall be required.
3. This form shall **NOT** be used to document fire code violations or to evaluate or verify the adequacy of the design of ANY fire protection system and/or equipment.
4. The role of the Certified Tester is limited to testing the performance of fire protection equipment and submitting the results to the Fire Department. It is not intended to give the Certified Tester the authority to cause anyone to take action with regard to the test results.
5. Changes, alterations or additions to the format, appearance or content of this document are strictly prohibited.
6. Except for gray shaded areas, all entries shall be computer generated or type written (except for signatures).
7. All submitted reports shall be stapled in the upper left hand corner.

COMPLETING THE FORM: Use Tab, Arrow Keys, or pointing device to advance from field to field

Coversheet

TOTAL HOURS: Enter the total amount of “Hours” expended to complete testing (i.e. an 8 hour job may take 1 person 8 hours but only 4 hours with 2 people. The total hours for both scenarios is 8 hours)

PAGE ___ OF ___: Enter the current page number and the total pages of the report. (**DO NOT** include page numbers from Section V)

TEST SITE INFORMATION: Enter the building number, street name, city, state, zip code and telephone number of the occupancy being tested, the year the building was built, the construction type. (Select from the dropdown menu) and the building square footage

Note: Year of the building and square footage can be obtained from various programs online such as Department of City Planning’s Zone Information and Map Access System (Zimas) at:
<http://zimas.lacity.org>

RESPONSIBLE PARTY: Enter the full name, title of the person responsible for ensuring life safety at the test site location, name of business, and the address where the business receives mail and the telephone number where the responsible party can be contacted.

INITIAL TEST INFORMATION: Enter the date(s) of the initial test, the testing company name (**no logos permitted**), and company telephone number, building number, street name, city, state and zip code.

FC/BC: The Certified Tester should mark this box to indicate that important information concerning Fire Code or Building Code issues have been attached to the F-340R as Section V “Supplemental Information”. This section is not part of the F-340R report. This section provides the Tester an opportunity to communicate additional information or concerns closely related to Fire Protection Equipment Performance testing but are beyond the scope, authority and testing parameters of the Certified Tester.

SYSTEMS OPTION BOXES: Where applicable select the box(s) that apply to the type of system(s) tested.

Note: for fire alarm “basic” fire alarm systems are limited to magnetically held fire doors and elevator recall. Additional “N/A” boxes will automatically be checked in Section IV. **Do not use the Fire Alarm form for separate/stand alone Central Station Systems.**

TEST RESULTS: Select “PASSED” OR “FAILED” to indicate the results of the test.

THE CHIEF’S REGULATION NO. 4 UNIT WAS NOTIFIED (via E-Mail) ON: Indicate the date the Chief’s Regulation No. 4 Unit was notified.

Note: Notification is required a minimum of **two full working days** prior to the day of the test (the day of notification is not counted as a full day).

TESTERS NAME, CERTIFICATE NUMBER & EXPIRATION DATE: Enter the Certified Tester’s first and last name, Chief’s Regulation No. 4 Certificate of Fitness Number and Certificate expiration date.

TESTER’S SIGNATURE: The Certified Tester must sign all reports. The signature must match the signature on the Certificate of Fitness Identification Card. A digital signature may be used with written approval from the Chief’s Regulation No. 4 Unit in accordance with LAFD policies and procedures.

FIRE DEPARTMENT WITNESS: The Certified Tester shall enter the name of the Fire Department Member that witnessed the test (when applicable). If the Fire Department Member only witnessed part of the test, the word “partial” shall be added to the box.

Coversheet (continued)

NOTIFICATION TO RESPONSIBLE FIRE STATION OR INSPECTION UNIT: Select the Fire Station OR Fire Prevention Unit responsible for fire prevention enforcement at the test site. Print a persons name or Fire Station, or Fire Prevention Bureau (FPB) Unit email address where notification was made and the date of notification.

Note: Accurate inspection responsibility must be verified to be correct to enter an e-mail address or when leaving a “voice message” instead of a name.

Note: Notification is required a minimum of **two full working days** prior to the day of the test. (The day of notification and the day of the is not counted as a full day)

REPORT SUBMITTAL INFORMATION: Send all reports directly to the Fire Station or Fire Prevention Unit. Select the type of delivery used to submit the report.

Option 1: U.S. Mail: Reports submitted by U.S. Mail, enter the building address of the Fire Station or Fire Prevention Unit and the date the report was sent.

Option 2: E-mail: Reports submitted by e-mail enter the e-mail address of the Fire Station or Fire Prevention Unit and the date the report was sent.

Note: Building addresses for the fire stations or fire prevention units may be obtained online from the LAFD Fire Prevention website <http://www.lafd.org>. For Email addresses of Fire Prevention Units select the Chief's Regulation No. 4 Tab on the left of the page. (At this time some Fire station have email addresses you may inquire at each station when verifying correct Fire Station fire inspection responsibilities)

I HAVE REVIEWED AND DISCUSSED THIS REPORT WITH: The Fire Department Member who has the inspection responsibility for the Test Site shall discuss the results of the test with the owner/owner's representative and shall enter the name of the person and the date of the conversation.

LAFD MEMBER'S NAME: The Fire Department Member who discussed the results of the test with the owner/owner's representative shall print his/her name and the date the discussion occurred.

LAFD MEMBER'S SIGNATURE: The Fire Department Member who discussed the results of the test with the owner/owner's representative shall sign his/her name.

LAFD MEMBER'S WORK ASSIGNMENT AND TELEPHONE NUMBER: The Fire Department Member who discussed the results of the test with the owner/owner's representative shall print his/her work assignment and telephone number where he/she is assigned.

FIRE/LIFE SAFETY NOTICE TO CORRECT DEFECTS ISSUED: Indicate if a Notice of Violation (N.O.V.) was written to correct all defects of original test by selecting “Yes” or “No”.

NOTICE NUMBER: Input the number shown on the upper right hand corner of the “Notice of Violation.”

DATE OF NOTICE: If a Fire/Life Safety Notice was written, input the date the notice was written.

Section I - Building Description

The information in this section provides the Fire Department with an overview of the test site. The Fire Inspector or Fire Station Member can use this information to determine the different types of occupancies within the building, additional fire protection equipment, and unique property features that may pose a problem during emergency operations.

PRIMARY AND SECONDARY OCCUPANCY TYPES: Select the appropriate primary and secondary occupancy types from the drop down menu.

TYPE OF BUSINESS CONDUCTED: Indicate the type(s) of business that is conducted in the building.

NUMBER OF STORIES: Indicate the total number of stories (floors) within the building.

NUMBER OF LEVELS BELOW GROUND: Enter the total number of levels below ground.

TYPES OF OCCUPANCIES BELOW GROUND: Provide a brief description of the types of occupancies below ground level (i.e., office, storage, workshops, etc.).

FIRE CONTROL ROOM: Indicate whether or not the building has a Fire Control Room by selecting "Yes" or "No"

ELEVATOR INFORMATION: Enter the total number of elevator cars and banks for each type.

NUMBER OF STAIRWAYS: Indicate the total number of stairways inside the building.

FIRE PUMPS: Indicate whether or not the building has one or more fire pumps and the location.

EMERGENCY GENERATORS: Indicate whether or not the building has one or more emergency generators and the location.

PARKING STRUCTURE: Indicate if the parking area (for the building) is underground, attached or detached from the building.

UNIQUE PROPERTY FEATURES: Provide additional information such as; two separate street entrances, separate buildings onsite, if the building shares the fire protection system with another property address, and /or if the building is completely or partially sprinklered etc.

Section II: System Description: General Use Form (for Systems that do not have a specific F-340R form)

This section shall include the particular type of fire protection system or equipment, name of the manufacturer, specific locations, and all devices, appliances, components, or attachments that are monitored or utilized by the system. The information in this section shall include the following information; (as applicable); Date of system Installation, Name of Manufacturer, Model Number, Panel Location(s), Type of Devices/Components/Valves and their Locations.

Section II: System Description: System Specific Form (Use for systems that have a specific F-340R form)

This section shall include the particular type of fire protection system or equipment, name of the manufacturer, specific locations, and all devices, appliances, components, or attachments that are monitored or utilized by the system. The specific type of information required by the Fire Department is provided in the form of “check boxes” and blank fields. The Certified Tester shall select all appropriate boxes that apply and enter all pertinent information in the spaces provided.

Section III – Findings If it is not specifically written in section IV Certified Testers shall not add additional requirements. The appropriate areas of this section shall be used to list system defects from the initial performance test. The shaded areas are for the retest only. A copy of Section III shall be attached to the F-340RT Retest form in all cases.

SYSTEM DEFECTS FOUND: Selecting this box indicates that system defects were found during the initial test as indicated in section IV of this report. **Additional requirements not found in section IV shall not be added.**

NO SYSTEM DEFECTS FOUND: Selecting this box indicates that system defects were **NOT** found during the initial test as indicated in Section IV of this report.

Note: F-340R Specific forms - Only valid items from section IV (“testing Procedures”) are permitted to be listed Section III “Findings”. Fire code or building code issues, are not permitted in section III

F-340R General use and Specific Forms- all procedures listed shall be based on Reg.4 approved procedures and shall NOT include fire code violations or building code installation violations e.g. signs not installed, no sprinkler coverage, missing sprinklers in sprinkler box etc. All systems/equipment F-340R defects shall be written as a “negative”/“opposite” of the requirement in section IV (e.g. 2.1 horn is less than 75 dBA, 3.4 Exit sign not visible from 100 feet, 4.1 Sprinkler is older than 50 years)

DEFECT#: All defects shall be listed in numerical order starting with the number one (1). Duplicate pages of this section shall be added as needed. After the last defect is listed, the statement “**NO OTHER DEFECTS FOUND**” shall be printed in capital letters, and in **BOLD** type on the next available line.

ITEM # FROM SECTION IV: Each defect shall include the corresponding “item number” from Section IV Testing Procedures” (i.e. 3.1, 4.2, 5.5. etc.). **Additional information shall not be added to any item in section IV by the Tester.**

DESCRIPTION: Describe in detail how the component or device did not operate as it was intended in Section IV (i.e. 5.1 - Manual Pull Station failed to initiate an audible alarm or 6.4- Horn failed to produce a 75-db minimum).

LOCATION: Indicate the location where the device or component is located on the property (i.e. first floor adjacent to room number 101 or Stair No.1-5th floor).

RETEST ONLY: This section is to be filled out by the Certified Tester who performs the “Retest” on any item listed in this section.

SEE ADDITIONAL SECTION III PAGES: Select this box when Section III contains more than one page.

INITIAL TEST PERFORMED BY: The Certified Tester who performed the initial test shall enter his/her full name, certificate number and expiration date, a valid signature and the phone number of his/her testing agency.

RETEST DATE: The Certified Tester responsible for the retest shall input the date the retest was performed.

RETEST PERFORMED BY: The Certified Tester who performed the retest shall enter his/her full name, certificate number and expiration date, a valid signature and the phone number of his/her testing agency.

NOTE: Any retest performed on equipment repaired without a valid permit (when required) shall be deemed invalid upon discovery.

Section IV - Testing Procedures: - General Use Form (Use for systems that do not have a specific F-340R form)

This section contains a list of required testing procedures. Clearly indicate each testing process which shall include (1) what was checked prior to and during testing. (2) Equipment used during the test. (3) The requirement(s) for passing each segment of testing in accordance with approved Reg. 4 Testing Procedures. (4) Method used to perform the test. Minimum/maximum times, static & residual pressures, flow rates, sound levels, battery replacement dates, automatic and manual requirements, date system installed (as applicable). **See "Reg. No. 4 Testing Procedures" Document R4006 for items to enter into this section.**

Section IV - Testing Procedures - System Specific Form (Use for systems that have a specific F-340R form)

This section contains a list of required testing procedures/ items. It is designed to standardize testing and ensure that each Certified Tester performs a thorough test every time. This form does not specify how to perform specific tasks or procedures. The Certified Tester is required to perform all testing procedures in accordance with all the applicable items listed in this section. **Certified Testers shall not add additional requirements to any item in section IV.**

Note: This form does not necessarily specify how to perform specific tasks or procedures. The Certified Tester is required to perform all testing procedures in accordance with all LAFD Chief's Regulation No. 4 (Reg. 4) testing procedures and the applicable Local, State and National codes and standards in effect at the time of installation.

ITEM #: The number in this column shall be used as a reference in Section III- "Findings" whenever any item in this section receives a "FAIL" status.

PASS: Indicates that the item performed correctly or met the minimum requirement.

FAIL: Indicates the item did not perform correctly or did not meet the minimum requirement.

N/A: (Not applicable) Indicates that the procedure does not apply to this test.

Note: All items shall indicate Pass, Fail, or N/A.

Item #12.1- TESTER IS CHIEF'S REG. 4 CERTIFIED FOR CENTRAL STATION: Marking the "NO" box will cause "N/A" to be automatically marked in the rest of Item #12.

AREAS/DEVICES/APPLIANCES NOT ACCESSIBLE FOR TESTING: All areas of the occupancy shall be accessible for testing and inspection. This section is used to alert the Fire Inspector or Fire Station Member of an area or areas where a test or procedure could not be performed and therefore the results of the test do not include the area(s) indicated in this section.

The information reported in this section shall be investigated by Fire Department personnel and tested at their discretion. The Certified Tester shall provide to the owner/owner's representative a minimum of 48 hours notice prior to scheduling a test. All tenants must be notified and the owner/owner's representative shall make arrangements to gain access to all areas.

Note: In all cases areas not included in the initial test shall be included in the next testing cycle.

Section V (when attached) – Supplemental Information -Fire Code/ Building Code Issues (optional):

This section is not a required section of any F-340R "Fire Protection Performance Report" or F-340RT "Retest Report". All testing criteria for the performance of fire protection equipment are contained in Section IV. Testers who encounter fire code issues or building code issues such as missing FDC caps, missing signs, storage on balconies, areas not protected by fire sprinklers, etc. can use Section V to alert the Fire Department. When Section V pages are provided, Fire Department personnel **shall** take the appropriate action to resolve the issue(s), which may include writing a Notice of Violation or contacting the Department of Building and Safety.

Note: Fire Department personnel shall remove this section prior to forwarding the F-340R "Fire Protection Equipment Performance Report" or F-340RT "Retest Report" to the building owner/owner's representative.

Printing notes: For printing convenience, this document is divided into the following 4 Section Breaks. Each Section Break can be printed individually or together.

Cover page and Section I and II, Section III, Sections IV and V, Instructions

Section III and can be copied for additional pages if needed



LOS ANGELES FIRE DEPARTMENT

FIRE PROTECTION EQUIPMENT PERFORMANCE REPORT

GENERAL USE: ENTER SYSTEM HERE

 TOTAL HOURS _____
 PAGE 1 of _____
TEST SITE INFORMATION

TEST SITE ADDRESS: (STREET)		(CITY)	(STATE)	(ZIP)	TEST SITE PHONE:
		LOS ANGELES	CA		
OCCUPANCY TYPE:	NUMBER OF STORIES:	YEAR BUILT:	CONSTRUCTION TYPE:	SQUARE FOOTAGE:	
			Drop-down menu		

RESPONSIBLE PARTY

NAME (LAST, FIRST, MI)	TITLE:	FIRM OR D.B.A.
MAILING ADDRESS: (STREET)	(CITY)	(STATE) (ZIP)
		PHONE:

INITIAL TEST INFORMATION

INITIAL TEST DATE(S)	TESTING AGENCY	PHONE:
	AGENCY NAME	
ADDRESS OF TESTING AGENCY: (STREET)	(CITY)	(STATE) (ZIP)

CONTACT THE FIRE DEPARTMENT MEMBER (BELOW) PRIOR TO STARTING REPAIR

<input type="checkbox"/> FC/BC The Chief's Regulation No. 4 Unit was notified on _____ at lafdreg4@lacity.org All sections below shall be found in the following pages of this report. SECTIONS: I. <u>BUILDING DESCRIPTION</u> II. <u>SYSTEM DESCRIPTION</u> III. <u>FINDINGS</u> IV. <u>TESTING PROCEDURES/ WORKSHEETS</u> V. <u>FIRE CODE/BUILDING CODE ISSUES (OPTIONAL)</u>	TEST RESULTS <input type="checkbox"/> PASSED <input type="checkbox"/> FAILED
---	--

I HEREBY CERTIFY THAT THE FIRE PROTECTION EQUIPMENT LISTED ABOVE HAS BEEN FULLY TESTED IN ACCORDANCE WITH THE CHIEF'S REGULATION NO. 4 OF THE LOS ANGELES FIRE CODE AND THAT THE RESULTS ARE ACCURATELY LISTED ABOVE AND THE EQUIPMENT IS FULLY OPERABLE **EXCEPT** AS NOTED.

TESTER'S NAME (PRINT) & CERTIFICATE #	EXPIRATION DATE	TESTER'S SIGNATURE	FIRE DEPARTMENT WITNESS (NAME IF APPLICABLE)

REPAIR AND RETEST: IF DEFECTS ARE FOUND IN EQUIPMENT TESTED, CORRECTION OF SUCH DEFECTS SHALL COMMENCE **FORTHWITH** AND SHALL BE COMPLETED AS SOON AS POSSIBLE, BUT IN EVERY CASE WITHIN 30 DAYS OF INITIAL TEST. THE F-340RT SHALL BE USED TO DOCUMENT THE RETEST OF DEFECTS FOUND IN SECTION III. A COPY OF SECTION III OF THIS REPORT SHALL BE ATTACHED TO THE F-340RT PRIOR TO SUBMITTING TO THE FIRE DEPARTMENT.

THIS SECTION TO BE FILLED OUT BY THE CERTIFIED TESTER**NOTIFICATION TO RESPONSIBLE FIRE STATION OR INSPECTION UNIT (MINIMUM 2 FULL WORKING DAYS PRIOR TO THE TEST)****RESPONSIBLE FIRE STATION OR INSPECTION UNIT**

☐ FIRE STATION #: _____ NOTIFICATION MADE TO: (Print): _____.
☐ FIRE PREVENTION UNIT: Drop-down menu NOTIFICATION MADE TO: (Print): _____.
 DATE NOTIFIED: _____.

THE ORIGINAL AND ONE COPY OF THIS REPORT SHALL BE SENT **DIRECTLY** TO THE RESPONSIBLE FIRE STATION OR FIRE PREVENTION UNIT AND ONE COPY SENT TO THE CHIEF'S REGULATION NO. 4 UNIT WITHIN 7 DAYS.

REPORT SUBMITTAL INFORMATION: I ☐ emailed or ☐ mailed (U.S. Mail) this report to the Fire Station/ Fire Prevention Unit shown above at the following address: _____ on _____.

FIRE DEPARTMENT OFFICIAL USE ONLY

I HAVE REVIEWED AND DISCUSSED THIS REPORT WITH: _____ ON: _____
 (OWNER/OWNER'S REPRESENTATIVE) (DATE)

Owner/Representative Signature: _____

LAFD Member's Name (Print): _____ Member's Signature: _____

Fire Department Member's Work Assignment: _____ Telephone Number: _____

Fire/Life Safety Notice to correct defects issued ☐ No ☐ Yes Notice number: _____ Date of Notice: _____



LOS ANGELES FIRE DEPARTMENT
FIRE PROTECTION EQUIPMENT PERFORMANCE REPORT
 THIS PAGE BY ITSELF IS NOT A COMPLETE REPORT

PAGE _____ of _____

DATE(S) _____ TEST SITE ADDRESS: (STREET NUMBER AND STREET NAME) _____ FIRM OR D.B.A. _____

EQUIPMENT TESTED:

ENTER SYSTEM HERE**Section I - Building Description:****CHARACTERISTICS**PRIMARY OCCUPANCY TYPE Drop-down menuSECONDARY OCCUPANCY TYPE Drop-down menu

TYPE OF BUSINESS CONDUCTED (CHECK ALL THAT APPLIES):

- ☐ APARTMENT/CONDO
☐ BAR/RESTAURANT
☐ CHURCH
☐ COLLEGE/UNIVERSITY
☐ DAY CARE
☐ DETENTION FACILITY
☐ GROUP HOME
☐ HOSPITAL
☐ HOTEL/MOTEL
☐ MEDICAL OFFICE/CLINIC

- ☐ MUSEUM
☐ PARKING STRUCTURE
☐ OFFICE SPACE
☐ REPAIR GARAGE
☐ RETAIL
☐ SKILLED NURSING
☐ TELECOMMUNICATION
☐ THEATRE
☐ WAREHOUSE
☐ OTHER: _____

FIRE CONTROL ROOM: YES ☐ NO ☐ELEVATOR INFORMATION: CARS / BANKS:
 PASSENGER _____
 FREIGHT _____
 PARKING _____

NUMBER OF STAIRWAYS: _____

FIRE PUMP(S): YES ☐ NO ☐

LOCATION: _____

EMERGENCY GENERATOR(S): YES ☐ NO ☐

LOCATION: _____

PARKING STRUCTURE:

UNDERGROUND ☐ DETACHED ☐ ATTACHED ☐

NUMBER OF LEVELS BELOW GROUND: _____

TYPES OF OCCUPANCIES BELOW GROUND: _____

UNIQUE PROPERTY FEATURES: _____

Section II – System Description:

Give a complete and thorough description of the system/equipment. The information in this section shall include the following information (as applicable): Date of system Installation. Name of Manufacturer, Model Number, Panel Location(s), Type of Devices/Components/Valves and their Locations.

TESTER'S NAME & CERTIFICATE # _____

EXPIRATION DATE _____

PHONE NUMBER OF TESTING AGENCY: _____

PAGE of

335

LOS ANGELES FIRE DEPARTMENT
FIRE PROTECTION EQUIPMENT PERFORMANCE REPORT
THIS PAGE BY ITSELF IS NOT A COMPLETE REPORT

PAGE of

INITIAL TEST DATE(S)		TEST SITE ADDRESS: (STREET NUMBER AND STREET NAME)		FIRM OR D.B.A.		PAGE		OF	
SECTION IV – TESTING PROCEDURES: ENTER SYSTEM HERE									
All testing procedures below were performed in accordance with the Los Angeles Fire Department Chief's Regulation No. 4 requirements and applicable testing standards.									
ITEM #		DESCRIPTION							
1.0 NOTIFICATION									
1.1		Fire Department Fire Prevention Unit/District Inspector or Fire Station and Chief's Regulation No. 4 Unit notified a minimum two full working days prior to testing by email (where appropriate).				<input type="checkbox"/>		<input type="checkbox"/>	
						YES		NO	
1.2		Fire Department dispatch, supervising station, & building occupants notified prior to the start of the test (if necessary to activate any notification appliances).				<input type="checkbox"/>		<input type="checkbox"/>	
						YES		NO	
						PASS		FAIL	
N/A									
2.0 TESTING PROCEDURES: Clearly indicate each testing process which shall include (1) What was checked prior to and during testing. (2) Equipment used during the test. (3) The requirement(s) for passing each segment of testing. (4) Method used to perform the test. Minimum/Maximum times, static & residual pressures, flow rates, sound levels, battery replacement dates, automatic and manual requirements, date system installed (as applicable)									
EXAMPLES		2.1 System checked for leaks 2.2 System installed pre-1948 - Required Flow -20 GPM @ 8PSI 2.3 Pump tested at 0% (churn) 50% 100% 7 150% of rated capacity 2.4 Pressure of pump is required to be 65% of the rated head/pressure @ 150% of rated capacity/flow 2.5 Methane Gas detector activated fire alarm @ Min. 15DBA above ambient. and was at least 75dba and not more than 110 dba.				<input type="checkbox"/>		<input type="checkbox"/>	
NOTE:		Information is limited to two lines per field. Use short and concise sentences.							
2.1						<input type="checkbox"/>		<input type="checkbox"/>	
2.2						<input type="checkbox"/>		<input type="checkbox"/>	
2.3						<input type="checkbox"/>		<input type="checkbox"/>	
2.4						<input type="checkbox"/>		<input type="checkbox"/>	
2.5						<input type="checkbox"/>		<input type="checkbox"/>	
2.6						<input type="checkbox"/>		<input type="checkbox"/>	
2.7						<input type="checkbox"/>		<input type="checkbox"/>	
2.8						<input type="checkbox"/>		<input type="checkbox"/>	
TESTER'S NAME & CERTIFICATE #				EXPIRATION DATE		PHONE NUMBER OF TESTING AGENCY:			



LOS ANGELES FIRE DEPARTMENT
FIRE PROTECTION EQUIPMENT PERFORMANCE REPORT
 THIS PAGE BY ITSELF IS NOT A COMPLETE REPORT

PAGE _____ of _____

INITIAL TEST DATE(S)	TEST SITE ADDRESS: (STREET NUMBER AND STREET NAME)	FIRM OR D.B.A.		
SECTION IV – TESTING PROCEDURES: ENTER SYSTEM HERE (CONTINUED)				
ITEM #	DESCRIPTION	PASS	FAIL	N/A
2.9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.10		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.11		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.12		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.13		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.14		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.15		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.16		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.17		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.18		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.19		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.20		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.21		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.22		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.23		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.24		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.25		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Areas/ Devices/ Appliances NOT accessible for testing:</u>				<input type="checkbox"/>
NOTE: All findings indicating “Fail” shall be listed in Section III “FINDINGS” of the LAFD F-340R “Fire Protection Equipment Performance Report” and shall include the appropriate <u>Item Number</u> , <u>Description</u> , and <u>Location</u> from this section (Section IV).				
<input type="checkbox"/> END OF REPORT.				
TESTER'S NAME & CERTIFICATE #		EXPIRATION DATE	PHONE NUMBER OF TESTING AGENCY:	



LOS ANGELES FIRE DEPARTMENT FIRE PROTECTION EQUIPMENT SUPPLEMENTAL INFORMATION

PAGE _____ of _____

DATE(S) _____

TEST SITE ADDRESS: (STREET NUMBER AND STREET NAME) _____

FIRM OR D.B.A. _____

EQUIPMENT TESTED:

SECTION V - SUPPLEMENTAL INFORMATION- FIRE CODE/BUILDING CODE ISSUES (OPTIONAL)

Use this form to report potential fire or building code problems that may require follow-up by a Fire or Building Official.

DO NOT use Section V to report systems or equipment DEFECTS pertaining to the address on this F-340R report.

When Section V pages are provided, Fire Department personnel **shall** take the appropriate action to resolve the issue(s), which may include writing a Notice of Violation or contacting the Department of Building and Safety.

NOTE: Fire Department personnel shall remove this section prior to forwarding the 340R Fire Protection Equipment Performance Report to the building owner/ owner's representative.

TESTER'S: NAME _____

CERTIFICATE # _____

EXPIRATION DATE _____

PHONE NUMBER OF TESTING AGENCY: _____

(STATE) _____

(ZIP) _____



**LOS ANGELES FIRE DEPARTMENT
FIRE PROTECTION EQUIPMENT PERFORMANCE REPORT
RE-TEST COVERSHEET**

F-340RT 04-04-2012

Section I- TEST SITE INFORMATION

TOTAL HOURS _____

PAGES 1 OF _____

TEST SITE ADDRESS: (STREET) _____		(CITY) _____	(STATE) _____	(ZIP) _____	TEST SITE PHONE: _____
OCCUPANCY TYPE: _____	NUMBER OF STORIES: _____	YEAR BUILT: _____	CONSTRUCTION TYPE: Drop-down menu		SQUARE FOOTAGE: _____

RESPONSIBLE PARTY

NAME (LAST, FIRST, MI) _____		TITLE: _____		FIRM OR D.B.A. _____	
MAILING ADDRESS: (STREET) _____		(CITY) _____	(STATE) _____	(ZIP) _____	PHONE: _____

Section II- RETEST INFORMATION

RETEST DATE (S) _____	TESTERS'S COMPANY NAME _____	PHONE: _____
ADDRESS OF TESTING COMPANY: (STREET) _____		(CITY) _____ (STATE) _____ (ZIP) _____

EQUIPMENT RETESTED (ONE SYSTEM ONLY): _____

SEE SECTION III ATTACHED

☐ **FC/BC**

The Chief's Regulation No. 4 unit was notified on _____ at lafdreg4@lacity.org.

The information below shall be found in the following sections.

SECTIONS:

I. TEST SITE INFORMATION

II. RETEST INFORMATION

III. COPY OF SECTION III (FINDINGS) FROM THE INITIAL PERFORMANCE REPORT WHICH CONTAINS THE LIST OF DEFECTS THAT HAVE BEEN REPAIRED AND RETESTED.

V. FIRE CODE/ BUILDING CODE ISSUES (OPTIONAL)

I HEREBY CERTIFY THAT ALL NECESSARY MAINTENANCE AND REPAIRS TO THE EQUIPMENT LISTED IN SECTION III OF THIS REPORT HAVE BEEN MADE IN COMPLIANCE WITH THE LOS ANGELES MUNICIPAL CODE AND ARE FULLY OPERABLE.

TESTER'S NAME & CERTIFICATE # _____	EXPIRATION DATE _____	TESTER'S SIGNATURE _____	FIRE DEPARTMENT WITNESS (NAME & ASSIGNMENT) _____
-------------------------------------	-----------------------	--------------------------	---

THIS SECTION TO BE FILLED OUT BY THE CERTIFIED TESTER

NOTIFICATION TO RESPONSIBLE FIRE STATION OR INSPECTION UNIT (MINIMUM 2 FULL WORKING DAYS PRIOR TO THE TEST)

RESPONSIBLE FIRE STATION OR INSPECTION UNIT

☐ FIRE STATION #: _____ NOTIFICATION MADE TO: (Print): _____

☐ FIRE PREVENTION UNIT: Drop-down menu NOTIFICATION MADE TO: (Print): _____

DATE NOTIFIED: _____

THE ORIGINAL AND ONE COPY OF THIS REPORT SHALL BE SENT **DIRECTLY** TO THE RESPONSIBLE FIRE STATION OR FIRE PREVENTION UNIT AND ONE COPY SENT TO THE CHIEF'S REGULATION NO. 4 UNIT WITHIN 7 DAYS.

REPORT SUBMITTAL INFORMATION: I ☐ emailed or ☐ mailed (U.S. Mail) this report to the Fire Station/ Fire Prevention Unit shown above at the following address: _____ on ____.

FIRE DEPARTMENT OFFICIAL USE ONLY

I HAVE REVIEWED AND DISCUSSED THIS REPORT WITH: _____ **ON:** _____
(OWNER/OWNER'S REPRESENTATIVE) (DATE)

Owner/Owner Representative Signature: _____

LAFD Member's Name (Print): _____ **Member's Signature:** _____

Fire Department Member's Work Assignment: _____ **Telephone Number:** _____

FIRE PROTECTION EQUIPMENT

PERFORMANCE CERTIFICATION F-340RT

(RE-TEST)

INITIATED BY: Chief's Regulation No. 4 Certified Tester

NUMBER OF SECTIONS: 3- Sections I-III (Section III from the initial test report) required
(Section V "Supplemental Information" form optional)

PERIOD RETAINED: Five years or until next certification, in Fire Station or Fire Prevention Inspection Unit file

FORWARD TO: Fire Station or Fire Prevention Unit responsible for the maintenance of all inspection records for the occupancy

REFERENCE: L.A.M.C. 57.01.35, Chief's Regulation No. 4

ROUTING: Certified Tester to Fire Station or Fire Prevention Unit

RETEST: The Certified Tester shall verify that all defects indicated in Section III (Findings) of the initial performance test have been repaired prior to performing a retest. The retest results shall be documented on the copy of Section III from the initial test and shall be attached to F-340RT retest report. The original plus one copy shall be sent directly to the Fire Station or Fire Prevention Unit and a second copy shall be sent to the Chief's Regulation No. 4 Unit.

APPLICATION:

This form is used by Chief's Regulation No. 4 Certified Testers to document the results of fire protection equipment performance retest in accordance with Chief's Regulation No. 4 and L.A.M.C. 57.01.35. This form provides certification that a required retest has been performed. It shall be used as a cover sheet to the F-340R Section III (Findings) where fire protection equipment defects are documented after an initial performance test.

1. When a retest is required, the Certified Tester shall obtain a copy of the F-340R Section III (Findings). In all cases, this copy shall have the date of the initial test, and the name, certification number, signature, and phone number of the Certified Tester who performed the initial test.
2. New defects shall not be added to this form. If new defects are discovered on the system or equipment during a retest, the Certified Tester shall contact the Fire Inspector or Fire Station member responsible for the address as soon as possible but in no case later than 24 hours and be guided by their instruction.
3. If the Fire Station member is not available, the Certified Tester shall contact the Chief's Regulation No. 4 Unit for direction or instruction.

For issues such as "violations" pertaining to the Fire Code or the Building Code, the Certified Tester may report the issue by attaching a Section V "Supplemental Information" form to the F-340RT behind Section III.

Note: In every case the Fire Department member shall investigate and issue a Notice of Violation or contact LADBS as necessary when a Section V form is attached to any report.

FIRE PROTECTION EQUIPMENT PERFORMANCE CERTIFICATION F-340RT (RETEST)

4. The role of the Certified Tester is limited to testing the performance of fire protection equipment and submitting the results to the Fire Department. It is not intended to give the Certified Tester the authority to cause anyone to take action with regard to the test results.
5. Changes or alterations to the format or appearance of this document are strictly prohibited.
6. Except for gray shaded areas and signature lines, all entries shall be computer generated or type written.
7. All submitted reports shall be stapled in the upper left hand corner (do not paperclip).

COMPLETING THE FORM (Use Tab, Arrow Keys, or Pointing Device to advance from field to field)

TOTAL HOURS: Enter the total number of "Hours" expended to complete testing (i.e. an 8 hour job may take 1 person 8 hours but only 4 hours with 2 people. (The total hours for both scenarios are 8 hours).

PAGE ____ OF ____: Enter the current page number and the total pages of this report. (Include this cover page and Section III page(s) but do not include Section V pages)

Section I – TEST SITE INFORMATION

TEST SITE INFORMATION: Enter the building number, street name, city, state, zip code and telephone number of the occupancy being tested, the year the building was built, the construction type. and the building square footage

Note: Year of the building and square footage can be obtained from various programs online such as Department of City Planning's Zone Information and Map Access System (Zimas) at: <http://zimas.lacity.org>

RESPONSIBLE PARTY: Enter the full name, title of the person responsible for ensuring life safety at the test site location (this person may not be located onsite), name of business, and the address where the business receives mail and the telephone number where the responsible party can be contacted.

Section II – RETEST INFORMATION

INITIAL TEST INFORMATION: Enter the date(s) of the retest, testing company name (no logos permitted), company telephone number, building number, street name, city, state and zip code.

EQUIPMENT RE-TESTED: Enter the system type that is being re-tested. It shall correspond to the Section III pages that follow. There shall be only one (1) system per re-test form.

FC/BC: The Certified Tester should mark this box to indicate that important information concerning Fire Code or Building Code issues have been attached to the F-340RT as Section V "Supplemental Information". This section is not part of the F-340RT report. This section provides the Tester an opportunity to communicate additional information or concerns closely related to Fire Protection Equipment Performance testing but are beyond the scope, authority and/or testing parameters of the Certified Tester.

THE CHIEF'S REGULATION NO. 4 UNIT WAS NOTIFIED ON: Indicate the date the Chief's Regulation No. 4 Unit was notified.

Note: Notification is required a minimum of two full working days prior to the day of the test (the day of notification is not counted as a full day).

FIRE PROTECTION EQUIPMENT

PERFORMANCE CERTIFICATION F-340RT (RETEST)

TESTERS NAME, CERTIFICATE NUMBER & EXPIRATION DATE: Enter the Certified Tester's first and last name, Chief's Regulation No. 4 Certificate of Fitness Number and certificate expiration date.

TESTER'S SIGNATURE: The Certified Tester must sign all reports. The signature must match the signature on the Certificate of Fitness Identification Card. A digital signature may be used with written approval from the Chief's Regulation No. 4 Unit in accordance with LAFD policies and procedures.

FIRE DEPARTMENT WITNESS: The Certified Tester shall enter the name of the Fire Department Member that witnessed the test (when applicable). If the Fire Department member only witnessed part of the test, the word "partial" shall be added to the box.

NOTIFICATION TO RESPONSIBLE FIRE STATION OR INSPECTION UNIT: Select the Fire Station or Fire Prevention Unit responsible for fire prevention enforcement at the test site. Print a persons name or Fire Station, or Fire Prevention Bureau (FPB) Unit email address where notification was made and the date of notification.

Note: Accurate inspection responsibility must be verified to be correct to enter an e-mail address or when leaving a "voice message" instead of a name.

Note: Notification is required a minimum of two full working days prior to the day of the test (The day of notification is not counted as a full day).

REPORT SUBMITTAL INFORMATION: Select the type of delivery used to submit the report. Enter the address of the Fire Station or Fire Prevention Unit and the date the report was mailed.

Note: Fire Station and Fire Prevention Unit addresses may be obtained online from the LAFD Fire Prevention website at: <http://www.lafd.org>

I HAVE REVIEWED AND DISCUSSED THIS REPORT WITH: The Fire Department Member who has the inspection responsibility for the Test Site shall discuss the results of the test with the owner/owner's representative and shall enter the name of the person and the date of the conversation.

LAFD MEMBER'S NAME: The Fire Department Member who discussed the results of the test with the owner/owner's representative shall print his/her name on the line provided.

LAFD MEMBER'S SIGNATURE: The Fire Department Member who discussed the results of the test with the owner/owner's representative shall sign his/her name on the line provided.

LAFD MEMBER'S WORK ASSIGNMENT AND TELEPHONE NUMBER: The Fire Department Member who discussed the results of the test with the owner/owner's representative shall print his/her work assignment and telephone number where he/she is assigned.

Section III – Findings:

When defects are found, Section III from the initial performance test shall be copied and attached to the F-340RT. After repairs are made and a successful retest is performed, the shaded areas shall be completed to indicate that the item has passed the retest. A copy of Section III shall be attached to the F-340RT retest form in all cases (do not submit an F-340RT and Section III where any failure has not been repaired and retested).

The Certified Tester that performed the initial performance test should have supplied information in the following areas of Section III:

FIRE PROTECTION EQUIPMENT PERFORMANCE CERTIFICATION F-340RT (RETEST)

DEFECTS FOUND: If this box is marked it indicates that defects were found during the initial performance test.

DEFECT #: All defects found and documented during the initial performance test.

ITEM # FROM SECTION IV: This item number must coincide with the corresponding "Item Number" from Section IV "Testing Procedures" of the initial F-340R Report.

DESCRIPTION: Describes in detail how or why the component or devices did not operate as it was intended in Section IV "Testing Procedures" of the initial F-340R Report.

LOCATION: Indicates where the device or component is located on the property (i.e. Fire Door first floor adjacent to room number 101 or flow switch in stair no.1 - 5th floor).

RETEST ONLY: This section is to be filled out by the Certified Tester who performed the retest on any item(s) listed in this section.

PASS: Indicate only the items that have been repaired and retested and passed. A retest is not considered complete until all of the defective items have passed the retest.

Note: In some cases all items in this list may not have been repaired and/or retested. The F-340RT shall not be submitted to the Fire Department until all defects have been repaired and have passed the retest.

SEE ADDITIONAL SECTION III PAGES: If this box is marked, Section III of the initial F-340R should have contained more than one page. Therefore, Section III of the F-340RT shall contain an equal number of pages as the initial F-340R.

INITIAL TEST PERFORMED BY: The information and valid signature of the Certified Tester who performed the initial test shall be present in this section of this form for a retest to be valid.

RETEST PERFORMED/DATE: Indicate that a retest was performed and the date of the retest.

Section V (when attached) – Supplemental Information – Fire Code/ Building Code Issues (optional):

This section is not a required section of any F-340R "Fire Protection Performance Report" or F-340RT retest report. All testing criteria for the performance of fire protection equipment are contained in Sections I through IV. Testers who encounter suspected fire code issues or building code issues such as missing FDC caps, missing signs, storage on balconies, areas not protected by fire sprinklers, etc. can use this form to alert the Fire Department. When Section V pages are provided, Fire Department personnel shall take the appropriate action to resolve the issue(s), which may include writing a Notice of Violation or contacting the Department of Building and Safety or the appropriate Authority Having Jurisdiction.

Note: Fire Department personnel shall remove this section prior to forwarding the F-340R "Fire Protection Equipment Performance Report" or F-340RT retest report to the building owner/owner's representative.

For Chief's Regulation No. 4 Purposes the Certified Tester only needs to know the Occupancy Group not the



(Not High-rise)

The Weakest Link in the Chief's Regulation No. 4 Fire Protection Testing Program

The intent of this article is to provide insight and understanding of a frequently misunderstood part of the Chief's Regulation No. 4 Testing (Reg. 4) Program.

Fire Department Notification and F-340R Performance Report Submittal

Proper Fire Department (F.D.) Notification and F-340R/F-340RT report distribution/submittal is vital to the success of the Chief's Regulation No. 4 (Reg. 4) program. Certified Testers must understand the Los Angeles Fire Department fire prevention and record keeping system in order make proper F.D. notifications and to submit reports to the correct F.D. entity.

All Testers are required to educate the people in their company that have been given the responsibility to perform these duties. (i.e. Dispatchers, Schedulers, Report Writers/ Distributors)

Contrary to what most people think, the Reg. 4 Unit does not keep records of any tests, inspections or reports. Therefore it is imperative that each Tester notifies the proper Fire Prevention Inspection Unit (FPU) and District Inspector or Fire Station (FS) and the Reg. 4 Unit a minimum of two full working days prior to conducting an initial test or re-test and anytime a system is inoperable/out of service and requires a fire watch.

Hopefully the following description will provide some clarity on this subject.

The Los Angeles fire department has approximately 106 fire stations and approximately 18 fire prevention units. Each fire station and each Fire Prevention Unit is assigned a group of buildings to inspect for fire code compliance and is required to

maintain all inspection and testing records for each building within that group.

Note: For inspection purposes, buildings are assigned by the size and type of occupancy (or type of business conducted). (See the Reg. 4 Overview document online @ http://lafd.org/prevention/reg4/reg4_study.html for a complete breakdown)

Fire Stations are staffed by firefighters and are assigned a Fire Station Number (e.g. F.S. 3) and are responsible to respond to all emergencies that occur within their geographical district, but will not inspect every building within their district. Fire stations generally inspect the smaller buildings within their district.

Fire Prevention Units are staffed by fire inspectors and are assigned to a Unit Name based on a type of occupancy (e.g. a school, institution, large industrial warehouse, large commercial building etc.) and are responsible to inspect all buildings that match the specified occupancy type. Fire Prevention Units operate out of one of four different business office locations. (Central LA, West LA, Harbor, & the Valley) Each Fire Inspector is assigned a group of buildings/occupancies of the same type. Each group is called a Fire Prevention District. (Note: **This district is not always defined by a specific geographical boundary**).

Each district is assigned an office cubicle/desk, filing cabinet and a number (E.g. District 235). Each Inspector is assigned to a District Number and is identified by that district number.

Therefore Inspector 235 is responsible for all inspection activities and records for district 235.

When calling the FS or FPU to give prior notification of a pending test, or to report the need for a fire watch, always confirm that the FS or FPU you are calling is the custodian of the fire prevention records for the address in question and get the name of the person to whom you spoke.

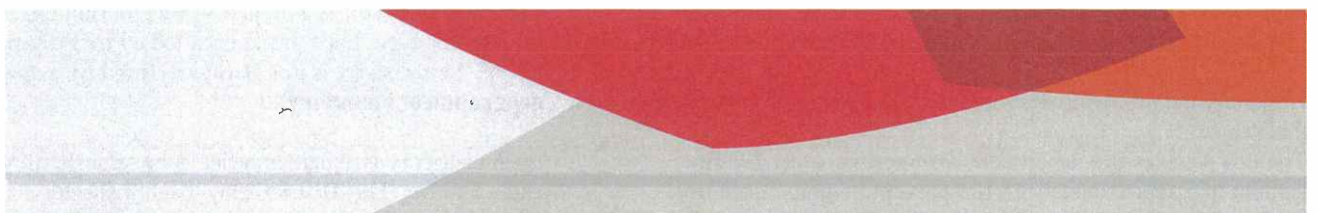
The information obtained from the FS or FPU is required to be input into the appropriate fields on the F-340R or f-340RT.

As you can see there is more to the Reg. 4 testing program than simply testing. It is also proper fire department notification and report submittal and accurate record keeping as well. Staying in contact with the correct FS and/or FPU (who inspects and maintains inspection and testing records for each building) ensures fire safety issues are addressed in a timely manner and assists the fire department with accomplishing our goal of gaining compliance and saving lives and property in the most efficient manner.

Remember, fire attack begins with fire prevention.



The occupancy types above applies to the "major use" within the building e.g. a High-rise office building with a restaurant on the 1st floor is





FIRE PROTECTION SYSTEMS AND EQUIPMENT and REQUIRED TESTING INTERVALS

WATER BASED FIRE PROTECTION SYSTEMS:

- AUTOMATIC SPRINKLER SYSTEMS Wet
- PRE-ACTION SYSTEM
- (Currently part of Automatic Sprinkler, but requires additional interview and Field Test)
- DRY PIPE/ DELUGE & PRE-ACTION SYSTEMS
- (Currently part of Automatic Sprinkler, but requires additional interview and Field Test)
- CLASS I STANDPIPE SYSTEMS (Dry)
- CLASS II STANDPIPE SYSTEMS* (Wet)
- CLASS III / COMBINATION STANDPIPE SYSTEMS (Combination of Class I and Class II systems)
- COMBINED STANDPIPE AND SPRINKLER SYSTEMS*
- (includes Pressure Reducing Valves & Automatic Sprinkler Systems)
- STATIONARY FIRE PUMPS

FIRE ALARM AND SUPERVISING STATION ALARM SYSTEMS:

- COMPLEX FIRE ALARM SYSTEMS Includes:
 - Basic/General Fire Alarm
 - Emergency Voice Evacuation Systems)
 - One Way Building Communication Systems (for building Occupants)
 - Two Way Communication Systems (Firefighter Phones)
 - Fire /Life Safety Control Functions of FACU

SUPERVISING STATION ALARM SYSTEMS (Includes)

- Digital Alarm Communication Transmitters
- Multiple Communication Technologies
 - I.P. Wireless Plus GSM
 - Telephone line plus I.P. Wireless
 - Telephone line plus GSM

SPECIAL EXTINGUISHING SYSTEMS:

- UL 300 SYSTEM (currently not available) .

EMERGENCY AND STANDBY POWER SYSTEMS:

- **EMERGENCY GENERATOR SYSTEMS**
- **STORRED ELECTRICAL ENERGY SYSTEMS** (Battery Back up)
- *Emergency Ballasts*
- Central Battery Systems
- Uninterrupted Power Supplies (UPS)



FIRE PROTECTION SYSTEMS AND EQUIPMENT and REQUIRED TESTING INTERVALS

01/10/14

MISCELLANEOUS CATEGORIES:

AUTOMATIC ELEVATORS: Emergency Operation (PHASE I AND II)
(Requires a California State Conveyance License)

AUTOMATIC ELEVATORS (WITNESS ONLY):

(Allows Certified Elevator Witness Only Testers to witness and verify proper testing performed by a Conveyance Mechanic and submit the report to LAFD)

AUTOMATIC CLOSING FIRE ASSEMBLIES: (Does not include Self Closing Doors)

- Swinging Fire Doors
- Magnetically Held Swinging Fire Doors
- Horizontally Sliding /Inclined Track
- Horizontally Sliding /Level Track
- Vertically Sliding Doors
- Rolling Steel Doors
- Fire Shutters
- Service Counter Doors
- Laundry Chutes (includes both automatic and self-closing)
- Trash Chutes (includes both automatic and self-closing)
- Fire Assemblies- with Stand Alone Smoke Detectors (integral or wired) but **not** part of building fire alarm system
- Dumbwaiter Doors
- Fire Windows
- Special Purpose Horizontally Sliding Accordion/Folding Doors:

FIRE ESCAPE ASSEMBLIES

PRIVATE HYDRANTS (currently not available)

GAS DETECTION SYSTEMS:

- Methane
- Compressed Natural Gas (CNG)



FIRE PROTECTION SYSTEMS AND EQUIPMENT and REQUIRED TESTING INTERVALS

01/10/14

TESTING INTERVALS:

Annual Test (Initial Test): A full and complete test of the entire system is required within the same month each year. Also known as the system anniversary test date.

Five Year Test: (Initial Test): A full and complete test of the entire system is required within the same month each year. Also known as the system anniversary test date.

Re-test: A retest of all the system components shown in the "List of Defects from the Initial Test. Prior to retesting, all items in the list are required to be repaired by a licensed contractor with a valid contractors license under permit from the authority having Jurisdiction for the type of repair (where required) Repairs and re-tests are required to be completed within 30 days of the date of the Initial Test .All re-tests are required to be performed by any Certified Tester. who holds the proper testing certification

Note: Only the items in the List of Defects are required to be test except in extreme cases)

These intervals are the MAXIMUM allowable time between tests. It is important to note that at the Fire Departments discretion more frequent testing may be required.

ANNUAL TESTS:

- Fire Alarm Systems
- Supervising Station Alarm Systems
- Emergency Power Systems
- Smoke Management Systems
- Fire Escapes Assemblies
- Automatic Elevator Emergency Operations
- Automatic Closing Fire Assemblies
- Gas Detection Systems
- Stationary Fire pumps (Full Flow)
- 2-1/2 Standpipe Hose Valve Pressure Reducing/Regulating Devices (Partial Flow/Exercise & Inspection)

5-YEAR TESTS:

- Automatic Sprinkler Systems:
 - Wet
 - Pre-Action System (Full Flow)
 - Dry Pipe/ Deluge & Pre-Action Systems (Full Flow)
- Class I Standpipe Systems (Dry)
- Class I Standpipe Systems* (Wet)
- Class III / Combination Standpipe Systems (Combination Of Class I And Class II Systems)
- Combined Standpipe and Sprinkler Systems*
(Includes Pressure Reducing Valves (Full Flow)



**CHIEF'S REGULATION NO.4
Procedures &
Testing of
Fire Protection Equipment**

2014 Edition

LOS ANGELES FIRE DEPARTMENT
CHIEF'S REGULATION NO. 4 PROGRAM
TESTING OF FIRE PROTECTION EQUIPMENT

TABLE OF CONTENTS

SECTION 1 - SCOPE.....	1-1
SECTION 2 - DEFINITIONS.....	2-1 - 2-8
SECTION 3 - GENERAL REQUIREMENTS.....	3-1 - 3-4
A. Testing Intervals	
B. Fire Department Notification	
C. General Test Information	
D. Repairs/Retest:	
E. Fire Hose Connections	
F. Gauges	
G. System Tagging	
SECTION 4 - GENERAL TEST PROCEDURES	4-1 - 4-47
A. Automatic Closing Assemblies:Fire Protection/Fire Doors	
B. Elevators,(Automatic), Emergency Operations- Phase I and II	
C. Emergency and Standby Power Systems Generator	
D. Emergency /Standby Power & Stored Electrical Energy (Battery Back Up)	
E. Fire Escape Assemblies	
F. Fire Hydrants (Private)	
G. Fire Alarm Systems, Two Way & One Way Emergency Communications	
H. Fire Pumps (Stationary)	
I. Gas Detection Systems:(Methane)	
J. Pressure Reducing /Regulating Hose Valves: (PRV'S)	
K. Refrigerant Discharge Systems	
L. Smoke Management Systems	
M. Sprinkler Systems, Automatic: Wet,dry,Pre-Action, Deluge & Foam	
N. Standpipe Systems	
O. Supervising Station Alarm Systems	
SECTION 5 - APPLICATION.....	4-37
APPENDIX - GUIDLINES FOR MATRIX SEQUENCE OF OPERATIONS	

SECTION 1 SCOPE

The provisions of this regulation shall govern the minimum requirements for the periodic testing and repair of Fire Protection systems and equipment. The type of systems and equipment addressed by this regulation include, but are not limited to Automatic Fire Sprinkler Systems, Supervising Station Alarm Systems, Elevator Emergency Service, Emergency and Standby Power Systems, Fire Alarm Systems (which includes Emergency Voice Fire Alarm Signaling Systems), Fire Escape Assemblies, Fire Hydrants (Private), Automatic Closing Fire Protection Assemblies, Stationary Fire Pumps, Gas Detection Systems, Pressure Regulating Valves, Refrigerant Discharge Systems, Smoke Management Systems, and Standpipe Systems. The intent is to ensure that this equipment is maintained in proper operating condition as accepted and properly installed, in accordance with the generally accepted practices, and the code in effect at the time of installation.

It is not the intent of this regulation to limit or restrict the use of other testing or maintenance methods that provide an equivalent level of system integrity and performance as detailed in this regulation, nor to require systems to be upgraded to current building codes, or evaluated for building or fire code compliance.

SECTION 2

DEFINITIONS

- 1. Addressable System:**
A Fire Alarm System with discrete identification that can have its status individually identified, or that is used to individually control other functions.
- 2. Alarm Signal:**
A signal initiated by a fire alarm initiating device indicating an emergency requiring immediate action, such as a signal indicative of fire.
- 3. Analog System:**
A system that transmits and receives signals indicating varying degrees of condition as contrasted with a conventional (basic fire alarm) initiation device, which can only indicate an on/off condition.
- 4. Annunciator:**
A unit containing two or more indicator lamps, alphanumeric displays, or other equivalent means in which each indication provides status information about a circuit, condition, or location.
- 5. Approved:**
A system or procedure acceptable to the "Authority Having Jurisdiction." (AHJ)
- 6. Authority Having Jurisdiction (AHJ):**
The "authority having jurisdiction" is the organization, office, or individual responsible for approving equipment, an installation, or a procedure.
- 7. Automatic Closing Device (Fire Protective):**
A device attached to a fire protection assembly that allows the assembly to close when activated as a result of heat, smoke, or other products of combustion.
- 8. Automatic Fire Extinguishing System:**
An approved self-contained system of devices and equipment, which automatically detects a fire and discharges an approved fire extinguishing agent onto or in the area of a fire. As regulated by Division 5 and 141 of the Los Angeles Fire Code (Except Automatic Sprinkler Systems).
- 9. Automatic Fire Sprinkler Systems:**
An approved integrated system of piping, valves, devices, automatic sprinkler heads and water supply which automatically detects a fire and discharges water in the area of the fire.

Automatic Fire Sprinkler Systems: (continued)

- (a) **Wet Pipe** A Sprinkler system employing automatic sprinklers attached to a piping system containing water and connected to a water supply so that water discharges immediately from sprinklers opened by heat from fire
 - (b) **Dry pipe:** A system containing air or nitrogen under pressure, the release of which permits the water pressure to open a valve known as a dry pipe valve. The water then flows into the piping system and out the opened sprinklers.
 - (c) **Pre-action:** A system containing air that may or may not be under pressure, with a supplemental detection system installed in the same areas as the sprinklers. Actuation of the detection system opens the valve that allows water to flow into the piping and to be discharged from any sprinklers that are open.
 - (d) **Deluge:** A system employing open sprinklers attached to a piping system connected to a water supply through a valve that is opened by the operation of a detection system installed in the same areas as the sprinklers. When the valve opens, water flows into the system and discharges water from all sprinklers attached to the piping.
- 10. Automatic Initiating Device:**
A device designed to detect the presence of fire or smoke and initiate an evacuation alarm.

SECTION 2**DEFINITIONS****11. Basic Fire Alarm:**

A conventional system of components and circuits arranged to monitor and annunciate the status of fire alarm or supervisory signal-initiation devices and can only indicate an on/off condition.

12. Building Code Issues:

Any item outside the scope of the Chief's Regulation No. 4 testing requirements as indicated in Section IV of the F-340R (Fire Protection Equipment Performance Report) that requires follow-up from the Department of Building and Safety or LAFD Construction Services Unit to determine if an item or component was installed correctly or if additional installation is required.

13. Building Description:

Detailed information that is necessary to identify a building's occupancy; size, type, use and construction type.

14. Building Fire Control Room/Station: (FCR)

A specific room or area designated as the principal point of annunciation for the Fire Protective Signaling System and all associated equipment, systems and devices.

15. Certified Tester:

An individual certified by the Los Angeles Fire Department to perform testing of fire protection equipment and systems. The tester must be certified on the individual system for which he/she is testing.

NOTE: Companies are not certified. Only the individual Tester holds the certification.

16. Complex Fire Alarm System:

A system of electrical devices and circuits installed, arranged and maintained to monitor and transmit varying degrees of system status and conditions and is used to control numerous auxiliary fire life safety control functions which are typically found in High-rise and other large buildings

17. Defect: (Fire Protection System/Equipment Defect)

A problem with a fire protection system, equipment, or component that causes it to operate improperly as opposed to an item or condition that is not part of the fire protection system or equipment that may interfere with the intended effect of system.

18. Elevator, Automatic:

Elevators with automatic operation and power-operated hoistway doors and equipped with emergency operations "Phase I" recall and in most cases "Phase II" firefighter (override) emergency service.

19. Elevator Lobby Locking System:

An approved fail-safe method of locking elevator lobby doors that lead out of an elevator lobby.

20. Emergency Communication Systems "Two Way" (Firefighter Phones) and "One Way" Voice Evacuation**(a) Fire Department Communication System:**

A two-way sound-powered or amplified telephone system capable of communicating between the building fire control room/station and all required locations in the building

(b) Emergency Voice Alarm Signaling System:

A one-way system providing communication between the building fire control room/station and all areas of the building where provided.

(c) Required Telephone:

A telephone for fire department use with controlled access to the public telephone system when required. (Verified during fire department fire life/safety inspection).

Note: Emergency Communications Systems are tested during the annual fire alarm test

SECTION 2**DEFINITIONS****21. Emergency and Standby Power Systems:**

Special electrical wiring and equipment, which are required to be operational during interruptions of the normal electrical supply to the building,

22. Emergency Power Systems:

The wiring, fixtures, equipment and luminaries in or on a building, which are required to be automatically energized from an alternate on-site electrical supply within 10 seconds after failure of the normal electrical supply.

- (a) Exit signs and exit illumination
- (b) Elevator car lighting
- (c) Fire protective signaling systems

23. Standby Systems:

The part of the normal electrical system which is required to be automatically transferred to, and energized from, an alternate on-site electrical supply, within 60 seconds after failure of the normal electrical supply.

- (a) Electrically driven fire pumps
- (b) Smoke management systems
- (c) Elevators designated for fire department and emergency use
- (d) Lighting circuits supplying elevator lobbies, Building Fire Control Room/Station, generator, and fire pump rooms
- (e) Exterior window washing equipment, including equipment listed in Emergency Power Systems

NOTE: Not all buildings have the equipment shown in the list above. Check the single line diagram to verify all equipment connected to the emergency standby system

24. Fire Department Connection:

A connection through which the Fire Department can pump water into a Standpipe or Automatic Sprinkler System.

25. Fire Escape Assembly:

A secondary exit attached to the exterior wall of a building that is two or more stories in height and which provides emergency egress from the building. Fire escape assemblies shall include stairs, railings, landings, ladders and all associated safety equipment

26. Fire Hydrant :

A connection to a water main for the purpose of supplying water to fire hoses or other fire protection apparatus.

27. Fire Inspection:

A fire /life safety tour of a building performed by Fire Department personnel to ensure fire/life safety compliance with the fire code which may also reveal non compliance with other codes such as Building and Safety, Health and Safety etc...

28. Fire Protection Assembly, - Automatic Closing:

A rated fire assembly, which is maintained in a normally open position including all required hardware, anchorage, frames, sills, and is equipped with an automatic closing device.

29. Fire Protection Assembly: Self-Closing: (Fire department inspection not reg.4 tested)

A rated fire assembly, which is maintained in a normally closed position and equipped with an approved closing device to ensure closing and latching upon release.

30. Fire Protective Signaling System/ Fire Alarm:

A system of electrical devices and circuits, or mechanical devices, installed, arranged and maintained to monitor, transmit, or emit, an audible and/or visual signal indicating an emergency requiring immediate action to safeguard life and property from fire.

SECTION 2**DEFINITIONS****31. Fire Pump (Stationary):**

An assembly that provides water flows and pressure to fire protection equipment. The fire pump assembly includes; the water supply, suction and discharge piping, valves, pump and pump driver, fire pump controller, and all auxiliary equipment appurtenant thereto.

32. Fire Pump Controller:

The cabinet, motors, starter, circuit breaker and disconnects switch, and other control devices for the control of electric motors and internal combustion engines that drive fire pumps.

33. Foam-Water Sprinkler System:

A foam-water sprinkler system is a special system that is pipe connected to a source of foam concentrate and to a water supply and equipped with appropriate discharge devices for discharging an extinguishing agent over the area to be protected.

34. Gas Detection Systems:

A system with all associated equipment and devices capable of continuous monitoring for the presence of a hazardous gas with an audible visual alarm to alert occupants that a hazardous atmosphere exists.

35. High-Rise Building, Existing:

Buildings more than 75 feet (23m) in height (Except hospitals). Building height shall be measured from the lowest level of Fire Department access to the floor of the highest level used for human occupancy and is subject to the provisions of Title 24 of the California Code of Regulations. [Such building will generally have been constructed prior to July 1, 1974.]

36. High-Rise Building, New:

A building more than 75 feet (23m) in height (Except hospitals). Building height shall be measured from the lowest level of Fire Department access to the floor of the highest level used for human occupancy and is subject to the provisions of Title 24 of the California Code of Regulations and Division 118 of the Los Angeles Fire Code. [Such building will generally have been constructed after July 1, 1974.]

37. Hose Station:

A 1½ inch hose connection supplied from a sprinkler system or Class II Wet Standpipe system.

NOTE: Hose connections supplied from a sprinkler system shall not be required to meet the flow requirements of class II hose systems as defined by NFPA 14.

38. Initial Test (Recurring Test)

The initial Reg.4 test is normally a test of the entire system. This test is recurring test required to be performed on an anniversary test date at one or five year intervals depending on the required testing frequency per system. The test results shall show the overall operational status of the entire system.

39. Inspection:

A visual examination of a system or portion thereof to verify that it appears to be in operating condition and that components are in place and in the proper position, or state.

40. LISTED:

Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and whose listed states either that the equipment or material meets appropriate standards or has been tested and found suitable for use in a specified manner.

41. Maintenance:

Repair and service, including periodically recurrent inspections and tests required to keep the Fire Protection Equipment in operative condition at all times.

SECTION 2

DEFINITIONS

42. Manual Pull Station:

A manually operated device used to initiate an alarm to a fire protective signaling system.

39 Performance Certification:

An approved LAFD testing procedure, which allows the Certified Tester to verify that a fire protection system performs as approved and installed in accordance with the code in effect at the time of installation.

40. Pressure Regulating Device:

A device designed for the purpose of reducing, regulating, controlling, or restricting water pressure. Examples include pressure reducing valves, pressure control valves, and pressure restricting devices.

41. Refrigerant Discharge System:

A system designed for manual discharge of a refrigerant agent into the atmosphere or a sewer system.

42. Re-Test: (Partial test)

F-340RT Fire Protection Equipment Performance Retest Report Coversheet is required to be attached to a copy of Section III "List of Defects" from the initial report

All System defects shall be re-tested by a LAFD Certified Tester and submitted to the fire department on the F-340RT Fire Protection Equipment Performance **Retest** Report after all valid repairs have been made. Only the items in the "List of Defects" in section III of the initial F-340R Fire Protection Equipment Performance Report are required to be re-tested. **The entire system is not required to be retested.** If a new problem is found which is not listed in the "List of Defects" The certified tester is required to contact the fire station or fire prevention unit responsible for the building fire prevention and be guided by their instructions.

New items are not permitted to be added to section III after the initial test has been signed by the initial Tester of the system. Where the Re-tester discovers items in section III that are outside the scope of or not required by the reg. 4 program the Re-tester shall not perform a re-test and shall contact the fire station or fire prevention unit responsible for the building fire prevention to have the initial report amended.

In some cases repairs and retests on defects are not performed within 30 days. The date that the items in the list of defects pass shall not change the "Initial Test" anniversary date. A complete test of the entire system shall be performed on or by the next anniversary date in all cases.

In extreme cases where re-test date is scheduled close to the Initial test date, the Reg. 4 Tester shall contact the Fire Inspector or fire station responsible for compliance and be guided by their instructions

NOTE: All items in Section III are required to be repaired prior to fire department submittal. The Tester that performed the initial test is not required to perform the re-test. Re-tests may be performed by any Certified Tester who holds the appropriate certification for the type system to be tested.

43. Sequence of Operation (Matrix):

An approved series of auxiliary control functions produced by the output of a Fire Alarm Control Unit (FACU) when initiated by of a fire alarm initiating device. (See Appendix)

SECTION 2**DEFINITIONS**

44. Shall: A mandatory requirement.

45. Should: A recommendation or that which is advised, but not required.

46. Smoke Management Systems:

- (a) **Airflow Method:** A method of controlling smoke from migrating through fixed openings between smoke control zones using high air velocity through the opening(s) towards the fire zone of origin. The minimum average velocity cannot exceed 200 feet per minute is measured using an anemometer.
- (b) **Building Emergency Smoke Evacuation System:** A ventilation system capable of providing exhaust from specified areas of a building at a rate of not less than six changes of air per hour and releasing directly to the outside atmosphere without re-circulating exhaust to other areas of the building.
- (c) **Exhaust Method:** A method of controlling smoke in large spaces, such as malls and atria through the use of mechanical smoke removal systems. Testing is accomplished with the generally accepted practices to measure air and velocity.
- (d) **Mechanically Ventilated Smoke-proof Enclosure:** An enclosed stairway with vestibules equipped with a ventilation system designed to maintain a smoke-free atmosphere.
- (e) **Pressurization Method:** A method of controlling smoke by containing it within the zone of fire origin by maintaining a minimum 0.05 inch water gauge positive pressure differential between adjacent zones and the zone of fire origin. Testing is accomplished with the use of a magnehelic gauge or incline manometer between adjacent smoke control zones.
- (f) **Pressurized Stair-shaft Ventilation System:** An enclosed stairway equipped with a ventilation system designed to maintain a uniform air velocity discharging to the outside atmosphere while maintaining a positive pressure in the stair-shaft relative to the adjacent areas during fire conditions.

47. Standpipe Systems:

A wet or dry system of piping, valves, hose outlets, and associated equipment installed in a building or structure with outlets located in such a manner that water can be discharged through hose and nozzles. Standpipe systems are classified as follows:

- (a) **Class I:** A standpipe system with or without a direct connection to a water supply equipped with 2½-inch hose outlets for use by Fire Department or trained personnel.
- (b) **Class II:** A standpipe system directly connected to a water supply and equipped with 1½-inch hose outlets with hose and nozzle intended for use by building occupants or by the fire department during initial response.

NOTE: 1½-inch hose connections supplied from a sprinkler system shall not be required to meet the requirements of class II hose systems as defined by NFPA 14.

SECTION 2**DEFINITIONS**

- (c) **Class III Combination:** (A combination of Class I wet and Class II wet systems)
A standpipe system directly connected to a water supply and equipped with 1½-inch hose outlets with hose and nozzle intended for use by trained building occupants or by the fire department during initial response and also equipped with 2½-inch hose outlets for use by Fire Department or trained personnel. Hose connections for Class III systems may be made through 2½-inch hose valves equipped with easily removable 2½-inch by 1½-inch reducers.
 - (d) **Combined Standpipe and Sprinkler :** A system of piping directly connected to a water supply which serves 2½-inch hose outlets equipped with 2½-inch by 1½-inch reducers for use by Fire Department or trained personnel and also supplies water to an Automatic Sprinkler System.
 - (e) **Class H:** A standpipe system directly connected to a water supply equipped with 1½-inch hose outlets with hose and nozzle located on two sides of a helicopter landing site intended for use by Fire Department or trained personnel in fighting fires on helicopter landing sites.
- 48. Supervising Station Alarm System:**
A system consisting electrically operated circuits and equipment, which transmits alarms, trouble and supervisory signals automatically to an approved Supervising Station Service having competent and experienced operators and technicians who, upon receipt of a signal shall take such action as required by the code. Such service is to be controlled and operated by a person, firm, or corporation whose business is to provide, maintain, and monitor supervised fire protection systems.
- 49. Supervisory Signal:**
A signal indicating the need for action in connection with the supervision of guard tours, the fire suppression systems or equipment or the maintenance features of related systems.(AKA tamper or off normal condition or state)
- 50. System Description:**
A concise and approved description of a system, equipment or device as described by the Manufacturer's Operating Manual or designer
- 51. Test:** (Chief's Regulation No. 4 Performance Test)
A procedure used to verify that systems and/or equipment operates as intended, and originally accepted and installed in accordance with the applicable codes and standards at the time of installation.
- 52. Trip Test**
(a) Partial Flow of a Dry pipe, Pre-action or Deluge Valve with the control valve partially open to ensure the valve will open as designed; .but only allows water to enter the vertical portion of the sprinkler riser piping
(b) Full Flow of a Dry pipe, Pre-action or Deluge Valve with the control valve fully open to ensure the valve will open as designed; and may allow water to enter the entire sprinkler system.
- 53. Trouble Signal:**
A signal initiated by the Fire Alarm System, indicative of a fault or abnormal condition of a monitored circuit or component.

SECTION 2**DEFINITIONS****54. Two Way and One Way Emergency Communication System:**

- (a) **Fire Department Communication System:** (Firefighter Phones) A two-way sound-powered or amplified telephone system capable of communicating between the building fire control room/station and all required locations in the building
- (b) **Emergency Voice Alarm Signaling System:** One-way system providing communication between the building fire control room/station and all areas of the building where provided. The alarm override feature briefly silences an alarm in order to communicate to all occupants or selected floors/areas of a building.
- (c) **Required Telephone:** A telephone for fire department use with controlled access to the public telephone system (Verified during LAFD fire inspection).

54. Wet Stacking:

The presence of unburned fuel, carbon, or both in the exhaust system of a diesel engine.

SECTION 3**GENERAL REQUIREMENTS****A. Testing Intervals:**

(1) Annual Test (Initial Test): A full and complete test of the entire system is required within the same month each year. Also known as the system anniversary test date.

- [1] **Elevators, Automatic Emergency Operations Phase I and/or Phase II**
- [2] **Emergency and Standby Power Systems**
- [3] **Emergency Voice Alarm Signaling Systems**
- [4] **Fire Department Communication Systems**
- [5] **Fire Escape Assemblies**
- [6] **Fire Hydrants (Private)**
- [7] **Fire Protection Automatic Closing Assemblies, (fire doors)**
- [8] **Fire Alarm Systems (Fire Protective Signaling)**
- [9] **Fire Pumps**
- [10] **Gas Detection Systems.(Methane)**
- [11] **Hose Valve Pressure Reducing Valves (PRV) (Static/Partial Flow Maintenance)**
- [12] **Smoke Management Systems**
- [13] **Supervising Station Alarm Systems**
- [14] **Automatic Sprinkler -Partial Flow Trip Test - Pre-action, Deluge, and Dry Pipe Valves**

(2) Five Year Test: (Initial Test): A full and complete test of the entire system is required within the same month each year. Also known as the system anniversary test date.

- (a) **Automatic Fire Sprinkler System**
- (b) **Automatic Fire Sprinkler - Full Flow Trip Test - Pre-action, Deluge, and Dry Pipe valves**
- (c) **Standpipe Systems.**
- (d) **Hose Valve Pressure Regulating Valves (PRV) (Full Flow Test)**
- (e) **Refrigerant Discharge Systems**

The Chief has the authority to require a test at shorter intervals when an inspection by the Chief indicates there is substantial reason to believe that the equipment, system, or device would fail to operate properly in an emergency.

B. Fire Department Notification:

- (1) The appropriate local Fire Station or Fire Prevention Unit (responsible for compliance and record retention) shall be notified by the Chief's Regulation No.4 Certified Tester at least two complete working days prior to the performance of any required test or retest in order that the Chief or his representative may observe the test.

NOTE: The day of notification and the day of the test are not included in the 2 day minimum.

- (2) On the day of the test, Metro Fire Communications (Fire Dispatch) shall be notified prior to activating any signals that will initiate evacuation or dispatch the Fire Department. The Fire Department shall be notified within 24 hours upon discovery of any fire protection equipment or system that is determined to be inoperable which causes an immediate threat to life and property.

SECTION 3 **GENERAL REQUIREMENTS**

- (3) When it is determined that the fire protection equipment, system, or device is operable (with or without system defects), the Certified Tester shall attest to its condition to the Chief on approved F-340R Fire Protection Performance Report forms within seven days after initial test or retest.

C. General Test Information:

(1) Notification:

- (a) Notify all concerned agencies i.e. LAFD Metro Fire Communications Dispatch and the Supervising Monitoring Station (prior to and at the conclusion of all testing of fire protection equipment, systems, or devices).
- (b) Notify all building occupants prior to, during and at the conclusion of all testing of all supervised and/or local fire protection equipment, systems, or devices, which may cause concern to such occupants.

- (2) **Fire/Life Safety System Description Procedures:** Used to determine the status of a system as intended according to the approved design standard for a particular system, equipment or device as may be necessary to carry out the purpose and intent of this regulation. The Chief shall be consulted and approval obtained for any alternative programs or procedures.

- (3) **Fan Motors:** When testing systems, equipment, or devices that will activate fans of emergency smoke management systems, determine proper automatic operation by actuation of each type of device in each zone, then disconnect power to fans and continue testing. Constant on/off operation of fans could damage motors. At conclusion of testing, return fan motors to their normal mode.

- (4) **Electrical Thermal Links:** Test electrical thermal links for continuity only.

- (5) **Fire Pumps:** When testing water flow alarms or pressure regulating devices on systems equipped with fire pumps, fire pumps may be placed in the on position to prevent pumps from cycling on and off. At the conclusion of the test, return pumps to the automatic mode.

D. Repairs/Retest:

A permit from the Department of Building and Safety and/or the Fire Department may be required for repairs of equipment, systems or devices in accordance with the Los Angeles Building and Fire Codes. A licensed contractor with the appropriate license shall perform all required work. When required, all permits shall be obtained prior to the start of repairs of Chief's Regulation No. 4 defects.

When any fire protection equipment, system, or device is inoperable or defective, the owner or the owner's agent shall commence repairs of the deficiencies forthwith. Such repair shall be completed as soon as possible, but in every case within 30 days of the initial test. At the completion of repairs, the equipment, system, or device shall be re-tested to determine that it is fully operable.

Fire department personnel shall follow-up on defects that are not repaired within the 30 day time frame.

The Fire Department shall receive the repair and retest report from a Certified Tester within seven days on the approved Fire Department F-340RT Retest Form.

SECTION 3**GENERAL REQUIREMENTS**

Re-test: A retest of all the system components shown in the "List of Defects from the Initial Test. Prior to retesting, all items in the list are required to be repaired by a licensed contractor with a valid contractors license under permit from the authority having Jurisdiction for the type of repair (where required) Repairs and re-tests are required to be completed within 30 days of the date of the Initial Test .All re-tests are required to be performed by any Certified Tester. who holds the proper testing certification

NOTE: Only the items in the List of Defects are required to be tested except in extreme cases)

These intervals are the MAXIMUM allowable time between tests. It is important to note that at the Fire Departments discretion more frequent testing may be required.

D. Fire Hose Connections:

- (1) All fire hose connections shall be equipped with American National Standard hose coupling screw threads as specified in NFPA - 1963, "**Standard for Screw Threads and Gaskets for Fire Hose Connection,**" unless approved by the Chief.
- (2) All Fire Department inlets and outlets shall be equipped with approved plugs or caps.

NOTE: Plugs or caps shall inspected by Fire Department personnel during the appropriate Fire Department inspection cycle. Certified Testers shall list missing plugs or caps in Section V (Supplemental Information on F-340R Fire Protection Performance Report) for fire inspection follow-up

F. Gauges:

Gauges shall be replaced; when defective, every 5 years, or tested by comparison with a calibrated gauge. Gauges not accurate to within 3 percent of the full scale shall be re-calibrated or replaced.

SECTION 3 GENERAL REQUIREMENTS


G. System Tagging:

System tags shall be placed on all systems tested by the "Certified Tester" and shall bear the following information machine printed on them.

Check F-340R Performance Report to Verify Test Results

- (1) The words "Do not Remove by order of the Fire Chief"
- (2) Concern Name
- (3) Concern Address
- (4) Contractors license number or State Fire Marshals "A" license number
- (5) Certificate of Fitness Number
- (6) Date system passed the certification test
- (7) Signature of Certified Tester
- (8) Seal of the City of Los Angeles
- (9) Type of system tested

The system tags shall be five and one-half inches (5-1/2) in length and two and three-fourths inches (2-3/4) in width. The following sample shall be used for all tags.

Check F-340R Performance Report to Verify Test Results																
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC			
		2013		2014		2015		2016		2017						
DO NOT REMOVE BY ORDER OF THE FIRE MARSHAL	<input type="checkbox"/> Annual	Company Name _____														
	<input type="checkbox"/> 5 Year	Address/Phone # _____														
		State Lic. # _____														
																
		REG 4 NO. _____ 1.1.1 _____ Signature _____														
		<input type="checkbox"/> Auto Sprinklers <input type="checkbox"/> Standpipe Class: _____ <input type="checkbox"/> Comb Standpipe/Sprinkler <input type="checkbox"/> Fire Pump <input type="checkbox"/> Fire Alarm <input type="checkbox"/> Supervising Station <input type="checkbox"/> Emergency Power <input type="checkbox"/> Smoke Evacuation <input type="checkbox"/> Auto Elevators Phase(s): _____ <input type="checkbox"/> Auto Closing Fire Doors <input type="checkbox"/> Fire Escapes <input type="checkbox"/> Methane <input type="checkbox"/> Hose Valve PRV's														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

SECTION 4 GENERAL TEST PROCEDURES

A. Automatic Closing Assemblies: Fire Protection/Fire Doors:

NOTE: The following Automatic Closing Fire Assemblies shall be tested by persons qualified to do the work in order to determine their proper operating and reset condition in accordance with NFPA-80. The average closing speed shall be not less than six inches per second, (not including any initial delay time), and not more than twenty-four inches per second.

- (1) **Swinging Fire Door:** Release the hold-open device by unfastening the most distant fusible link or by de-energizing the smoke-actuated hold-open device. The door must close the opening completely and latch.
- (2) **Sliding Doors on an Inclined Track:** Unfasten the most distant fusible link to release the suspended weight to allow the door to travel down the inclined track to the closed position. The door must close completely and be held firmly in place by the binders. Doors in pairs must butt together without gaps or excessive offset from each other.
- (3) **Sliding Doors on a Level Track:** Unfasten the most distant fusible link supporting the closing weight. As the closing weight drops, the door must cover the opening completely.
- (4) **Rolling Steel Doors:** Unfasten the restraining cable or most distant fusible link and drop the restraining trigger quickly. The door must cover the opening completely.
- (5) **Telescoping Vertically Sliding Doors:** Unfasten the small counterweight. The large counterweight must operate the door, covering the opening completely.
- (6) **Vertical Sliding Doors:** Unfasten the most distant fusible link that supports the suspended weight. The door must cover the opening completely.
- (8) **Ventilation and Air Duct Dampers in non-sprinklered buildings:** Disconnect the fusible link or actuating device to the damper control. The damper must automatically travel to a position that closes the opening completely.
- (9) **Ensure** that all assemblies held-open by initiating devices, e.g., smoke detectors and/or manual pull stations close and latch properly.

NOTE: Dampers in sprinklered buildings shall be tested when first installed, or when major improvements to an area are made.

- (10) **Laundry and Rubbish Chute Doors:** Operate the door assemblies. The doors must close and latch either by means of a counterbalance or spring-load mechanism.
- (11) **Dumbwaiter Doors, Access Doors, and Fire Windows:** Determine that the automatic operation of these assemblies will function by releasing the weights or by actuation of any initiating device. Opening or closing the contacts, whichever is applicable, will actuate electrically operated devices. Determine that they close the opening completely when activated.
- (12) **Fire Shutters:** When these assemblies are automatic or self-closing, determine that they close the opening completely when activated.
See F-340R Fire Protection Equipment Performance Report Automatic Closing Assemblies for additional procedures

SECTION 4 GENERAL TEST PROCEDURES

B. Automatic Elevators - Emergency Operations- Phase I and II:

Test shall determine that all features of Phases I and Phase II (if provided) of fire emergency service and emergency communications equipment are in proper operating condition in accordance with Title 8, Section 3041 for elevators installed under Group II requirements, Title 8, Section 3121 for elevators installed under Group III requirements, and Title 8, Section 3140 for elevators installed under Group IV requirements of the California Code of Regulations.

NOTE: Certified Testers are required to be certified in one of the following categories:

- **Category 1:** A Chief's Regulation No. 4 Certified Tester who holds a Certified Competent Conveyance Mechanic License from the California Department of Industrial Relations
- **Category 2:** A Chief's Regulation No. 4 Certified Tester, that holds a Reg. 4 "Automatic Elevator Witness Only" certification which allows the Certified Tester to witness a the test performed by a Certified Competent Conveyance Mechanic and submit the report.

(1) Phase I (Recall)

(a) Elevator Lobby Smoke Detectors:

- [1] Determine that all landings served by each elevator or each group of elevators, except the designated main recall floor, are provided with smoke detectors.
- [2] Determine that smoke detectors located in the elevator machine room and at top of elevator shaft recalls elevators in that bank to designated main recall floor.

EXCEPTION:

The main recall floor may be equipped with elevator lobby smoke detectors that recall the elevator car to an alternate floor approved by the Chief.

- [3] Recall function - Actuate the elevator lobby smoke detector on each landing. Check for Phase I activation and interconnection of circuit with the fire alarm system, if provided:
 - [a] Determine that the door retraction safety devices, (except mechanical safety edges) are immediately deactivated.
 - [b] Determine that the "Emergency Stop Switch" is rendered inoperative as soon as the doors are closed and the elevator car starts towards the designated recall level. A moving car, traveling to or away from the designated level shall have its "Emergency Stop Switch" rendered inoperative immediately.
 - [c] Determine that elevator cars are not subject to calls from other sources; i.e., corridor call buttons and car floor selection buttons.
 - [d] Determine that each elevator car returns nonstop to the designated main recall floor and remains there with the doors open.
 - [e] Determine that the elevator shunt trip heat detector operates properly and shuts power to the elevator equipment.

SECTION 4 GENERAL TEST PROCEDURES

Automatic Elevators Emergency Operations Phase I (continued)

(b) Designated Main Recall Floor Switch:

- [1] Determine that the proper designated main floor recall switch is provided for each elevator or each group of elevators. The designated main floor recall switch shall be a three-position key-operated switch ("On," "Off," "Bypass") for Group II, ("Bypass," "On," "Off") for Group III And ("Reset," "On," "Off") for Group IV. The key shall not be removable in the "Bypass" or "Reset" position. Determine that keys to operate the designated main floor recall switch and in-car elevator switch are keyed alike and are readily available for firefighter use. Keys shall be located in the Fire Department lock-box or other location approved by the Chief. Fire Department personnel shall verify keys during routine fire/life safety inspections.
- [2] Turn the designated main floor recall switch to the "on" position. Determine that the recall function is the same as described in Section 4-B-1 Phase I Recall Function, except the alarm system, if provided, shall not activate.

(c) Designated Fire Control Room/Station Key-Switch:

- [1] Turn the designated fire control room/station key-switch to the on position, if provided. Determine that the recall function is the same as described in Section 4-B-1 (Phase I Recall Function), except that the fire alarm system, if provided, shall not activate. This switch shall be a two-position ("on" and "off") key-operated switch.

NOTE: If a three-position switch is installed, in the fire control room ("on" "off" "bypass") the main floor switch shall override the fire control room bypass function.

- (d) **Elevator Status Panel:** Check for proper function of the elevator status panel (usually installed in the fire control room)
See F-340R Fire Protection Equipment Performance Report Automatic Elevators Group II & III and F-340R Fire Protection Equipment Performance Report Automatic Elevators Group IV for additional procedures.

(2) Phase II (Fire Firefighter Override):

- (a) Determine that the proper in-car switch is provided in each elevator car. The in-car switch shall be a key-operated two-position switch "on" and "off", (group II). The switch shall be keyed identically with the "Designate Main Floor Switch". The key shall not be removable in the "on" position.

NOTE: Elevator cars equipped with a three-position "Off, Hold, On," key switch, (**Group III**) shall be removable in any position. **Group IV** Elevator cars equipped with a three-position "Off, Hold, On," key switch, shall only be removable in the "Off" and "Hold" position.

- (b) Determine that keys are readily available for firefighter emergency operation of the Phase II override function. There shall be a separate key for each elevator car in addition to the key for the designated main floor switch. Keys shall be located in the Fire Department lock-box or other location approved by the Chief. Keys shall be confirmed by Fire Department personnel during routine fire inspections.
- (c) Determine that the in-car Phase II switch in each elevator car is operative only when the elevator is in the Phase I recall mode.

SECTION 4 GENERAL TEST PROCEDURES

Phase II (Fire Firefighter Override) Continued:

NOTE: If Phase I is activated by the lobby key switch and then the in-car switch is placed in the "on" position (Phase II), the elevator car shall remain in Phase II. If the lobby switch is then turned to the "off" position the elevator shall remain in phase II until the operator inside the car returns the elevator to the designated recall floor and the doors are in the fully open position.

(d) Phase II Override/Firefighter Operation Function: Turn the designated main floor switch to the on position, and then turn the in-car switch of each elevator car to the on position. Test the Phase II override function of each car as follows:

- [1] Determine that each elevator car is operable only by a person in that car. The car shall not respond to a call from any other source.
- [2] Actuate a floor selection button in a normal manner. Close the doors by continuous pressure on the "door close"-button. If not provided, close the doors by continuous pressure on the floor selection button. If the button that closes the doors is released prior to the doors reaching the fully closed position, the doors shall automatically reopen.
- [3] Determine that, if multiple floor selection buttons have been actuated, the elevator car will stop at the first of the selected floors that it reaches. At that time, all other selections shall cancel. The doors shall remain closed.
- [4] Open the doors by continuous pressure on the "door open" button. If not provided, open door by continuous pressure on floor selection button. If the button is released prior to the doors reaching the fully open position, the doors shall promptly and automatically re-close.
- [5] Where more than one operating panel is provided in an elevator car, determine that both panels will correctly operate the override function.
- [6] In elevators where key switches or programming characteristics are provided to prevent the elevator from stopping at one or more landings while in normal service, determine that fire emergency service overrides such features.
- [7] Determine that the "Emergency Stop Switch" is operative during the time the elevator is in the Phase II override function.
- [8] Cars equipped with a three position key switch "Off", "Hold", "On" (Group III & Group IV)) shall operate in Phase II in the "On" position. Shall stay stopped at their designated landing in the "Hold" position and return to Phase I when placed in the "Off" position and the doors shall completely close causing the car to return non stop to the main recall floor and doors shall open.
- [9] Return all systems and key switches to their normal positions.

See F-340R Fire Protection Equipment Performance Report Automatic Elevators Group II & III and F-340R Fire Protection Equipment Performance Report Automatic Elevators Group IV for additional procedures

NOTE: Fire alarm control panels only used as elevator recall control and supervisory control panels shall be labeled "**Elevator Recall Control and Supervisory Control Unit**" in accordance with NFPA 72

SECTION 4 GENERAL TEST PROCEDURES

C. Emergency and Standby Power Systems Generator:

- (1) Determine that all equipment is in proper operating condition and well maintained in accordance with NFPA-70 and 110.
- (2) Determine that the generator has not been started within 12 hours to ensure a cold start and that all systems and equipment powered by emergency power are operating prior to load transfer from normal power to emergency power.
- (3) Use the main breaker for load transfer from normal power to emergency power.
- (4) Determine that emergency current supplies power to all required systems and equipment as per building single line diagram.

EXCEPTION:

With the approval of the Chief, other methods of load transfer may be conducted.

- (5) Determine that the load transfers in the required time.
 - (a) Emergency power requirement is 10 seconds.
 - (b) Standby power requirement is 60 seconds.
 - (c) Ensure all required exit path lighting is sufficient enough to find, distinguish and safe to use in accordance approved L.A.F.D. acceptance practices.
 - (d) Exit and directional signs illuminated by internal means shall be visible from 100 feet in any direction
 - (e) Externally lit exit and directional signs shall have a minimum reading of five foot-candle power measured at the sign. A light meter shall be used.
 - (f) The emergency standby system must supply power to all emergency lights and connected equipment for the duration of the test.

See F-340R Fire Protection Equipment Performance Report Emergency Power and Standby Systems-Generator for additional procedures

NOTE: Diesel driven generators shall be exercised under load monthly for a minimum of 30 minutes to prevent wet stacking. Records shall be verified during fire department inspection

D. Emergency and Standby Power-Stored Electrical Energy (Battery Back-Up):

- (1) Determine that all equipment is in proper operating condition and well maintained in accordance with NFPA-70,110 and 111.
- (2) Verify that all fixtures and/or lighting elements are in working order prior to conducting the load test to ensure a load is placed on the battery system
- (3) Conduct a load test on battery systems to ensure proper battery life. Batteries supplying power to unit lighting shall have sufficient power for 90 minutes.
- (4) Determine that all Emergency Lighting has activated within 10 seconds. All areas requiring Emergency Lighting shall be checked for adequate lighting.
- (5) Ensure all required exit path lighting is sufficient enough to find, distinguish and safe to use in accordance approved L.A.F.D acceptance practices.
- (6) Exit and directional signs illuminated by internal means shall be visible from 100 feet in any direction.
- (7) Externally lit exit and directional signs shall have a minimum reading of five foot-candle power measured at the sign. A light meter shall be used.
- (8) The emergency battery system must supply power to all emergency lights for the duration of the test.
- (9) Return all systems and equipment to their normal position.

See F-340R Fire Protection Equipment Performance Report Stored Electrical: Energy for additional procedures

SECTION 4 GENERAL TEST PROCEDURES

Emergency and Standby Power-Stored Electrical Energy (Battery Back-Up) continued

NOTE: A proper test of Battery Backup/stored electrical energy lighting shall be conducted by using the main breaker or the circuit breaker that supplies power to the fixtures and not by pressing the test button. Testing of emergency lighting levels should be conducted in a dark environment (simulating worst case scenario) to accurately measure the required illumination.

E. Fire Escape Assemblies:

- (1) Determine that fire escape stairs, landings, ladders, guards, rails, and safety chains are in good repair.
- (2) Determine that all landings are accessible from inside the building and provided with proper signage. Improper or missing signage and/or storage shall be indicated by the Certified Tester in Section V of the F-340R Fire Escape Assemblies Performance Report for Fire Department follow up inspection.
- (3) Operate the ladder release mechanism. The release mechanism must operate easily. The ladder must travel to the ground without hesitation. It must be stable and firm in its position after reaching the ground. This procedure shall be conducted twice.
- (4) Return ladder to its normal position.

See F-340R Fire Escape Assemblies Fire Protection Equipment Performance Report for additional procedures.

F. Fire Hydrants (Private) – (Currently not enforced by LAFD):

Determine that hydrant is in proper operating condition and well maintained in accordance with Los Angeles Fire Code Division 9, Title 19/NFPA-25 California Edition and NFPA-291.

- (1) Outlets: Determine that outlets are not damaged and are provided with proper caps. Only 1-1/4 or 1-3/4 pentagonal nuts shall be accepted.
- (2) Flow: Hydrant shall be opened fully and water flowed until all foreign material has cleared. Flow shall be maintained for not less than one (1) minute (care should be given to avoid flooding and property damage).
- (3) One hydrant closest to the main is chosen to be the residual hydrant at which the normal static pressure will be observed with the other hydrants in the system closed. The residual pressure will be observed with the other hydrants flowing.
- (4) When the required GPM are flowing, a minimum residual pressure of 20 psi shall be maintained at the residual hydrant. Record the residual pressure with the required GPM'S flowing from the furthest hydrant in the system. The required flow shall be in accordance with Los Angeles Fire Code Division-9

NOTE: To obtain satisfactory test results, sufficient discharge should be achieved to cause a drop in pressure at the residual hydrant of at least 25%. For hydrants with a static pressure of less than 40 psi, hydrants should be rated at one-half the static pressure.

SECTION 4 **GENERAL TEST PROCEDURES**

G. Fire Alarm Systems, Two Way, & One way Emergency Communication Systems

Determine that all equipment is in proper operating condition and well maintained in accordance with applicable portions of NFPA-72. Check system reliability as follows:

NOTE: Prior to testing any Fire Alarm System, the system shall be clear of all supervision, trouble, tampers, and alarm signals

EXCEPTION:

The test can be performed if the signals are due to minor maintenance and can be cleared if necessary and will not interfere with testing.

- (1) **Operating Instructions:** Approved operating instructions for the Fire Alarm System shall be posted within 3 feet of the building fire control room/station.
- (2) **Sequence of Operation:** An approved accurate matrix sequence of operation shall be posted in or adjacent to the building fire control room/station showing the operation of all auxiliary control functions of the fire alarm system. (See Appendix)
- (3) **Trouble Signal:** Disconnect fire alarm AC power. The audible trouble signal and trouble light or lights must operate. Operate the trouble signal-silencing switch. Restore power and trouble light switch to normal position. If a ring-back system is provided, the trouble light switch must be reset.
- (4) **Supervision of Initiating Device Circuits:** Disconnect a fire alarm initiating device. Audible trouble signal and light or lights on fire alarm annunciator panel must operate.
- (5) **Supervision of Audible Fire Alarm Device Circuits:** Disconnect a notification appliance. At that time, either an audible trouble signal and/or light on fire alarm annunciator panel must operate.
- (6) **Supervision of Control Valve Circuits:** Movement of the valve from its normal position shall initiate a distinctive signal at the fire alarm panel. The off-normal supervision signal (tamper) shall remain until the valve is restored to its normal position. The off-normal supervision signal shall be obtained by two revolutions or 1/5 the travel distance of the control valve apparatus, whichever is less from its normal position.
- (7) **Initiating Device Function Test:** Test all fire alarm initiating devices. Actuation of an initiating device shall indicate a signal on the fire alarm panel and/or the annunciator panel, indicating the type of device, zone or address of actuation if provided.
- (8) **Notification Appliances-Audible:** Actuation of initiating devices shall also sound an audible signal that is a minimum sound pressure level of 15 dBA above the ambient noise level. Sound shall be a minimum of 75 dBA (45 dBA for private mode) and shall not exceed 120 dBA anywhere in the occupiable area. An average ambient sound pressure level greater than 105 dBA shall require the use of visible notification appliances and shall be entered in section V of the F-340R Fire Alarm Fire Protection Equipment Performance Report for Fire Department follow up.
- (9) **Sound pressure levels** shall be obtained by the use of a sound pressure level meter. The speed shall be set to: "FAST" and the weight set to "A" ("A" weighted scale)

NOTE: Systems installed prior to 1993 and appliances intended for operation in the private mode. An audible tone of 10 dBA above normal ambient sound level is acceptable.

SECTION 4 GENERAL TEST PROCEDURES

Fire Alarm Systems, Two Way & One way Emergency Communication Systems (Continued)

- (10) **Notification Appliances-Visual:** Verify that all ADA strobes are activated by an initiating devices and flash at a rate of 60 to 120 per minute and flash in synchronization when more than two strobes are in the field of view.
- (11) Systems equipped with A.D.A. strobes which were installed in accordance with the 1998 California building Code may continue to flash when audible signals are silenced. Strobes installed under NFPA -72 2007 edition shall deactivate when the fire warning system is silenced.

EXCEPTION:

Strobes installed prior to 1998 may not have the capability to be synchronized and are not required to be synched until tenant improvement is performed in the area.

- (12) **Buildings regulated by the provisions of Title 24-California Code of Regulations and Section 4705 of the Los Angeles Fire Code,** shall have all fire alarm, trouble and supervision signals transmitted to a 24-hour continuously supervised Building Fire Control Room/Station or to a UL approved Supervising Station Service.
Fire Alarm Systems with integrated supervising station transmission means shall be tested as part of the fire alarm system (see item 12 of the F340R Fire Alarm Protection Equipment Performance Report).
- (13) **Sprinkler System Flow Switch:** Open the Inspector's test valve(s) for each riser or floor valve, causing the water flow switch to be actuated. This actuation shall indicate an alarm within 20 to 60 seconds. In addition, the outside electric sprinklers alarm bell (if provided) will sound within 90 seconds.
- (14) **Subsequent Alarms:** Determine that subsequent alarms reactivate audible signals; i.e., activates alarms from one floor/zone to the next.
- (15) **Emergency Voice Evacuation Systems: Two Way Communication Systems (Fire Fighter Phones) Sound Powered and Amplified**
 - (a) Test clarity of voice communications between floors, the building fire
 - (b) control room/station and other locations where provided.
 - (c) Determine that a minimum of six approved sound-powered or amplified telephone sets are available at the building fire control room/station.
 - (d) Check telephone jacks for proper type, loose connections, corrosion, and proper installation.

See F-340R Fire Alarm Fire Protection Equipment Performance Report for additional procedures.

- (16) **One Way Building Communication Systems (Fire Alarm Voice Override)**
 - (a) Determine that the voice evacuation panel is operating properly and approved operating instructions are available.
 - (b) **New buildings** (Post July 1974): Determine system reliability by testing clarity of voice communication between the fire control room/station and all areas within the structure include outside patios and balconies above the first floor. Audibility minimum 15 dBA above the average ambient sound level but in no case less than 75 dBA and no more than 120 dBA on systems installed before 2001 and 110dbA after 2001.

SECTION 4 GENERAL TEST PROCEDURES

Fire Alarm Systems, Two Way, & One way Emergency Communication Systems (Continued)

- (c) **Existing buildings:** Determine system reliability by testing clarity of voice communication between fire control room/station and all areas where provided. Audibility shall not be less than 10db above the average ambient sound level.
- (d) **Voice Override:** Determine that the voice override on voice evacuation systems operates properly. With fire alarm audible signals operating, press down on the microphone button and speak into microphone. At that time, fire alarm audible tones shall discontinue sounding and voice sound shall be 15db minimum above average ambient sound level, but in no case less than 75 dBA or more than 120 dBA, or 110dBA after 2001.

NOTE: Systems installed prior to 1993 may have an audible signal a minimum of 10 dBA above the average ambient sound level.

- (e) Systems equipped with A.D.A. strobes which were installed in accordance with the 1998 California building Code may continue to flash when voice evacuation system is activated or audible signals are silenced. A.D.A. strobes installed as per NFPA 2007 and after shall continue to flash when voice evacuation system is activated or audible signals are silenced.

See F-340R Fire Alarm Fire Protection Equipment Performance report for additional procedures.

H. Fire Pumps (Stationary):

- (1) **Associated Components:** Determine that the fire pump, fire pump controller, remote status panel, water supply, fire pump test header, and all other associated components are in proper operating condition and maintained in accordance with NFPA-20 and Title 19/NFPA-25.California Edition

NOTE: Incorrect signage shall be noted by the Certified Tester in Section V of the F-340R for Fire Department follow-up inspection.

- (2) **Rated Capacity (flow), Pressure (head) and Revolutions Per Minute (RPM):** Determine the rated capacity (flow), pressure (head) and revolutions per minute (RPM) of the pump by reading the pump plate attached to the pump. Determine the required flow and the number of test outlets required by dividing the rated capacity of the pump (GPM) by 250. Determine the 50, 100 and 150 percent required flow of the pump. An approved method shall be used to measure GPM, PSI and RPM.
- (3) **Automatic and Manual Starts:** Determine that the fire pump starts automatically and manually in accordance with manufacturer specifications by decreasing system pressure for automatic starts and using the start switch for manual starts.
- (4) **Churn Pressure:** Record churn pressure. Operate the fire pump with all fire department discharge outlets in the closed position (except for a minimum flow of water to ensure proper pump cooling).
- (5) **Discharge Pressures** After the fire pump has been operating for seven minutes, open the correct number of test outlets and record the pump discharge at 50%, 100% (rated capacity), and 150% (peak/overload) of the rated flow. At peak flow the fire pump shall not perform less than 65% percent of its rated pressure/head.
- (6) **Suction Pressure:** If the fire pump is fed directly from city mains, ensure that the residual pressure on the supply side of the pump does not drop below 20 PSI during the flow test. A reading below 20 PSI could damage city mains.

SECTION 4 GENERAL TEST PROCEDURES

Fire Pumps (Stationary) Continued

NOTE: If available suction supplies do not allow flowing 150 percent of the rated pump capacity, the fire pump shall be permitted to operate at maximum allowable discharge. However the Chief's Regulation No. 4 Unit shall be contacted for final approval.

- (7) At the conclusion of the pump test, restore all valves and controls to their normal operating condition.

See F-340R Fire Protection Stationary Fire Pumps Equipment Performance Report for additional procedures.

Weekly and Monthly Fire Pump Tests

Diesel fire Pump- Churn Test (no flow) shall be performed weekly for a minimum of 30 minutes.

Electric Fire Pump - Churn Test (no flow) shall be performed monthly for a minimum of 10 minutes.

NOTE: Weekly and monthly fire pump tests shall be conducted by a company that holds a C-16 Specialty License issued by the Contractors State Licensing Board (CSLB) or an individual who holds an "L" license (Limited) Fire Pump Certificate. NFPA 25 forms shall be used to record these tests and kept onsite for fire department inspection.

I. Gas Detection Systems:

(1) Methane Gas:

- (a) **Associated Components:** Verify that the gas detection system and all associated components are in proper operating condition and maintained in accordance with F.P.B. Requirement No. 71 and Chapter 71 of the Los Angeles Building Code.
- (b) **Control Panel:** Verify that the control panel is in proper operating condition and the approved system description, sequence of operation, operating instructions and emergency telephone number of company responsible for servicing system is posted at or adjacent to the control panel and the annunciator panel.
- (c) **Emergency Power:** Verify that emergency power is capable of supplying power for 24 hours in the standby mode and 5 minutes in full alarm after 24 hours in the standby mode.
- (d) **Sensors:** Test all sensors in the system for proper activation of alarm system and proper annunciation at the status panel.
- (e) **Test Gas:** Use Methane Test gases of 10 to 25% L.E.L. and 50 to 60% L.E.L. Verify that system activates gas evacuation fans between 10% and 24% L.E.L. and goes into full alarm at 25% L.E.L. The drift (difference) between the sensor and the test gas shall not exceed + or - 5% LEL when using 50% test gas.
- (f) **Notification Appliances:** Verify that all audible devices sound an alarm a minimum of 15db above the ambient noise level but not less than 75db and a maximum of 120 dBA for systems installed prior to 2001 and 110 dBA after 2001. Visual devices (strobes) shall be clearly visible and shall be synchronized when more than two devices are visible.

SECTION 4 GENERAL TEST PROCEDURES

Gas Detection Systems (continued)

- (g) **Device Identification:** All devices shall be identified with the word "METHANE" written on them.
- (h) **Mechanical Air Ventilation Systems:** Verify that all mechanical air ventilation systems (if applicable) operate properly when system is activated at or below 10% L.E.L. and an exchange of air occurs at a rate of not less than four (4) changes of air per hour and exhausted directly to the outside. Verify that vent risers are not damaged or obstructed and maintain a 10' foot clearance around point of discharge.
- (i) **Signals:** When required, verify that all methane alarm, supervision, and trouble signals are transmitted to a 24-hour continuously supervised location or a UL Laboratory approved supervising station service. Verify for proper type of activation and dispatch.
- (j) **Circuit Breakers:** Verify that the electrical circuit breakers supplying normal electrical power are equipped with a lockout device, or only accessible to authorized personnel
- (k) **Vent Risers:** Verify that sensors located in the vent risers activate a vent blower at 4 %, but does not place the system in alarm, or signal the supervising station to dispatch the fire department.
- (l) **Sensor Identification:** Verify that all sensor identification addresses correspond with the same information as the control panel.
- (m) **Supervising Station Alarm Control Unit**
- (n) **Supervising Station Alarm Control Unit- Secondary Power**
- (o) **Supervising Station Transmission Signals**

See F-340R Supervising Station Alarm Fire Protection Equipment Performance Report items 2.0 through 3.6 for the testing procedures for (m), (n), & (o) above.

J. Pressure Reducing /Regulating Hose Valves: (PRV'S)

The following procedure applies to every 2-1/2-inch standpipe hose outlet equipped with pressure regulating valves, to determine their proper operating condition and maintenance in accordance with applicable portions NFPA-14 and of Title 19/NFPA-25 California Edition

Fire pump(s) must be operating when measurements are taken. Perform the test procedure in the following sequence:

- (1) Attach approved flow and pressure measuring devices to the pressure-reducing valve.
- (2) Attach an approved 2-1/2 inch shut-off on the discharge side of the measuring devices.
- (3) Attach an approved water drainage system on the discharge side of the 2-1/2 inch shut-off.
- (4) Open the outlet fully; regulate the water for the required maintenance flows from the 2-1/2 inch shut-off.
- (5) Determine that the outlet delivers at least 300-GPM.
- (6) With 300-GPM flowing, ensure that the residual pressure on the discharge side of the outlet is at least 80-PSI and not more than 125-PSI. Document residual pressure with 300-GPM flowing on approved Fire Department forms. If adjustments are needed a residual pressure of 125-PSI is recommended.

SECTION 4 GENERAL TEST PROCEDURES

Pressure Reducing /Regulating Hose Valves (PRV'S) Continued):

EXCEPTION No 1:

For buildings built after 1994, the required flow is 300-GPM at 100-PSI to 125-PSI.

Ensure that static pressure on the discharge side of the outlet is a maximum of 150-PSI for buildings built before 1994. Document static pressure on approved Fire Department forms. When static pressures greater than 150 psi are observed during the full flow tests, the Certified Tester shall contact the Chief's Regulation No. 4 Unit for guidance.

EXCEPTION No 2:

For buildings built after 1994, static pressure shall be 175-psi maximum or higher as approved by LAFD.

- (7) Close outlet and remove test equipment.

NOTE No. 1: Some PRV's may have been accepted with a static pressure greater than 150 psi or 175 psi in order to obtain a residual pressure of 100 to 125 psi. When static pressures greater than 150 or 175 are observed during the full flow tests, the Certified Tester shall contact the Chief's Regulation No. 4 Unit for guidance.

NOTE No. 2: PRV static pressures shall not be adjusted during annual PRV maintenance. Where static pressures greater than 150 or 175 psi are found during annual PRV maintenance, the results shall be compared to the last full flow PRV test on record, but in no case shall the valve be adjusted without conducting a full flow test to verify the approved residual pressure.

See F-340R Hose Valve Pressure Reducing Valves Fire Protection Equipment Performance Report for additional procedures

K. Refrigerant Discharge Systems (Not enforced by LAFD at this time):

- (1) Systems Providing For Manual Discharge of Refrigerant to the atmosphere:
 - (a) Determine that the emergency refrigerant control box is plainly marked:
"FOR FIRE DEPARTMENT ONLY – (REFRIGERANT) CONTROL VALVE."
 - (b) Determine that the high and low-pressure valves within the box are indicated.
 - (c) Operate the high and low-pressure valves to assess proper working condition.
- (2) Ensure the system is provided with a fire department diffuser consisting of a 2 ½" hose connection to a sewer:
 - (a) Determine that the emergency refrigerant control box and valves are properly labeled as per (a) and (b) above.
 - (b) With water flowing through 2 ½" hose to fire department diffuser, open the high and low-pressure valves to assess proper working condition.

SECTION 4 GENERAL TEST PROCEDURES

L. Smoke Management Systems:

- (1) **Building Emergency Smoke Management Systems:** Ensure that areas equipped with Mechanical Smoke Ventilation Systems are tested for proper automatic operation by actuation of a fire protective signaling system-initiating device.
 - (a) **Mechanical Ventilation:** Building air-handling equipment (HVAC) designed to remove smoke shall exhaust at a rate of not less than six changes of air per hour and exhaust directly to the exterior of the building without re-circulating to other locations in the building. Mechanical ventilation equipment controls shall be located in the fire control room/station and have the capability of controlling one or all floors for smoke evacuation.
 - (b) **Below Grade Levels:** All areas below grade equipped with mechanical smoke ventilation shall be tested for proper automatic operation by actuation of a fire protective signaling system-initiating device. System shall exhaust at a rate of not less than six (6) changes of air per hour, and exhaust directly to the exterior of the building.
 - (c) **Smoke Removal:** Mechanical Smoke Control systems. Check system reliability as follows:
 - [1] Actuate all initiating devices designed to operate fans, blowers, and smoke control dampers to determine proper automatic function of system.
 - [2] When fans, blowers, and smoke control dampers are interconnected to the building fire control room/station, ensure that remote control from that location is operable and proper status is indicated on the smoke control panel. Verify that all lights are functional when the lamp test button is depressed.
 - [3] Perform a visual inspection of all fans, blowers, and smoke control dampers to verify proper operation in the smoke removal mode.
- (2) **Mechanically Ventilated Smoke-proof Enclosure:**
 - (a) **Doors:** Open all doors in the system and determine if they are held open by smoke-actuated hold-open devices.
 - (b) **Initiating Devices:** Actuate any initiating device on each floor and Determine that:
 - [1] All-magnetic hold open devices release and all fire rated doors in the system properly closes and latch.
 - [2] The comfort air handling system (HVAC) has shutdown.
 - [3] The vestibule ventilation system is activated and the supply and exhaust dampers open.
 - [4] The stair-shaft ventilation system is activated.
 - [5] The fire control panel properly indicates the status of the fire protective signaling system.
 - [6] That all fire alarm audible and visual devices operate on appropriate floor.
 - [7] That the smoke control panel, if provided, operates properly in both manual and automatic modes and proper status is indicated on the panel.

SECTION 4 GENERAL TEST PROCEDURES

Smoke Management Systems (continued):

(c) Vestibule Performance test:

- [1] Actuate any fire alarm initiating device.
- [2] Open the doors from the vestibule to the stair-shaft, on any three consecutive floors.
- [3] Ensure that the system meets the following requirements:
 - [a] 2500-cfm minimum is flowing at the stair-shaft exhaust opening.
 - [b] The flow from the exhaust of each of three vestibules shall be 2500-cfm minimum per vestibule with all three flowing simultaneously.

(d) Stair-shaft Performance Test:

- [1] With the system operating and all doors closed, measure the stair-shaft static pressure at three floors located in the top, center, and bottom thirds of the stair-shaft. This pressure is to be measured between the stair-shaft and hallway, at the floors selected, with the comfort air handling (HVAC) turned off.

EXCEPTION:

Determine that the minimum pressure within the vestibule with the doors closed is 0.05-inch water gauge (12.44 PA) positive pressure relative to the fire floor and 0.05-inch water gauge (12.44 PA) negative pressure relative to the exit enclosure. No pressure difference is required relative to a non fire floor

See F-340R Fire Protection Equipment Performance Report for additional procedures

(e) Pressure Difference: California Building Code Section 905 (1997 & 2001 editions) or Section 909 (2007 & 2010 editions).

- [1] Determine that the minimum requirement of 0.05-inch water gage pressure differential was measured across smoke barriers between the zone of fire origin and the non fire zone in accordance with the Los Angeles Fire Department approved rational analysis.
- [2] Determine that the door opening force for each exit door between the active smoke zone and passive smoke zone is a maximum of 15 pounds or as per approved rational analysis.
- [3] Determine that exit enclosures (i.e. stairways or vestibules) built in accordance with the 1997 & 2001 California Building Code are pressurized and discharge a minimum of 2500 cubic feet per minute of air at the controlled relief vent at the upper portion of the exit enclosure or in accordance with approved rational analysis.

See F-340R Fire Protection Equipment Performance Report for additional procedures

SECTION 4 GENERAL TEST PROCEDURES

Smoke Management Systems: (continued)

- (f) **Pressurized Stair-Shaft System:** Inspect the system for proper status prior to activating system. Activate any fire alarm initiating device to automatically activate the system. Inspect the status panel in the building fire control room/station for proper operation.
- (g) **Airflow Requirement:** Determine that the system has the minimum airflow requirement. Measure a typical cross-sectional area in the stair-shaft in square feet and multiply by 50 linear feet per minute. With all doors closed using an approved anemometer at the exhaust point, determine that the system meets 90 percent of the minimum required CFM while maintaining a positive pressure.
- (h) **Door Opening Force:** Door opening force is obtained by using an approved door testing device applied in a direct vertical line above the axis of the door knob/lever.
 - [1] **Test 1:** With the system on and all doors closed, the maximum allowable pressure that is required to open that door should be 30 lbs. That door must close and latch when released.
 - [2] **Test 2:** With the system on one door open plus one additional door open, the maximum allowable pressure to open the door shall be 15 lbs. Door must close and latch when released.
 - [3] **Test 3:** In tests 1 and 2, stair-shaft doors that swing outward must close and latch after being opened and released.
 - [4] **Test 4:** System fans off, exit doors that swing outward (i.e. exit to the roof and a public way) require a door opening force of not more than 30 lbs.
 - [5] **Test 5:** With the system off all doors in stair-shaft must close and latch after being opened and released.

See F-340R Pressurized Stair Shaft Fire Protection Equipment Performance Report for additional procedures

M. Sprinkler Systems, Automatic: Wet, Dry, Pre-action, Deluge & Foam

Determine that all equipment is in proper operating condition and well maintained in accordance with applicable portions of NFPA-13 and Title 19/NFPA 25-California Edition

NOTE: 1 1/2 " Hose stations connected to automatic sprinkler systems installed under NFPA 13 are not required to meet flow requirements of NFPA 14 or Title 19/NFPA 25 California Edition.

- (1) **Fire Department Connection:** Determine that appropriate inlet connections are provided and are in operable condition. Determine that approved signs have been provided. Incorrect or missing signs shall be noted by the Certified Tester in section V of the F-340R Automatic Fire Sprinkler 5 year Fire Protection Equipment Performance Report for Fire Department follow-up inspection.

SECTION 4 GENERAL TEST PROCEDURES

Sprinkler Systems, Automatic: Wet, Dry, Pre-action, Deluge & Foam (continued)

(a) Back Flush:

Flush the Fire Department Inlet Connection and Piping: Use the following method to remove obstructions and/or debris from the Fire Department inlet connection and piping:

- [1] With the main system shut-off valve closed and the piping to the Fire Department connection drained, disassemble and inspect the check valve, then remove, reverse, or block open the clapper in the check valve. Reassemble check valve.
- [2] Open the main system shut-off and flow adequate water backwards through the Fire Department connection inlet to assure that all debris is cleared from the inlet piping and Fire Department connection. Restore system to normal.

NOTE: This is the preferred method of clearing the Fire Department connection.

(2) Hydrostatic Test:

Perform a hydrostatic test of the FDC piping in accordance with NFPA 13 2010 edition Chapter 24, Section 24.2.1.10 for the required PSI and Chapter 6 NFPA 25 2013 California edition Table 6.3.1.6 for the test duration.

Systems Affected: Dorothy Mae, Automatic Wet, Combined Standpipe/Sprinkler, Class III Standpipe

NOTE: This test is required where the distance between the FDC piping and the check valve is greater than 3 feet and/or all FDC underground piping back to the check valve.

The piping between the fire department connection and check valve shall be hydrostatically tested at 150 psi for 3 minutes every five years.

a) Conduct Air Test of FDC piping (where necessary)

Air test 25 psi for 30 minutes to check for leakage where water damage to property may occur.

b) Conduct Hydro Static Test:

Hydrostatically test the piping between the FDC and the check valve @ 150 psi for 3 minutes

Check for a significant drop in pressure or visual leakage. A slight fluctuation in pressure may occur due to a change in temperature. This is not considered a pressure loss. A Very small bead of water may also appear at a fitting. This is not considered a leak unless the bead of water continues to grow and drip.

Equipment needed: Air Compressor, Electric Hydrostatic Test Pump or Fire Pump Apparatus, Pressure gauges.

- (3) Main Drain/Water Supply Test:** With the main drain valve closed, note the static pressure reading on the gauge. Fully open the main drain valve with water flowing, note the residual reading on the pressure gauge. Close main drain valve and note pressure gauge reading. A slow return on pressure gauge to original static reading may indicate a closed valve or obstructions in water supply lines.

- (4) Gauge Test:** Connect a test gauge at the test gauge opening to determine the reliability of existing gauges.

SECTION 4 GENERAL TEST PROCEDURES

Sprinkler Systems, Automatic: Wet, Dry, Pre-action, Deluge & Foam (continued)

(5) On-site Water Supply:

- (a) Determine that filling for on-site water supply, if provided, operates when flow test is conducted.
- (b) Determine that the air pressure and/or water supply gauges on dry, pre-action, and deluge systems are in proper working condition.

NOTE: Tests of dry, pre-action and deluge systems will be done by using the bypass connection.

(6) Sprinkler Inspection:

- (a) Inspect system for proper sprinkler head placement, orientation, type, proper hangers, seismic bracing, and signs of corrosion, physical damage, or paint on the cap, fusible link/bulb or on the deflector in an amount that will change the sprinkler pattern

NOTE: Sprinklers protecting spray-coating areas shall be protected against over-spray residue. Sprinklers shall be protected using plastic bags having a maximum thickness of 0.003 inches, [0.076mm] or with small paper bags. Coverings shall be replaced when deposits or residue accumulate.

- (b) Inspect spare sprinkler heads box for correct number and type of sprinkler heads and proper wrench. The number of spare sprinkler heads shall be as follows:
 - Less than 300 heads - not less than 6 sprinklers heads.
 - 300 to 1,000 heads - not less than 12 sprinklers heads.
 - Over 1,000 heads - not less than 24 sprinklers heads.

NOTE: Improper sprinkler installation issues e.g. broken hangers; seismic bracing lack of coverage, etc. shall be indicated in section V of F-340R Fire Protection Equipment Performance Report for follow-up by the Department of Building and Safety. Fire code issues such as missing/incorrect signage or spare sprinkler heads etc. are handled in similar same manner except the follow-up inspection will be made by fire department personnel.

(7) Sprinkler Testing:

- (a) Sprinkler heads in operation over 50 years and sprinkler heads known to have an abnormally high failure rate listed by the Chief shall have a representative sample of not less than four sprinklers or 1 percent, whichever is greater tested by an approved testing laboratory for evaluation. If one sprinkler fails, all sprinklers in the system represented by the submitted sample shall be replaced. This testing procedure shall be repeated at 10-year intervals after the initial 50 year test.
- (b) Sprinkler heads manufactured prior to 1920 shall be replaced.
- (c) Fast response sprinkler heads that have been in service for 20 years shall be tested and re-tested at 10-year intervals.
- (d) Representative samples of solder-type sprinklers with a temperature classification of Extra High (325 degrees /163 degrees C) or greater that is exposed to continuous maximum allowable ambient temperature conditions shall be tested at five-year intervals

SECTION 4 GENERAL TEST PROCEDURES

Sprinkler Systems, Automatic: Wet, Dry, Pre-action, Deluge & Foam (continued)

- (8) **Sprinkler Pressure Reducing Valves: (PRV's)** Sprinkler systems with static pressures in excess of 175 psi shall be equipped with approved pressure regulating devices.
- (9) **Sprinkler PRV Full Flow Test:** Verify that the PRV will maintain the pressure on the system side of the valve to no more than of 175 psi by opening the sectional drain valve and reading the gauges on the supply and system side of the valve.
- (10) **Inspector's Test Valve Operation Test:** Open the Inspector's test valve at the most remote location from the main control valve in the system. The alarm must sound within 5 minutes for mechanical water motor-type alarms and within 20 to 60 seconds for electrically monitored water flow switches.
- (11) **Valves:** Operate, inspect, and lubricate post indicator valves, underground gate valves, OS&Y valves, and one-way check valves to determine that they are in good operating condition and do not leak. Return all-valves to their normal position.

NOTE: Control valves that are not supervised shall be secured in their normal position using a break-a-way lock and chain. Certified Tester shall indicate in section V of the F-340R Fire Protection Equipment Performance Report for Fire Department follow-up/inspection

- (12) **Tamper Supervisory Switches** Check tamper supervision circuits by moving valve from its normal position two revolutions or 1/5 the travel of the valve whichever is less. This shall initiate a distinctive signal at the fire alarm panel, if provided.
- (13) **Sprinkler Wrench:** A special sprinkler wrench[s] shall be provided and kept in the cabinet to be used in the removal and installation of sprinklers. A sprinkler wrench shall be provided for each type of sprinkler installed.
- (14) **Automatic Sprinkler Systems Pre-action, Deluge, or Dry Pipe:** Automatic sprinkler systems equipped with Pre-action, Deluge, or Dry Pipe systems shall have their water-control valves and their automatic and manual tripping means tested annually as required by approved manufacturer's testing procedures and the Chief.

(a) Trip Test

- [1] **Partial Flow:** A Partial Flow Trip test of Dry pipe, Pre-action, or Deluge Valves shall be performed annually to ensure the valve will open as designed. The test shall be conducted with the valve partially open.
- [2] **Full Flow:** A Full Flow Trip test of Dry pipe, Pre-action, or Deluge Valves shall be performed every five years to ensure the valve will open as designed. The test shall be conducted with the control valve fully open.

EXCEPTION:

Deluge valves shall be trip tested at full flow annually.

SECTION 4 GENERAL TEST PROCEDURES

Sprinkler Systems, Automatic: Wet, Dry, Pre-action, Deluge & Foam (continued)

- (15) **Foam-Water Sprinkler Systems:** Testing of foam water sprinkler systems shall be conducted to ensure that the foam-water system(s) operates as designed, both automatically and manually. Testing procedures shall simulate anticipated emergency events so the response of the foam-water system can be evaluated in accordance with NFPA 16, 16A, Title 19/NFPA 25 California edition and recommended test procedures as per manufacturer's specifications.

NOTE: This regulation shall not apply to junior sprinkler systems of less than 21 sprinkler heads and sprinkler systems designed and installed in accordance with NFPA-13D, (standard for the installation of sprinkler systems in one and two family dwellings and manufactured homes).

See F-340R Fire Protection Equipment Performance Report for additional procedures (where provided).

N. Standpipe Systems:

Determine that all equipment is in proper operating condition and well maintained in accordance with applicable portions of NFPA-14 and Title 19/NFPA 25 California Edition

- (1) **Class I Dry and Class III (Class III Combination of Class I Wet and Class II Wet):**
- (a) **Fire Department Connections:** Ensure that appropriate inlet connections are provided in operable condition. Verify that approved signs are in place and have the correct information. If signs are missing or incorrect, the Certified Tester shall place the information in section V of the F-340R Fire Protection Equipment Performance Report for Fire Department inspection/follow-up.
 - (b) **Flush Fire Department Connection** and piping using an approved method to remove obstructions and/or debris from the inlet connection and piping as stated in Section 4-M-(a).
 - (c) **Air Test:** Air test dry systems to a maximum of 25 psi for 30 minutes to determine if the system leaks. This is to avoid water damage to the building if piping has been damaged or disconnected.

NOTE: An air test is not required on outside piping.

(d) **Hydrostatic Test:**

Class I Dry: Fill the system completely with water and note the static pressure (head) on a test gauge installed on the lowest inlet connection. Hydrostatically test the system at a pressure 50 PSI greater than the head pressure but in no case less than 200 PSI for 3 minutes.

Class III Combination: Use procedures found in Section 4-M (2) of this manual

SECTION 4 GENERAL TEST PROCEDURES

Class I Dry and Class III (Continued)

- (e) **Gauge Test:** Connect a test gauge at the test gauge connection to determine the reliability of existing gauges.
- (f) **Flow Test:** Flow a minimum of 500-gpm for the first standpipe through the most remote Fire Department outlets plus 250-gpm for each additional standpipe with the total supply not to exceed 1,250-GPM (1000 GPM in fully sprinklered buildings). The system shall maintain a residual pressure of not less than 65 PSI for three minutes. Buildings built after 1993 shall obtain a minimum residual pressure of 100 PSI. Test gauges shall be used to measure residual pressures and a pitot gauge and Underwriters' Playpipe nozzle or approved flow meter shall be used to measure water flow quantities.

Alternate Flow Test Procedure:

Connect a reliable water source and pressure gauge to the lowest inlet connection, Fill the system with water and record the static/head pressure (SP). Connect a flow meter and pressure gauge at the topmost outlet with 100 GPM flowing, measure the inlet pressure and the outlet residual pressure (RP). Calculate the friction loss (FL) by subtracting the combined static pressure and residual pressure from the inlet pressure obtained during the flow test. Use the following formula: **FL= IP- (SP+RP)**
The friction loss in the system shall not exceed 15 PSI.

NOTE: A separate flow test shall be conducted for each Fire Department connection and riser. Risers with spring loaded snoots shall have the required flow through the fire department connection from an auxiliary apparatus.

(g) Fire Department Hose Outlets:

- [1] Check each Fire Department outlet for any signs of corrosion and leakage.
- [2] Inspect and operate each outlet valve in the system to determine that it will function properly. Close valve and replace cap.
- [3] Where the static pressure at a hose connection exceeds 150 psi, an approved pressure-regulating valve shall be provided to limit the static pressure to 150 and provide a residual pressure between 80 and 125 psi with 300-gpm flowing
For systems installed after 1994 where the static pressure at a hose connection exceeds 175 the pressure-regulating valve shall be provided to limit the static pressure to 175 or higher as approved by the LAFD. Buildings built after 1994 shall have a residual pressure between 100 and 125 psi with 300-gpm flowing Where possible all valves shall be set at 125 psi while maintaining the 300 GPM requirement.

NOTE: Where static pressures on hose connections are above 150 or 175 are found the Chief's Regulation No. 4 Unit shall be contacted to verify the approved static pressure. In no case shall the static pressure of a pressure reducing valve be adjusted without a flow test to verify the approved residual pressure

- [4] Flow water from each Fire Department hose valve outlet not equipped with pressure regulating valves in a manner that will indicate the valve is fully operable and that there is appropriate water pressure at that outlet.
- [5] Check automatic drip connections, if provided, for proper function.

SECTION 4 GENERAL TEST PROCEDURES

Class I Dry and Class III (Continued)

(h) On-site Water Supply:

- [1] Determine that filling for on-site water supply, if provided, operates when flow test is conducted.
- [2] Determine that air pressure and/or water supply gauges, if provided, are in proper working condition.

(i) Hose:

Disconnect hose, from Fire Department outlet (if provided). Examine full length of hose section for mildew, cuts, abrasions, and other deterioration. Check hose couplings, gaskets, and nozzle for damage and obstruction. Hydrostatic testing of fire hose shall be conducted in accordance with NFPA 1962, Chapter 5. and title 19/NFPA 25 California edition

(2) Class II (Wet) Standpipes:

- (a) **Flow Test:** Determine that the system and its water supply will meet one of the following standards according to the date of its installation. Test gauges shall be used to measure residual pressures and an approved flow meter shall be used to measure water flow quantities. The required water flow must be maintained for at least thirty seconds from systems supplied by street mains or gravity tanks and at least two minutes from systems supplied by booster pumps or pressure tanks:
- (b) The following Class II and Class H systems shall have a minimal residual pressure and flow at the topmost outlet of each riser:

NOTE: 1-1/2" Hose stations connected to automatic sprinkler systems installed under NFPA 13 are not required to meet flow requirements of NFPA 14 or Title 19/NFPA 25 California Edition.

- [1] Systems Installed prior to 1948: 8 psi with 20-gpm flowing
- [2] Systems Installed from 1948 to 1959: 12 psi with 35-gpm flowing
- [3] Systems Installed from 1960 to 1982: 15 psi with 35-gpm flowing
- [4] Systems Installed after 1982: 65 psi with 100-gpm flowing
- [5] **Class H Standpipe Systems Installed prior to 1996:** 108 psi with 90-gpm flowing.
- [6] **Class H Standpipe Systems Installed after 1996:** 65 psi with 100-gpm flowing.

(c) On-site Water Supply:

- [1] Determine that filling for on-site water supply, if provided, operates when flow test is conducted.
- [2] Determine that air pressure and/or water supply gauges, if provided, are in proper working condition.

SECTION 4 GENERAL TEST PROCEDURES

Class II (Wet) Standpipes:

(d) Outlets:

- [1] Check each outlet for signs of corrosion and leakage.
- [2] Where the residual pressure at a 1-1/2 inch outlet exceeds 100 psi, an approved pressure-regulating device shall be provided to limit the residual pressure to 100 psi.
- [3] Flow water from each outlet in the system in a manner that will indicate the valves are fully operable and that there is water pressure at that outlet.

(e) Hose:

Inspect hose at each outlet. Examine full length of hose section for mildew, cuts, abrasions, and other deterioration. Check hose couplings for gaskets, damage and obstructions. - Check for proper nozzles. Unlined hose shall be equipped with smoothbore nozzles; lined hose shall be equipped with adjustable spray nozzles.

(f) Service Testing:

Hydrostatic testing of fire hose shall be conducted in accordance with NFPA-1962 Chapter 5. and Title 19/NFPA 25 California edition

EXCEPTION:

Unlined hose shall not be hydrostatically tested. Hose shall be replaced with lined hose when replacement is necessary.

(3) Combined Standpipe/ Sprinkler Systems (wet):

Determine that all equipment is in proper operating condition and well maintained in accordance with applicable portions of NFPA-14, NFPA 13 and Title 19/NFPA 25-California Edition

NOTE: 1 1/2" Hose stations connected to automatic sprinkler systems installed under NFPA 13 are not required to meet flow requirements of NFPA 14 or Title 19/NFPA 25 California Edition.

- (a) **Fire Department Connection:** Determine that appropriate inlet connections are provided and are in operable condition. Determine that approved signs have been provided. Incorrect or missing signs shall be noted by the Certified Tester in section V of the F-340R Automatic Fire Sprinkler 5 year Fire Protection Equipment Performance Report for Fire Department follow-up inspection.
- (b) **Flush the Fire Department Inlet Connection and Piping:** Use the following method to remove obstructions and/or debris from the Fire Department inlet connection and piping:

SECTION 4 GENERAL TEST PROCEDURES

Combined Standpipe/ Sprinkler Systems (wet): (continued)

(c) Back Flush:

- [1] With the main system shut-off valve closed and the piping to the Fire Department connection drained, disassemble and inspect the check valve, then remove, reverse, or block open the clapper in the check valve. Reassemble check valve.
- [2] Open the main system shut-off and flow adequate water backwards through the Fire Department connection inlet to assure that all debris is cleared from the inlet piping and Fire Department connection. Restore system to normal.

NOTE: This is the preferred method of clearing the Fire Department connection.

(d) Hydrostatic Test:

Systems Affected: Dorothy Mae, Automatic Wet, Combined Standpipe/Sprinkler, Class III Standpipe

Perform a hydrostatic test of the FDC piping in accordance with NFPA 13 2010 edition Chapter 24, Section 24.2.1.10 for the required PSI and Chapter 6 NFPA 25 2013 California edition Table 6.3.1.6 for the test duration.

The piping between the fire department connection and check valve shall be hydrostatically tested at 150 psi for 3 minutes every five years.

NOTE: This test is required where the distance between the FDC piping and the check valve is greater than 3 feet and/or all FDC underground piping back to the check valve.

(e) Conduct Air Test of FDC piping (where necessary)

Air test 25 psi for 30 minutes to check for leakage where water damage to property may occur.

(f) Conduct Hydro Static Test:

Hydrostatically test the piping between the FDC and the check valve @ 150 psi for 3 minutes

Check for a significant drop in pressure or visual leakage. A slight fluctuation in pressure may occur due to a change in temperature. This is not considered a pressure loss. A Very small bead of water may also appear at a fitting. This is not considered a leak unless the bead of water continues to grow and drip.

Equipment needed: Air Compressor, Electric Hydrostatic Test Pump or Fire Pump Apparatus, Pressure gauges.

- (g) Main Drain/Water Supply Test:** With the main drain valve closed, note the static pressure reading on the gauge. Fully open the main drain valve with water flowing, note the residual reading on the pressure gauge. Close main drain valve and note pressure gauge reading. A slow return on pressure gauge to original static reading may indicate a closed valve or obstructions in water supply lines.

- (h) Gauge Tests:** Connect a test gauge at the test gauge opening to determine the reliability of existing gauges.

SECTION 4 GENERAL TEST PROCEDURES

Combined Standpipe/ Sprinkler Systems (wet): (continued)

(I) On-site Water Supply:

Determine that filling for on-site water supply, if provided, operates when flow test is conducted.

Determine that the air pressure and/or water supply gauges on dry, pre-action, and deluge systems are in proper working condition.

NOTE: Tests of dry, pre-action and deluge systems will be done by using the bypass connection.

(j) Sprinkler Inspection:

[1] Inspect system for proper sprinkler head placement, orientation, type, proper hangers, seismic bracing, and signs of corrosion, physical damage, or paint on the cap, fusible link/bulb or on the deflector in an amount that will change the sprinkler pattern

NOTE: Sprinklers protecting spray-coating areas shall be protected against over-spray residue. Sprinklers shall be protected using plastic bags having a maximum thickness of 0.003 inches, [0.076mm] or with small paper bags. Coverings shall be replaced when deposits or residue accumulate.

[2] Inspect spare sprinkler heads box for correct number and type of sprinkler heads and proper wrench. The number of spare sprinkler heads shall be as follows:

- Less than 300 heads - not less than 6 sprinklers heads.
- 300 to 1,000 heads - not less than 12 sprinklers heads.
- Over 1,000 heads - not less than 24 sprinklers heads.

NOTE: Improper sprinkler installation issues e.g. broken hangers; seismic bracing lack of coverage, etc. shall be indicated in section V of F-340R Fire Protection Equipment Performance Report for follow-up by the Department of Building and Safety. Fire code issues such as missing/incorrect signage or spare sprinkler heads etc. are handled in similar same manner except the follow-up inspection will be made by fire department personnel.

(k) Sprinkler Testing:

- [1] Sprinkler heads in operation over 50 years and sprinkler heads known to have an abnormally high failure rate listed by the Chief shall have a representative sample of not less than four sprinklers or 1 percent, whichever is greater tested by an approved testing laboratory for evaluation. If one sprinkler fails, all sprinklers in the system represented by the submitted sample shall be replaced. This testing procedure shall be repeated at 10 year intervals after the initial 50 year test.
- [2] Sprinkler heads manufactured prior to 1920 shall be replaced.
- [3] Fast response sprinkler heads that have been in service for 20 years shall be tested and re-tested at 10-year intervals.
- [4] Representative samples of solder-type sprinklers with a temperature classification of Extra High (325 degrees /163 degrees C) or greater that is exposed to continuous maximum allowable ambient temperature conditions shall be tested at five-year intervals

SECTION 4 GENERAL TEST PROCEDURES

Combined Standpipe/ Sprinkler Systems (wet): (continued)

- (l) **Sprinkler Pressure Reducing Valves: (PRV's)** Sprinkler systems with static pressures in excess of 175 psi shall be equipped with approved pressure regulating devices.
- (m) **Sprinkler PRV Full Flow Test:** Verify that the PRV will maintain the pressure on the system side of the valve to no more than of 175 psi by opening the sectional drain valve and reading the gauges on the supply and system side of the valve.
- (n) **Inspector's Test Valve Operation Test:** Open the Inspector's test valve at the most remote location from the main control valve in the system. The alarm must sound within 5 minutes for mechanical water motor-type alarms and within 20 to 60 seconds for electrically monitored water flow switches.
- (o) **Valves:** Operate, inspect, and lubricate post indicator valves, underground gate valves, OS&Y valves, and one-way check valves to determine that they are in good operating condition and do not leak. Return all valves to their normal position.

NOTE: Control valves that are not supervised shall be secured in their normal position using a break-a-way lock and chain. Certified Tester shall indicate in section V of the F-340R Fire Protection Equipment Performance Report for Fire Department follow-up/inspection

- (p) **Tamper Supervisory Switches** Check tamper supervision circuits by moving valve from its normal position two revolutions or 1/5 the travel of the valve whichever is less. This shall initiate a distinctive signal at the fire alarm panel, if provided.
- (q) **Sprinkler Wrench:** A special sprinkler wrench[s] shall be provided and kept in the cabinet to be used in the removal and installation of sprinklers. A sprinkler wrench shall be provided for each type of sprinkler installed.
- (r) **Flow Test:**
[1] Flow a minimum of 500-GPM for the first standpipe through the most remote Fire Department outlets plus 250-GPM for each additional standpipe with the total supply not to exceed 1,250-GPM. (1000 GPM in fully sprinklered buildings)The system shall maintain a residual pressure of not less than 65 PSI for three minutes. Buildings built after 1993 should obtain 100 PSI. See F-340R Combined Standpipe and Sprinkler Performance Report for additional information Test gauges shall be used to measure residual pressures and a pitot gauge and Underwriters' Playpipe nozzle or approved flow meter shall be used to measure water flow quantities.

EXCEPTION:

Existing retrofit buildings as regulated by section 91.8604 of the Los Angeles Building Code that are 75 feet to 275 feet, shall flow a minimum of 750-GPM at 65 psi at the roof. Buildings greater than 275 feet shall flow a minimum of 1000-GPM at 65 psi at the roof.

[2] Ensure fire pump starts automatically upon water flow

NOTE: A separate flow test shall be conducted for each Fire Department Connection and riser.

SECTION 4 GENERAL TEST PROCEDURES

Combined Standpipe/Sprinkler Systems (Wet): Continued

Alternate Flow Test Procedure (systems calculated for sprinkler demand only)

Connect a reliable water source and pressure gauge to the lowest inlet connection, Fill the system with water and record the static/head pressure (SP). Connect a flow meter and pressure gauge at the topmost outlet with 100 GPM flowing, measure the inlet pressure and the outlet residual pressure (RP). Calculate the friction loss (FL) by subtracting the combined static pressure (head) and residual pressure from the inlet pressure obtained during the flow test.

Use the following formula: **FL= IP- (SP+RP).**

The friction loss in the system shall not exceed 15 PSI.

NOTE The Certified Tester is required to hold a valid Class I certification to perform the alternate flow test procedure

(s) Fire Department Hose Outlets and Pressure Reducing Valves

- [1] Check each Fire Department outlet for any signs of corrosion and leakage.
- [2] Inspect and operate each outlet valve in the system to determine that it will function properly. Close valve and replace cap.
- [3] **Static Pressure:** Where the static pressure at a hose connection exceeds 150 psi, an approved pressure-regulating valve shall be provided to limit the static pressure to 150.
- [4] **Residual Pressure:** A residual pressure between 80 and 125 psi with 300-gpm flowing is required.

EXECTION: Buildings built after 1994 shall have a residual pressure between 100 and 125 psi with 300-gpm flowing. Where possible all valves shall be set to flow 125 psi while maintaining 300 GPM.

NOTE: Where static pressures above 150 or 175 are found, the Chief's Regulation No. 4 Unit shall be contacted to verify the approved static pressure and residual flow. In no case shall the static pressure of a pressure reducing valve be adjusted without conducting a full flow test to verify the approved residual pressure.

- [5] Flow water from each Fire Department hose valve outlet not equipped with pressure regulating valves in a manner that will indicate the valve is fully operable and that there is appropriate water pressure at each outlet.
- [6] Check automatic drip connections, if provided, for proper function.

(t) On-Site Water Supply:

- [1] Determine that filling for on-site water supply, if provided, operates when flow test is conducted.
- [2] Determine that air pressure and/or water supply gauges, if provided, are in proper working condition.

NOTE: Fire pump(s) must be operating during procedures (m) (r) and (s) above.

SECTION 4 GENERAL TEST PROCEDURES

Combined Standpipe/ Sprinkler Systems (wet): (continued)

NOTE: **Looped systems:** Combined Standpipe Systems equipped with looped standpipe risers shall be flow tested by shutting down one side of the system at a time and flowing water from the open side. Fire alarm initiation shall take place within 20 to 60 seconds. After both sides have been individually tested, a flow test with both flow valves open shall be conducted. Tamper valves shall be tested by moving valve from its normal position two revolutions or 1/5 the travel of the valve whichever is less. This shall initiate a trouble signal at the fire alarm panel.

NOTE: A separate flow test shall be conducted for each Fire Department connection and riser.

See F-340R Combined Standpipe and Sprinkler Fire Protection Equipment Performance Report for additional procedures

O. Supervising Station Alarm Systems

NOTE: The following configurations of Supervising Station Alarms may be found:

- **A Stand Alone Control Panel** or,
- **A Separate Control Panel Connected to a Fire Alarm Control Panel** or
- **An integrated Digital Alarm Communicator Module Component of a Fire Alarm Control Panel**

NOTE: Integrated communicators are tested as part of the fire alarm system.

- [1] Test all fire protection equipment, systems, and devices, which are supervised by an approved supervising station monitoring company for their proper operating condition, supervision and maintenance in accordance with NFPA-72.
- [2] Maintaining a chronology of all testing.
- [3] Determine that the transmitter panel is operating properly and the approved system description, sequence of operation and operating instructions are available.
- [4] Notify LAFD fire dispatch, the supervising station monitoring company and building occupants prior to conducting tests.
- [5] Actuate each water flow alarm device by use of the Inspector's test valve.
- [6] Actuate all other fire alarm devices, supervisory devices and transmitters for proper operation and supervision.
- [7] Determine that the system has two approved methods /pathways of transmitting the signal to the supervising station monitoring company.
- [8] Check primary and secondary power supplies

At the conclusion of the test notify the supervising station monitoring company, to determine that the supervising station properly supervised and received all test signals. Return system to the normal mode, and notify building occupants that the test is complete.

See F-340R Supervising Station Alarm Fire Protection Equipment Performance Report for additional procedures

SECTION 5 – APPLICATION

The provisions of this regulation do not supersede, nullify, or in any manner abrogate any other provision of the Los Angeles City Fire Code. Compliance with the provisions of this regulation does not relieve any person from compliance with applicable provisions of any County, State, or Federal Law.

**Los Angeles City Fire Department
Chief's Regulation No. 4 Requirements**

APPENDIX

GUIDELINES FOR SEQUENCE OF OPERATION FOR LIFE SAFETY SYSTEMS IN HIGH-RISE BUILDINGS

	Manual Pull Station	Elevator Lobby Smoke Detector	Area Smoke Detector	Return Air Duct Smoke Detector	Elevator Shaft Smoke Detector	Sprinkler Water Flow Switch	Sprinkler Valve Tamper Switch	Special Extinguishing System	Building Power Failure
Annunciate @ FCR (alarm and trouble)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Annunciate @ 24-hour attended remote location (alarm and trouble)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Activate Audible Alarm Signal on floor of alarm	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No
Shut Down All Air Handling (HVAC) on floor of alarm	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No
Release All Electromagnetically Held Doors on floor of alarm	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes
Activate Smoke Evacuation System on floor of alarm	Yes	Yes	Yes	Yes	No	Yes	No	No	No
Recall All Elevators serving floor of alarm	No	Yes	No	No	Yes	No	No	No	Yes
Release All Stair Shaft Door Locks in building	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes
Activate All Stair Shaft Pressurization Fans in building	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No
Open Elevator Shaft Smoke Damper	No	No	No	No	Yes	No	No	No	No
Release Approved Elevator Security Door Locks	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes

Attachment

4

Attachment 4
Full Conveyance Asset List

Asset #	Description	Serial #	Location	parent	Legacy #	Status	Site ID	Address Code	Formal Address
1045	Escalator		10829		T2-ES-04	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1047	Escalator		10830		T2-ES-05	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1048	Escalator		10901		T2-ES-06	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1049	Escalator		10828		T2-ES-03	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1063	Escalator		10827		T2-ES-02	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1101	Escalator	N/A	10833		T2-ES-13	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1111	Escalator	N/A	10834		T2-ES-14	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1379	Escalator		15327		T6-ES-06	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
1388	Escalator		11860		T6-ES-01	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
1390	Escalator		11861		T6-ES-02	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
1456	Escalator		11915		T6-ES-10	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
1457	Escalator		12058		T6-ES-11	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
1478	Escalator		11994		T6-ES-04	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
1479	Escalator		15325		T6-ES-03	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
3245	Escalator		11273		T4-ES-06	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3246	Escalator		11274		T4-ES-07	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3247	Escalator		11275		T4-ES-10	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3248	Escalator		11276		T4-ES-11	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3249	Escalator		11201		T4-ES-12	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3623	Escalator		11531		T5-ES-03	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
3626	Escalator		11658		T5-ES-01	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
3627	Escalator		11530		T5-ES-02	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
3628	Escalator		11535		T5-ES-10	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
3629	Escalator		11536		T5-ES-11	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
3630	Escalator		11660		T5-ES-04	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
3743	Escalator		11734		T5-ES-14	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
3744	Escalator		11733		T5-ES-13	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
3746	Escalator		11732		T5-ES-12	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
4688	Escalator	179178	12124		T7-ES-01	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4690	Escalator		12126		T7-ES-03	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4691	Escalator		12127		T7-ES-04	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4702	Escalator		12132		T7-ES-16	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4703	Escalator		12206		T7-ES-17	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4704	Escalator		12133		T7-ES-18	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4705	Escalator		15328		T7-ES-07	INACTIVE	LAX	TER07	700 World Way, Los Angeles, CA 90045
4706	Escalator		15329		T7-ES-08	INACTIVE	LAX	TER07	700 World Way, Los Angeles, CA 90045
4942	Escalator		12377		T8-ES-01	OPERATING	LAX	TER08	800 World Way, Los Angeles, CA 90045
4943	Escalator		12378		T8-ES-02	OPERATING	LAX	TER08	800 World Way, Los Angeles, CA 90045
5372	Escalator		13222		C1ES01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5373	Escalator	162672	13223		C1ES02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5374	Escalator	162671	13224		C1ES03	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5375	Escalator	162674	13226		C2ES01 / ES1-G148	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5377	Escalator	162675	13227		C2ES02 / ES2-G148	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5383	Escalator	162676	13228		C2ES03 / ES3-G148	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5385	Escalator	162677	13231		C3ES01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5386	Escalator	162678	13232		C3ES02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5402	Escalator	162681	13237		C4ES01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5403	Escalator	162680	13238		C4ES02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5405	Escalator	162679	13239		C4ES03	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5406	Escalator		13245		C5ES01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5407	Escalator		13248		C6ES01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5408	Escalator		13249		C6ES02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5409	Escalator	162687	13250		C7ES01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5410	Escalator	162686	13251		C7ES02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5412	Escalator	162690	13253		C7ES04	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5413	Escalator	162689	13254		C7ES05	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045

Attachment 4
Full Conveyance Asset List

Asset #	Description	Serial #	Location	parent	Legacy #	Status	Site ID	Address Code	Formal Address
5414	Escalator		13255		C7ES06	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5415	Escalator		13256		C7ES07	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
9072	Escalator		10617		T1-ES-06	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
9089	Escalator		10613		T1-ES-01	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
9375	Escalator		10616		T1-ES-05	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
9379	Escalator		10832		T2-ES-12	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
9380	Escalator		10770		T2-ES-10	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
9393	Escalator		11203		T4-ES-16	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
9394	Escalator		11280		T4-ES-15	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
10001	Escalator		11862		T6-ES-05	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
10002	Escalator		11865		T6-ES-08	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
10003	Escalator		11866		T6-ES-09	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
10116	Escalator		11867		T6-ES-14	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
11715	Escalator	CN 680814	13309		ES2-BC	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14543	Escalator	CN 680798	13294		ES1-G130	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14544	Escalator	162624	13299		ES1-G150	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14545	Escalator		13300		ES1-G151	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14546	Escalator		13302		ES1-G153	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14547	Escalator	162626	13301		ES1-G152	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14548	Escalator	162628	13303		ES1-G154	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14549	Escalator		13304		ES1-G155	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14550	Escalator		13306		ES1-G157	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14551	Escalator	162630	13305		ES1-G156	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14552	Escalator		13307		ES1-G159	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14554	Escalator	CN 680799	13295		ES1-G131	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14555	Escalator	CN 680800	13296		ES1-G132	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14556	Escalator	CN 680801	13297		ES1-G133	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14557	Escalator	CN 680802	13298		ES1-G134	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14558	Escalator	680812	13308		ES1-N	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14559	Escalator	CN 680813	13310		ES2-N	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15261	Escalator		15332		ES1-G122 (formerly TBIT-NE4)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15302	Escalator		10831		T2-ES-11	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
15307	Escalator		13450		C11ES02 (formerly CE-9)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15318	Escalator		13293		ES1-BC	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15337	Escalator		13265		C9ES06 (formerly CE-6)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15349	Escalator		11533		T5-ES-06	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
15350	Escalator		11534		T5-ES-07	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
15351	Escalator		11664		T5-ES-08	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
15352	Escalator		11665		T5-ES-09	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
15357	Escalator		14345		T5-ES-16	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
15358	Escalator		11596		T5-ES-17	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
15359	Escalator		15323		T5-ES-15	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
15834	Escalator		13451		ES1-G123, NE-10	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15988	Escalator		12473		T4C-ES-17	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
15989	Escalator		12468		T4C-ES-18	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
16021	Escalator		13263		C9ES01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
16023	Escalator		13264		C9ES02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
16026	Escalator		14540		C11ES01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
16130	Escalator		14545		C9ES03	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
16131	Escalator		14546		C9ES04	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
16152	Escalator	681369	12459		T4C-ES-19	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
16153	Escalator	681370	12461		T4C-ES-20	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
16211	Escalator	681371	12471		T4C-ES-21	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
19801	Escalator	681469	18916		C1-ES01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19820	Escalator	681493	18932		N7-ES02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19821	Escalator	681492	18246		N7-ES01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045

Attachment 4
Full Conveyance Asset List

Asset #	Description	Serial #	Location	parent	Legacy #	Status	Site ID	Address Code	Formal Address
19822	Escalator	681495	18926		N8-ES01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19823	Escalator	681496	18931		N8-ES02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19824	Escalator	681494	18933		N7-ES03	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19825	Escalator	681490	18934		N5-ES01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19826	Escalator	681491	18935		N5-ES02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19827	Escalator	681489	18937		N4-ES02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19828	Escalator	681488	18936		N4-ES01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19829	Escalator	681487	18939		N2-ES02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19835	Escalator	681475	18940		C2-ES05	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19841	Escalator	681470	18917		C1-ES02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19847	Escalator	681473	18928		C2-ES01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19848	Escalator	681474	18927		C2-ES02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19849	Escalator	681480	18929		C4-ES01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19850	Escalator	681481	18930		C4-ES02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19853	Escalator	681483	18925		C4-ES04	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19854	Escalator	681485	18915		C2-ES04	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19855	Escalator	681484	18914		C2-ES03	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19859	Escalator	681472	18919		C1-ES04	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19860	Escalator	681471	18918		C1-ES03	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19862	Escalator	681479	18920		C3-ES04	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19863	Escalator	681478	18921		C3-ES03	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19864	Escalator	681477	18922		C3-ES02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19865	Escalator	681476	18923		C3-ES01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19891	Escalator	681482	18924		C4-ES03	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19951	Escalator	681486	18938		N2-ES01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19974	Escalator	681465	18943		G1-ES02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
19975	Escalator	681467	18945		G1-ES04	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
19976	Escalator	681468	18946		G1-ES05	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
19977	Escalator	681464	18942		G1-ES01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
19983	Escalator	681466	18944		G1-ES03	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
21868	Escalator	ESL8280-12	18884		T1-ES-12 (1-1-TC02)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
21869	Escalator	ESL8280-11	18884		T1-ES-11 (1-1-TC02)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
21870	Escalator	ESL8282-16	18884		T1-ES-16 (1-1-TC02)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
21871	Escalator	ESL8282-15	18884		T1-ES-15 (1-1-TC02)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
21872	Escalator	ESL8281-13	18884		T1-ES-13 (1-1-TC02)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
21876	Escalator	ESL8281-14	18884		T1-ES-14 (1-1-TC02)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
21877	Escalator	ESL8279-09	18884		T1-ES-09 (1-1-TC02)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
21878	Escalator	ELL8283-07	18885		T1-ES-07 (1-2-TZ13)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
21879	Escalator	ESL8283-08	18885		T1-ES-08 (1-2-TZ13)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
21925	Escalator	ESL8279-10	18884		T1-ES-10 (1-1-TC02)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
22513	Escalator	681497	18941		S2-ES01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
23128	Escalator	N/A	19035		ITFW-ES-01	OPERATING	LAX	G0704	6100 94th Street, Los Angeles, CA 90045
23129	Escalator	N/A	19035		ITFW-ES-02	OPERATING	LAX	G0704	6100 94th Street, Los Angeles, CA 90045
23130	Escalator	N/A	19037		ITFW-ES-03	OPERATING	LAX	G0704	6100 94th Street, Los Angeles, CA 90045
23131	Escalator	N/A	19037		ITFW-ES-04	OPERATING	LAX	G0704	6100 94th Street, Los Angeles, CA 90045
23132	Escalator	N/A	19038		ITFW-ES-05	OPERATING	LAX	G0704	6100 94th Street, Los Angeles, CA 90045
23133	Escalator	N/A	19038		ITFW-ES-06	OPERATING	LAX	G0704	6100 94th Street, Los Angeles, CA 90045
23134	Escalator	N/A	19035		ITFW-ES-07	OPERATING	LAX	G0704	6100 94th Street, Los Angeles, CA 90045
23135	Escalator	N/A	19035		ITFW-ES-08	OPERATING	LAX	G0704	6100 94th Street, Los Angeles, CA 90045
23136	Escalator	N/A	19037		ITFW-ES-09	OPERATING	LAX	G0704	6100 94th Street, Los Angeles, CA 90045
23137	Escalator	N/A	19037		ITFW-ES-10	OPERATING	LAX	G0704	6100 94th Street, Los Angeles, CA 90045
23138	Escalator	N/A	19038		ITFW-ES-11	OPERATING	LAX	G0704	6100 94th Street, Los Angeles, CA 90045
23139	Escalator	N/A	19038		ITFW-ES-12	OPERATING	LAX	G0704	6100 94th Street, Los Angeles, CA 90045
36867	Escalator		10675		T1-ES-03	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
36868	Escalator		10676		T1-ES-04	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
36954	Escalator	681394	12204		T7-ES-09	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045

Attachment 4
Full Conveyance Asset List

Asset #	Description	Serial #	Location	parent	Legacy #	Status	Site ID	Address Code	Formal Address
36955	Escalator	681395	12205		T7-ES-10	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
36956	Escalator	681390	12272		T7-ES-11	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
36957	Escalator	681391	12273		T7-ES-12	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
36958	Escalator	681392	12130		T7-ES-13	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
36959	Escalator	681393	12274		T7-ES-14	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
40381	Escalator		12267		T7-ES-05	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
42043	Escalator		16890		T1-ES-02	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
14889	Freight Elevators		10232		CUP-01	OPERATING	LAX	L0505	275 Center Way, Los Angeles, CA 90045
15310	Freight Elevators		14840		Records Retention	OPERATING	LAX	INDG44	6060 Avion Dr., Los Angeles, CA
15360	Freight Elevators		11527		T5-EL-14	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
21862	Freight Elevators	24326	18883		T1-EL-08 (1-0-TA13)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
5475	Moving Walkway		13615		MW7-S05	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5476	Moving Walkway		13614		MW6-S05	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5477	Moving Walkway		13611		MW5-S05	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5478	Moving Walkway		13604		MW3-S04	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5479	Moving Walkway		13602		MW2-S04	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5480	Moving Walkway		13600		MW1-S04	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
10254	Moving Walkway		11455		T4-MWW-17	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
10255	Moving Walkway		11456		T4C-MWW-19	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
10256	Moving Walkway		12134		T7-MWW-15	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
11721	Moving Walkway	CN 680837	13601		MW2-N04	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11722	Moving Walkway	CN 680845	13603		MW3-N05	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14553	Moving Walkway		13609		MW4-S04	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15712	Moving Walkway		13598		MW1-N04	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15990	Moving Walkway		12475		T4C-MWW-20	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
15991	Moving Walkway		12476		T4C-MWW-21	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
15992	Moving Walkway		12477		T4C-MWW-22	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
15993	Moving Walkway		12478		T4C-MWW-23	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
19872	Moving Walkway	681463	18949		N6-MW02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19873	Moving Walkway	681461	18947		N3-MW02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19874	Moving Walkway	681460	18948		N3-MW01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19875	Moving Walkway	681462	18950		N6-MW01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19947	Moving Walkway	681458	18957		P4-MW03	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19979	Moving Walkway	681453	18952		P1-MW02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19980	Moving Walkway	681455	18954		P1-MW04	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19981	Moving Walkway	681454	18953		P1-MW03	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19982	Moving Walkway	681452	18951		P1-MW01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19984	Moving Walkway	681457	18956		P4-MW02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19985	Moving Walkway	681456	18955		P4-MW01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19986	Moving Walkway	681459	18958		P4-MW04	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
1044	Passenger Elevators		10819		T2-EL-02	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1100	Passenger Elevators	91126	10824		T2-EL-08	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1232	Passenger Elevators	87553	10943		T2-EL-05	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1378	Passenger Elevators	178908	11856		T6-EL-01	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
1460	Passenger Elevators	N/A	11988		T6-EL-07	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
1461	Passenger Elevators	N/A	11989		T6-EL-08	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
1462	Passenger Elevators	N/A	15326		T6-EL-06	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
1607	Passenger Elevators		10604		T1-EL-01	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
1610	Passenger Elevators		10607		T1-EL-03 (Formerly T1-EL-04)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
1917	Passenger Elevators		10606		T1-EL-02 (Formerly T1-EL-03)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
1919	Passenger Elevators		10608		T1-EL-07 (Formerly T1-EL-05)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
3222	Passenger Elevators		11192		T4-EL-04	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3223	Passenger Elevators		11193		T4-EL-05	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3224	Passenger Elevators		11194		T4-EL-07	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3225	Passenger Elevators		11351		T4-EL-08	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3226	Passenger Elevators		11352		T4-EL-09	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045

Attachment 4
Full Conveyance Asset List

Asset #	Description	Serial #	Location	parent	Legacy #	Status	Site ID	Address Code	Formal Address
3227	Passenger Elevators		11268		T4-EL-13	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3228	Passenger Elevators		11356		T4-EL-14	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3229	Passenger Elevators		11263		T4-EL-06	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3337	Passenger Elevators		11859		T6-EL-09	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
3478	Passenger Elevators		11357		T4-EL-15	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3479	Passenger Elevators		11189		T4-EL-01	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3483	Passenger Elevators		11197		T4-EL-12	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3603	Passenger Elevators		11657		T5-EL-06	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
3605	Passenger Elevators		11687		T5-EL-07	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
3606	Passenger Elevators		11616		T5-EL-08	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
3607	Passenger Elevators		11656		T5-EL-05	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
4669	Passenger Elevators	181231	12120		T7-EL-03	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4671	Passenger Elevators		12194		T7-EL-09	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4674	Passenger Elevators		12122		T7-EL-07	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4675	Passenger Elevators	CP-PHD-84417	12123		T7-EL-08	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4677	Passenger Elevators		12121		T7-EL-04	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4922	Passenger Elevators		12376		T8-EL-05	OPERATING	LAX	TER08	800 World Way, Los Angeles, CA 90045
4923	Passenger Elevators		12374		T8-EL-01	OPERATING	LAX	TER08	800 World Way, Los Angeles, CA 90045
4924	Passenger Elevators		12415		T8-EL-02	OPERATING	LAX	TER08	800 World Way, Los Angeles, CA 90045
5428	Passenger Elevators		13219		C1EL01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5429	Passenger Elevators		13220		C1EL02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5430	Passenger Elevators		13221		C1EL03	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5431	Passenger Elevators		13225		C2EL01 (EL1-G148)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5432	Passenger Elevators		13229		C3EL01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5433	Passenger Elevators		13230		C3EL02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5434	Passenger Elevators		13233		C4EL01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5435	Passenger Elevators		13234		C4EL02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5436	Passenger Elevators		13235		C4EL03	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5437	Passenger Elevators		13236		C4EL04	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5438	Passenger Elevators		13240		C5EL01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5439	Passenger Elevators		13241		C5EL02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5440	Passenger Elevators		13242		C5EL03	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5441	Passenger Elevators		13243		C5EL04	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5442	Passenger Elevators		13244		C5EL05	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5443	Passenger Elevators		13246		C6EL01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5444	Passenger Elevators		13247		C6EL02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5445	Passenger Elevators		13258		C8EL01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5446	Passenger Elevators		13259		C8EL02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5447	Passenger Elevators		13260		C8EL03	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5448	Passenger Elevators		13261		C8EL04	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5449	Passenger Elevators		13262		C8EL05	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5450	Passenger Elevators		13273		EL1-G150	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5451	Passenger Elevators		13274		EL1-G151	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5452	Passenger Elevators		13275		EL1-G152	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5453	Passenger Elevators		13276		EL1-G153	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5454	Passenger Elevators		13277		EL1-G154	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5455	Passenger Elevators		13278		EL1-G155	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5456	Passenger Elevators		13279		EL1-G156	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5457	Passenger Elevators		13280		EL1-G157	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5870	Passenger Elevators		10565		Badging Office	OPERATING	LAX	R0511	7333 World Way West, Los Angeles, CA 90045
5871	Passenger Elevators		10100		AE-01	OPERATING	LAX	J0506	1 World Way, Los Angeles, CA 90045
5872	Passenger Elevators		10114		AE-02	OPERATING	LAX	J0507	1 World Way, Los Angeles, CA 90045
5873	Passenger Elevators		14827		Telecomm	OPERATING	LAX	J0502	10285 Post Way, Los Angeles, CA 90045
5874	Passenger Elevators		10122		Police HQ	OPERATING	LAX	J0705	6320 W. 96th Street Los Angeles, CA 90045
5875	Passenger Elevators		10173		PS1-01 (PS101-01)	OPERATING	LAX	K0603	101 World Way, Los Angeles, CA 90045
5876	Passenger Elevators		10174		PS1-02 (PS101-02)	OPERATING	LAX	K0603	101 World Way, Los Angeles, CA 90045

Attachment 4
Full Conveyance Asset List

Asset #	Description	Serial #	Location	parent	Legacy #	Status	Site ID	Address Code	Formal Address
5877	Passenger Elevators		10175		PS1-03 (PS101-03)	OPERATING	LAX	K0603	101 World Way, Los Angeles, CA 90045
5878	Passenger Elevators		10176		PS1-04 (PS101-04)	OPERATING	LAX	K0603	101 World Way, Los Angeles, CA 90045
5879	Passenger Elevators		10243		PS2B-01 (PS299-01)	OPERATING	LAX	L0508	299 World Way, Los Angeles, CA 90045
5880	Passenger Elevators		10244		PS2B-02 (PS299-02)	OPERATING	LAX	L0508	299 World Way, Los Angeles, CA 90045
5881	Passenger Elevators		10349		PS3-01 (PS301-01)	OPERATING	LAX	M0518	301 World Way, Los Angeles, CA
5882	Passenger Elevators		10350		PS3-02 (PS301-02)	OPERATING	LAX	M0518	301 World Way, Los Angeles, CA
5883	Passenger Elevators		10351		PS3-03 (PS301-03)	OPERATING	LAX	M0518	301 World Way, Los Angeles, CA
5884	Passenger Elevators		10352		PS3-04 (PS301-04)	OPERATING	LAX	M0518	301 World Way, Los Angeles, CA
5885	Passenger Elevators		10324		PS4-10 (PS401-10)	OPERATING	LAX	M0503	401 World Way, Los Angeles, CA 90045
5886	Passenger Elevators		10319		PS4-05 (PS401-05)	OPERATING	LAX	M0503	401 World Way, Los Angeles, CA 90045
5887	Passenger Elevators		10320		PS4-06 (PS401-06)	OPERATING	LAX	M0503	401 World Way, Los Angeles, CA 90045
5890	Passenger Elevators		10323		PS4-09 (PS401-09)	OPERATING	LAX	M0503	401 World Way, Los Angeles, CA 90045
5891	Passenger Elevators		10201		PS5-01 (PS501-01)	OPERATING	LAX	L0501	501 World Way, Los Angeles, CA 90045
5893	Passenger Elevators		10202		PS5-02 (PS501-02)	OPERATING	LAX	L0501	501 World Way, Los Angeles, CA 90045
5894	Passenger Elevators		10133		PS7-01 (PS701-01)	OPERATING	LAX	K0508	701 World Way, Los Angeles, CA 90045
5895	Passenger Elevators		10045		Asiana Cargo	OPERATING	LAX	E0503	5758 Century Blvd., Cargo Bldg. A, Los Angeles, CA 90045
5896	Passenger Elevators		10135		PS7-03 (PS701-03)	OPERATING	LAX	K0508	701 World Way, Los Angeles, CA 90045
5898	Passenger Elevators		10134		PS7-02 (PS701-02)	OPERATING	LAX	K0508	701 World Way, Los Angeles, CA 90045
5899	Passenger Elevators		10136		PS7-04 (PS701-04)	OPERATING	LAX	K0508	701 World Way, Los Angeles, CA 90045
5901	Passenger Elevators		10513		PS2A-01 (PS201-01)	OPERATING	LAX	PKS02A	251 World Way, Los Angeles, CA 90045
5902	Passenger Elevators		10514		PS2A-02 (PS201-02)	OPERATING	LAX	PKS02A	251 World Way, Los Angeles, CA 90045
5904	Passenger Elevators		10595		West Pad 210	OPERATING	LAX	T0504	7485 World Way West, Los Angeles, CA 90045
5905	Passenger Elevators		10596		West Pad 212	OPERATING	LAX	T0503	7485 World Way West, Los Angeles, CA 90045
5906	Passenger Elevators		10597		West Pad 214	OPERATING	LAX	T0502	7485 World Way West, Los Angeles, CA 90045
5907	Passenger Elevators		10598		West Pad 216	OPERATING	LAX	T0501	7485 World Way West, Los Angeles, CA 90045
5908	Passenger Elevators		10599		West Pad 218	OPERATING	LAX	T0601	7485 World Way West, Los Angeles, CA 90045
5909	Passenger Elevators		10154		THB-01	OPERATING	LAX	K0509	201 World Way, Los Angeles, CA 90045
5910	Passenger Elevators		10155		THB-02	OPERATING	LAX	K0509	201 World Way, Los Angeles, CA 90045
5911	Passenger Elevators		10156		THB-03	OPERATING	LAX	K0509	201 World Way, Los Angeles, CA 90045
5912	Passenger Elevators		10157		THB-04	OPERATING	LAX	K0509	201 World Way, Los Angeles, CA 90045
5916	Passenger Elevators		14039		PSF-01	OPERATING	LAX	G0601	6075Â AvionÂ Dr.
5917	Passenger Elevators		14040		PSF-02	OPERATING	LAX	G0601	6075Â AvionÂ Dr.
5936	Passenger Elevators		10581		MSD Admin	OPERATING	LAX	S0405	7411 World Way West, Los Angeles, CA 90045
6276	Passenger Elevators		13281		EL1-G159	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
6306	Passenger Elevators		15333		C6EL03	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
6307	Passenger Elevators		15334		C6EL04	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
10316	Passenger Elevators		10821		T2-EL-04	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
11033	Passenger Elevators	454256	13291		C9EL01 (formerly TBIT-15)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11035	Passenger Elevators		13285		C13EL03 (formerly TBIT-6)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11036	Passenger Elevators		13284		C16EL03 (formerly TBIT-5)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11037	Passenger Elevators		13287		C9EL04 (formerly TBIT-8)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11040	Passenger Elevators	45420	13217		C16EL01 (formerly TBIT-1)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11041	Passenger Elevators		13218		C16EL02 (formerly TBIT-2)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11042	Passenger Elevators	454252	13215		C13EL01 (formerly TBIT-3)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11043	Passenger Elevators	454251	13216		C13EL02 (formerly TBIT-4)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11044	Passenger Elevators	454254	13288		C12EL01 (Formerly TBIT #10)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11046	Passenger Elevators	456976	13289		C11EL01 (formerly TBIT-12)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11700	Passenger Elevators	CN 738311	13268		EL1-G130	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11701	Passenger Elevators	CN 738313	13270		EL1-G132	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11702	Passenger Elevators	CN 738315	13272		EL1-G134	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11703	Passenger Elevators	CN 738312	13269		EL1-G131	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11704	Passenger Elevators	CN 738314	13271		EL1-G133	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11705	Passenger Elevators	CN 738327	13267		EL1-BC	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11706	Passenger Elevators	CN 738328	13283		EL2-BC	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11707	Passenger Elevators	CN 738325	13282		EL1-N	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14112	Passenger Elevators		14469		EL2-S	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045

Attachment 4
Full Conveyance Asset List

Asset #	Description	Serial #	Location	parent	Legacy #	Status	Site ID	Address Code	Formal Address
14885	Passenger Elevators		10215		PS6-01 (PS601-01)	OPERATING	LAX	L0503	551 World Way, Los Angeles, CA
14886	Passenger Elevators		10216		PS6-02 (PS601-02)	OPERATING	LAX	L0503	551 World Way, Los Angeles, CA
14887	Passenger Elevators		10217		PS6-03 (PS601-03)	OPERATING	LAX	L0503	551 World Way, Los Angeles, CA
14888	Passenger Elevators		10218		PS6-04 (PS601-04)	OPERATING	LAX	L0503	551 World Way, Los Angeles, CA
14890	Passenger Elevators		10232		CUP-02	OPERATING	LAX	L0505	275 Center Way, Los Angeles, CA 90045
15254	Passenger Elevators		10090		EL1-G135 (formerly TBIT-N4)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15255	Passenger Elevators		15331		EL2-G123 (formerly TBIT-N5)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15257	Passenger Elevators		15330		EL1-G123 (formerly TBIT-N6)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15297	Passenger Elevators		11510		T5-EL-09	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
15298	Passenger Elevators		11526		T5-EL-11	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
15299	Passenger Elevators		11495		T5-EL-12	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
15300	Passenger Elevators		11496		T5-EL-13	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
15309	Passenger Elevators		10068		Records Retention	OPERATING	LAX	INDG44	6060 Avion Dr., Los Angeles, CA
15314	Passenger Elevators		13848		VNY FLY PS-01	OPERATING	LAX	VNY	7610 Woodley Ave, Van Nuys, CA 91406
15315	Passenger Elevators		13848		VNY FLY PS-02	OPERATING	LAX	VNY	7610 Woodley Ave, Van Nuys, CA 91406
15316	Passenger Elevators		13848		VNY FLY TERM	OPERATING	LAX	VNY	7610 Woodley Ave, Van Nuys, CA 91406
15317	Passenger Elevators		10548		AW-01	OPERATING	LAX	R0503	7301 World Way West, Los Angeles, CA 90045
15319	Passenger Elevators		13286		C12EL04 (formerly TBIT-7)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15320	Passenger Elevators		10548		AW-03	OPERATING	LAX	R0503	7301 World Way West, Los Angeles, CA 90045
15321	Passenger Elevators		10542		AW-04	OPERATING	LAX	R0501	7303 World Way West, Los Angeles, CA 90045
15322	Passenger Elevators		10536		Dobbs	OPERATING	LAX	Q0603	7271 World Way West, Los Angeles, CA 90045
15324	Passenger Elevators		10548		AW-02	OPERATING	LAX	R0503	7301 World Way West, Los Angeles, CA 90045
15325	Passenger Elevators		14857		Air Canada Cargo	OPERATING	LAX	E0201	5761 W. Imperial Hwy., Los Angeles, CA 90045
15333	Passenger Elevators		10823		T2-EL-07	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
15334	Passenger Elevators		13290		C10EL01 (formerly TBIT-13)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15338	Passenger Elevators		13292		C9EL05 (formerly TBIT-17)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15340	Passenger Elevators		10538		Fuel Farm, Coast Guard	OPERATING	LAX	Q0611	9601 Coast Guard Road, Los Angeles, CA
15353	Passenger Elevators		11521		T5-EL-01	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
15355	Passenger Elevators		11523		T5-EL-03	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
15356	Passenger Elevators		11524		T5-EL-04	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
15420	Passenger Elevators		10822		T2-EL-06	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
15841	Passenger Elevators		12416		T8-EL-03	OPERATING	LAX	TER08	800 World Way, Los Angeles, CA 90045
15987	Passenger Elevators	620181	12472		T4C-EL-16	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
16017	Passenger Elevators		14543		C9EL02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
16018	Passenger Elevators		14544		C9EL03	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
16019	Passenger Elevators		14541		C12EL02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
16020	Passenger Elevators		14542		C12EL03	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
16134	Passenger Elevators		11500		T5-EL-10	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
16148	Passenger Elevators	620178	12463		T4C-EL-17, VTC	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
16149	Passenger Elevators	620179	12464		T4C-EL-18, VTC	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
16150	Passenger Elevators	620180	12465		T4C-EL-19, CBIS Room	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
16210	Passenger Elevators		11846		T6-EL-10	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
19816	Passenger Elevators	638589	18188		N4-EL01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19817	Passenger Elevators	638587	18170		N2-EL01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19818	Passenger Elevators	638585	18197		N5-EL01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19819	Passenger Elevators	638592	18243		N7-EL01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19830	Passenger Elevators	638586	18245		N7-EL03	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19831	Passenger Elevators	638593	18244		N7-EL02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19832	Passenger Elevators	638591	18218		N6-EL01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19833	Passenger Elevators	638590	18189		N4-EL03	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19834	Passenger Elevators	638588	18171		N2-EL02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19838	Passenger Elevators	638567	18106		C2-EL04	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19839	Passenger Elevators	638595	18131		C4-EL04	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19840	Passenger Elevators	638576	18000		C4-EL01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19842	Passenger Elevators	638577	18907		C4-EL02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19843	Passenger Elevators	638578	18906		C4-EL03	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045

Attachment 4
Full Conveyance Asset List

Asset #	Description	Serial #	Location	parent	Legacy #	Status	Site ID	Address Code	Formal Address
19844	Passenger Elevators	638573	17970		C2-EL01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19845	Passenger Elevators	638574	18905		C2-EL02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19846	Passenger Elevators	638575	18904		C2-EL03	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19851	Passenger Elevators	641445	18908		S1-EL02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19852	Passenger Elevators	641444	18063		S1-EL01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19856	Passenger Elevators	638583	18022		N1-EL01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19857	Passenger Elevators	638584	18903		N1-EL02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19858	Passenger Elevators	865677	17956		C1-EL01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19867	Passenger Elevators	638568	18107		C2-EL05	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19868	Passenger Elevators	638582	18912		G1-EL04	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
19869	Passenger Elevators	638580	18910		G1-EL02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
19870	Passenger Elevators	638581	18911		G1-EL03	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
19871	Passenger Elevators	638579	18909		G1-EL01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
19876	Passenger Elevators	638569	18044		N4-EL02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19902	Passenger Elevators	638570	18132		C4-EL05	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19948	Passenger Elevators	638572	18913		G1-EL05	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
19949	Passenger Elevators	57605-4210	17855		ELV8101	OPERATING	LAX	NBHS	382 World Way, Los Angeles, CA 90045
21861	Passenger Elevators	24328	18887		T1-EL-14 (1-4-TC01)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
21863	Passenger Elevators	24329-D	18887		T1-EL-13 (1-4-TC01)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
21864	Passenger Elevators	24329-C	18887		T1-EL-12 (1-4-TC01)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
21865	Passenger Elevators	24329-B	18887		T1-EL-11 (1-4-TC01)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
21866	Passenger Elevators	24329-A	18887		T1-EL-10 (1-4-TC01)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
21867	Passenger Elevators	24327	18883		T1-EL-09 (1-0-TA13)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
22040	Passenger Elevators	96848	19208		APF-EL-05	OPERATING	LAX	APFHQ	9160 S. Loyola Blvd., Los Angeles, CA 90045
22041	Passenger Elevators	96847	19206		APF-EL-04	OPERATING	LAX	APFHQ	9160 S. Loyola Blvd., Los Angeles, CA 90045
22043	Passenger Elevators	96815	19298		APF-EL-02	OPERATING	LAX	APFHQ	9160 S. Loyola Blvd., Los Angeles, CA 90045
22044	Passenger Elevators	96814	19297		APF-EL-03	OPERATING	LAX	APFHQ	9160 S. Loyola Blvd., Los Angeles, CA 90045
22045	Passenger Elevators	96813	19282		APF-EL-01	OPERATING	LAX	APFHQ	9160 S. Loyola Blvd., Los Angeles, CA 90045
23122	Passenger Elevators	N/A	19052		ITFW-EL-01	OPERATING	LAX	G0704	6100 94th Street, Los Angeles, CA 90045
23123	Passenger Elevators	N/A	19052		ITFW-EL-02	OPERATING	LAX	G0704	6100 94th Street, Los Angeles, CA 90045
23124	Passenger Elevators	N/A	19045		ITFW-EL-03	OPERATING	LAX	G0704	6100 94th Street, Los Angeles, CA 90045
23125	Passenger Elevators	N/A	19045		ITFW-EL-04	OPERATING	LAX	G0704	6100 94th Street, Los Angeles, CA 90045
23126	Passenger Elevators	N/A	19104		ITFW-EL-05	OPERATING	LAX	G0704	6100 94th Street, Los Angeles, CA 90045
23127	Passenger Elevators	N/A	19104		ITFW-EL-06	OPERATING	LAX	G0704	6100 94th Street, Los Angeles, CA 90045
36805	Passenger Elevators		10818		T2-EL-01	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
36841	Passenger Elevators		10611		T1-EL-04 (Formerly T1-EL-09)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
36842	Passenger Elevators		10612		T1-EL-05 (Formerly T1-EL-10)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
36948	Passenger Elevators	628265	12266		T7-EL-11	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
36950	Passenger Elevators	628263	12190		T7-EL-05	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
36951	Passenger Elevators	628266	12191		T7-EL-06	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
36952	Passenger Elevators	628264	12195		T7-EL-10	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
36961	Passenger Elevators	628267	12118		T7-EL-01	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
36962	Passenger Elevators	628268	12119		T7-EL-02	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
36981	Passenger Elevators		10671		T1-EL-06 (Formerly T1-EL-11)	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
37596	Passenger Elevators		10526		ARFF80-01	OPERATING	LAX	Q0403	7250 World Way West, Los Angeles, CA 90045
40373	Passenger Elevators		15379		T7-EL-12	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
41994	Passenger Elevators	659232	10051		T5-EL-16	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
41995	Passenger Elevators	659233	10051		T5-EL-17	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
42187	People Lifts	76236	11751		Genesis - Gate 56D	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
42149	Powered Dumbwaiters	124121	17060		North	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
42150	Powered Dumbwaiters	124122	17061		South	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
41138	Uninterruptible Power Systems		10604	1607	T1-EL-01	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
41139	Uninterruptible Power Systems		10606	1917	T1-EL-03	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
41140	Uninterruptible Power Systems		10607	1610	T1-EL-04	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
41141	Uninterruptible Power Systems		10608	1919	T1-EL-05	OPERATING	LAX	TER01	100 World Way, Los Angeles, CA 90045
41142	Uninterruptible Power Systems		14541	16019	C12EL02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045

Attachment 4
Full Conveyance Asset List

Asset #	Description	Serial #	Location	parent	Legacy #	Status	Site ID	Address Code	Formal Address
41147	Uninterruptible Power Systems		14542	16020	C12EL03	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
41160	Uninterruptible Power Systems		11192	3222	T4-EL-04	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
41161	Uninterruptible Power Systems		11193	3223	T4-EL-05	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
41163	Uninterruptible Power Systems		11194	3224	T4-EL-07	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
41164	Uninterruptible Power Systems		11351	3225	T4-EL-08	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
41165	Uninterruptible Power Systems		11352	3226	T4-EL-09	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
41168	Uninterruptible Power Systems		11197	3483	T4-EL-12	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
41170	Uninterruptible Power Systems		11356	3228	T4-EL-14	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
41171	Uninterruptible Power Systems		11357	3478	T4-EL-15	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
41173	Uninterruptible Power Systems		12463	16148	T4CEL17	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
41180	Uninterruptible Power Systems		11656	3607	T5-EL-05A	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
41183	Uninterruptible Power Systems		11616	3606	T5-EL-08D	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
41185	Uninterruptible Power Systems		11500	16134	T5-10	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
41191	Uninterruptible Power Systems		11856	1378	T6-EL-01	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
41196	Uninterruptible Power Systems		15326	1462	T6-EL-06	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
41197	Uninterruptible Power Systems		11988	1460	T6-EL-07	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
41198	Uninterruptible Power Systems		11989	1461	T6-EL-08	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
41200	Uninterruptible Power Systems		11846	16210	T6-EL-10	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
41203	Uninterruptible Power Systems		12120	4669	T7-EL-03	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
41204	Uninterruptible Power Systems		12121	4677	T7-EL-04	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
41207	Uninterruptible Power Systems		12123	4675	T7-8	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
41212	Uninterruptible Power Systems		12415	4924	T8-EL-02	OPERATING	LAX	TER08	800 World Way, Los Angeles, CA 90045
41214	Uninterruptible Power Systems		12376	4922	T8-EL-05	OPERATING	LAX	TER08	800 World Way, Los Angeles, CA 90045
41219	Uninterruptible Power Systems		13272	11702	EL1-134	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
41259	Uninterruptible Power Systems		14543	16017	C9EL02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
41260	Uninterruptible Power Systems		14544	16018	C9EL03	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
41262	Uninterruptible Power Systems		13292	15338	C9EL05 (17)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
41282	Uninterruptible Power Systems		10513	5901	PS2A-1	OPERATING	LAX	PKS02A	251 World Way, Los Angeles, CA 90045
41283	Uninterruptible Power Systems		10514	5902	PS2A-2	OPERATING	LAX	PKS02A	251 World Way, Los Angeles, CA 90045
41298	Uninterruptible Power Systems		10215	14885	PS601-1	OPERATING	LAX	L0503	551 World Way, Los Angeles, CA
41299	Uninterruptible Power Systems		10216	14886	PS601-2	OPERATING	LAX	L0503	551 World Way, Los Angeles, CA
41300	Uninterruptible Power Systems		10217	14887	PS601-3	OPERATING	LAX	L0503	551 World Way, Los Angeles, CA
41301	Uninterruptible Power Systems		10218	14888	PS601-4	OPERATING	LAX	L0503	551 World Way, Los Angeles, CA
41314	Uninterruptible Power Systems		10595	5904		210 OPERATING	LAX	T0504	7485 World Way West, Los Angeles, CA 90045
41315	Uninterruptible Power Systems		10596	5905		212 OPERATING	LAX	T0503	7485 World Way West, Los Angeles, CA 90045
41316	Uninterruptible Power Systems		10597	5906		214 OPERATING	LAX	T0502	7485 World Way West, Los Angeles, CA 90045
41317	Uninterruptible Power Systems		10598	5907		216 OPERATING	LAX	T0501	7485 World Way West, Los Angeles, CA 90045
41318	Uninterruptible Power Systems		10599	5908		218 OPERATING	LAX	T0601	7485 World Way West, Los Angeles, CA 90045
41323	Uninterruptible Power Systems		10565	5870	Badge Office	OPERATING	LAX	R0511	7333 World Way West, Los Angeles, CA 90045
41324	Uninterruptible Power Systems		10581	5936	MSD	OPERATING	LAX	S0405	7411 World Way West, Los Angeles, CA 90045
41452	Uninterruptible Power Systems		11522		T5-2	OPERATING	LAX	TER05	500 World Way, Los Angeles, CA 90045
52742	Escalator	F7N1B378	10030		T3-ES01	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045
52743	Escalator	F7N1B379	10030		T3-ES02	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045
52744	Escalator	F7N1B380	10030		T3-ES03	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045
52745	Escalator	F7N1B381	10030		T3-ES04	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045
52746	Escalator	F7N1B382	10030		T3-ES05	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045
52747	Escalator	F7N1B383	10030		T3-ES06	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045
52748	Escalator	F7N1B384	10030		T3-ES07	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045
52749	Escalator	F7N1B385	10030		T3-ES08	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045
52752	Passenger Elevator	F7N1B368	10030		T3-EL01	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045
52753	Passenger Elevator	F7N1B369	10030		T3-EL02	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045
52754	Passenger Elevator	F7N1B370	10030		T3-EL03	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045
52755	Passenger Elevator	F7N1B371	10030		T3-EL04	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045
52756	Passenger Elevator	F7N1B372	10030		T3-EL05	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045
52757	Passenger Elevator	F7N1B373	10030		T3-EL06	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045
52758	Passenger Elevator	F7N1B374	10030		T3-EL12	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045

Attachment 4
Full Conveyance Asset List

Asset #	Description	Serial #	Location	parent	Legacy #	Status	Site ID	Address Code	Formal Address
52761	Passenger Elevator	F7N1B388	19730		T3-EL19	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045
52762	Passenger Elevator	F7N1B389	19730		T3-EL20	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045
52763	Passenger Elevator	F7N1J543	10030		T3-EL13	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045
52764	Passenger Elevator	F7N1J544	10030		T3-EL14	OPERATING	LAX	TER03	300 World Way, Los Angeles, CA 90045
53760	People Lift	M0496 WL S72 16005LN	10062		Ticketing Level Behind Air Canada Ticket Counters	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
23630	Escalator	N/A	21003		C15ES07	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
23631	Escalator	N/A	21003		C15ES08	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
23632	Escalator	N/A	13385		C15ES09	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
23633	Escalator	N/A	13385		C15ES10	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
23634	Escalator	N/A	10093		C15ES11	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
23635	Escalator	N/A	10093		C15ES12	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
3336	Passenger Elevator		11858		T6-EL-04	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
22026	Escalator	M5604	21785		T4-ES-35	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
23691	Escalator	M5606	21787		T4-ES-37	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
23693	Escalator	M5605	21786		T4-ES-36	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
23694	Escalator	M5603	21784		T4-ES-34	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
23695	Escalator	M5602	21783		T4-ES-33	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
23696	Escalator	M5601	21782		T4-ES-32	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
23838	Escalator	N/A	20771		T6-ES-30	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
23839	Escalator	N/A	20771		T6-ES-31	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
23840	Escalator	N/A	20771		T6-ES-32	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
23841	Escalator	N/A	20772		T6-ES-33	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
23842	Escalator	N/A	20772		T6-ES-34	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
23843	Escalator	N/A	20772		T6-ES-35	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
23844	Escalator	N/A	20772		T6-ES-36	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
23845	Passenger Elevator	N/A	20810		T6-EL-30	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
23846	Passenger Elevator	N/A	20811		T6-EL-31	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
23847	Passenger Elevator	N/A	20812		T6-EL-32	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
23848	Passenger Elevator	N/A	20813		T6-EL-33	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
23849	Passenger Elevator	N/A	20814		T6-EL-34	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
22030	Escalator	M5599	21780		T4-ES-30	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
22031	Escalator	M5600	21781		T4-ES-31	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
52582	Escalator		21537		T7-ES-02	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
23636	Passenger Elevator	3474420	21011		C15EL01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
23637	Passenger Elevator	3474422	21012		C15EL02	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
23638	Passenger Elevator	3474424	21013		C15EL03	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
23639	Passenger Elevator	3474426	21014		C15EL04	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
23680	Passenger Elevator	25321-B	21778		T4-EL-33	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
23681	Passenger Elevator	25321-A	21779		T4-EL-34	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
23682	Passenger Elevator	25321-C	21777		T4-EL-32	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
23683	Passenger Elevator	25321-D	21776		T4-EL-31	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
23684	Freight Elevator	25322	21775		T4-EL-30	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045

Attachment

5

Attachment 5

Critical Conveyance Asset List

Asset #	Description	Serial #	Location	parent	Legacy #	Status	Site ID	Address Code	Formal Address
1045	Escalator		10829		T2-ES-04	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1047	Escalator		10830		T2-ES-05	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1048	Escalator		10901		T2-ES-06	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1049	Escalator		10828		T2-ES-03	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1063	Escalator		10827		T2-ES-02	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1100	Passenger Elevators	91126	10824		T2-EL-08	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1101	Escalator	N/A	10833		T2-ES-13	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1111	Escalator	N/A	10834		T2-ES-14	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1232	Passenger Elevators	87553	10943		T2-EL-05	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
1378	Passenger Elevators	178908	11856		T6-EL-01	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
1379	Escalator		15327		T6-ES-06	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
1388	Escalator		11860		T6-ES-01	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
1390	Escalator		11861		T6-ES-02	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
1462	Passenger Elevators	N/A	15326		T6-EL-06	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
1478	Escalator		11994		T6-ES-04	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
1479	Escalator		15325		T6-ES-03	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
3222	Passenger Elevators		11192		T4-EL-04	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3223	Passenger Elevators		11193		T4-EL-05	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3224	Passenger Elevators		11194		T4-EL-07	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3245	Escalator		11273		T4-ES-06	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3246	Escalator		11274		T4-ES-07	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3247	Escalator		11275		T4-ES-10	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3248	Escalator		11276		T4-ES-11	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3249	Escalator		11201		T4-ES-12	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3337	Passenger Elevators		11859		T6-EL-09	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
3479	Passenger Elevators		11189		T4-EL-01	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
3483	Passenger Elevators		11197		T4-EL-12	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
4669	Passenger Elevators	181231	12120		T7-EL-03	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4671	Passenger Elevators		12194		T7-EL-09	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4674	Passenger Elevators		12122		T7-EL-07	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4675	Passenger Elevators	CP-PHD-84417	12123		T7-EL-08	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4677	Passenger Elevators		12121		T7-EL-04	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4688	Escalator	179178	12124		T7-ES-01	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4691	Escalator		12127		T7-ES-04	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4702	Escalator		12132		T7-ES-16	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4703	Escalator		12206		T7-ES-17	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4704	Escalator		12133		T7-ES-18	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
4922	Passenger Elevators		12376		T8-EL-05	OPERATING	LAX	TER08	800 World Way, Los Angeles, CA 90045
4923	Passenger Elevators		12374		T8-EL-01	OPERATING	LAX	TER08	800 World Way, Los Angeles, CA 90045
4924	Passenger Elevators		12415		T8-EL-02	OPERATING	LAX	TER08	800 World Way, Los Angeles, CA 90045
5375	Escalator	162674	13226		C2ES01 / ES1-G148	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5406	Escalator		13245		C5ES01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5431	Passenger Elevators		13225		C2EL01 (EL1-G148)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5434	Passenger Elevators		13233		C4EL01	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5442	Passenger Elevators		13244		C5EL05	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5450	Passenger Elevators		13273		EL1-G150	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5451	Passenger Elevators		13274		EL1-G151	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5452	Passenger Elevators		13275		EL1-G152	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045

Attachment 5
Critical Conveyance Asset List

Asset #	Description	Serial #	Location	parent	Legacy #	Status	Site ID	Address Code	Formal Address
5453	Passenger Elevators		13276		EL1-G153	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5454	Passenger Elevators		13277		EL1-G154	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5455	Passenger Elevators		13278		EL1-G155	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5456	Passenger Elevators		13279		EL1-G156	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
5457	Passenger Elevators		13280		EL1-G157	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
6276	Passenger Elevators		13281		EL1-G159	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
9393	Escalator		11203		T4-ES-16	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
9394	Escalator		11280		T4-ES-15	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
10001	Escalator		11862		T6-ES-05	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
10002	Escalator		11865		T6-ES-08	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
10003	Escalator		11866		T6-ES-09	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
11033	Passenger Elevators	454256	13291		C9EL01 (formerly TBIT-15)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11035	Passenger Elevators		13285		C13EL03 (formerly TBIT-6)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11036	Passenger Elevators		13284		C16EL03 (formerly TBIT-5)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11037	Passenger Elevators		13287		C9EL04 (formerly TBIT-8)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11040	Passenger Elevators	45420	13217		C16EL01 (formerly TBIT-1)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11041	Passenger Elevators		13218		C16EL02 (formerly TBIT-2)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11042	Passenger Elevators	454252	13215		C13EL01 (formerly TBIT-3)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11043	Passenger Elevators	454251	13216		C13EL02 (formerly TBIT-4)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11044	Passenger Elevators	454254	13288		C12EL01 (Formerly TBIT #10)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11046	Passenger Elevators	456976	13289		C11EL01 (formerly TBIT-12)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11700	Passenger Elevators	CN 738311	13268		EL1-G130	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11701	Passenger Elevators	CN 738313	13270		EL1-G132	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11702	Passenger Elevators	CN 738315	13272		EL1-G134	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11703	Passenger Elevators	CN 738312	13269		EL1-G131	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11704	Passenger Elevators	CN 738314	13271		EL1-G133	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11705	Passenger Elevators	CN 738327	13267		EL1-BC	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11706	Passenger Elevators	CN 738328	13283		EL2-BC	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11707	Passenger Elevators	CN 738325	13282		EL1-N	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
11715	Escalator	CN 680814	13309		ES2-BC	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14112	Passenger Elevators		14469		EL2-S	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14543	Escalator	CN 680798	13294		ES1-G130	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14544	Escalator	162624	13299		ES1-G150	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14545	Escalator		13300		ES1-G151	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14546	Escalator		13302		ES1-G153	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14547	Escalator	162626	13301		ES1-G152	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14548	Escalator	162628	13303		ES1-G154	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14549	Escalator		13304		ES1-G155	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14550	Escalator		13306		ES1-G157	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14551	Escalator	162630	13305		ES1-G156	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14552	Escalator		13307		ES1-G159	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14554	Escalator	CN 680799	13295		ES1-G131	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14555	Escalator	CN 680800	13296		ES1-G132	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14556	Escalator	CN 680801	13297		ES1-G133	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14557	Escalator	CN 680802	13298		ES1-G134	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
14559	Escalator	CN 680813	13310		ES2-N	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15254	Passenger Elevators		10090		EL1-G135 (formerly TBIT-N4)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15255	Passenger Elevators		15331		EL2-G123 (formerly TBIT-N5)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045

Attachment 5

Critical Conveyance Asset List

Asset #	Description	Serial #	Location	parent	Legacy #	Status	Site ID	Address Code	Formal Address
15257	Passenger Elevators		15330		EL1-G123 (formerly TBIT-N6)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15261	Escalator		15332		ES1-G122 (formerly TBIT-NE4)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15302	Escalator		10831		T2-ES-11	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
15307	Escalator		13450		C11ES02 (formerly CE-9)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15318	Escalator		13293		ES1-BC	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15319	Passenger Elevators		13286		C12EL04 (formerly TBIT-7)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15333	Passenger Elevators		10823		T2-EL-07	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
15334	Passenger Elevators		13290		C10EL01 (formerly TBIT-13)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15337	Escalator		13265		C9ES06 (formerly CE-6)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15338	Passenger Elevators		13292		C9EL05 (formerly TBIT-17)	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15420	Passenger Elevators		10822		T2-EL-06	OPERATING	LAX	TER02	200 World Way, Los Angeles, CA 90045
15834	Escalator		13451		ES1-G123, NE-10	OPERATING	LAX	TERTBT	380 World Way, Los Angeles, CA 90045
15841	Passenger Elevators		12416		T8-EL-03	OPERATING	LAX	TER08	800 World Way, Los Angeles, CA 90045
15987	Passenger Elevators	620181	12472		T4C-EL-16	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
16150	Passenger Elevators	620180	12465		T4C-EL-19, CBIS Room	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
16152	Escalator	681369	12459		T4C-ES-19	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
16153	Escalator	681370	12461		T4C-ES-20	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
16210	Passenger Elevators		11846		T6-EL-10	OPERATING	LAX	TER06	600 World Way, Los Angeles, CA 90045
16211	Escalator	681371	12471		T4C-ES-21	OPERATING	LAX	TER04	400 World Way, Los Angeles, CA 90045
19816	Passenger Elevators	638589	18188		N4-EL01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19817	Passenger Elevators	638587	18170		N2-EL01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19818	Passenger Elevators	638585	18197		N5-EL01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19819	Passenger Elevators	638592	18243		N7-EL01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19820	Escalator	681493	18932		N7-ES02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19821	Escalator	681492	18246		N7-ES01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19822	Escalator	681495	18926		N8-ES01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19823	Escalator	681496	18931		N8-ES02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19824	Escalator	681494	18933		N7-ES03	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19825	Escalator	681490	18934		N5-ES01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19826	Escalator	681491	18935		N5-ES02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19827	Escalator	681489	18937		N4-ES02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19828	Escalator	681488	18936		N4-ES01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19829	Escalator	681487	18939		N2-ES02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19830	Passenger Elevators	638586	18245		N7-EL03	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19831	Passenger Elevators	638593	18244		N7-EL02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19832	Passenger Elevators	638591	18218		N6-EL01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19833	Passenger Elevators	638590	18189		N4-EL03	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19834	Passenger Elevators	638588	18171		N2-EL02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19835	Escalator	681475	18940		C2-ES05	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19867	Passenger Elevators	638568	18107		C2-EL05	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19876	Passenger Elevators	638569	18044		N4-EL02	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
19951	Escalator	681486	18938		N2-ES01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
22513	Escalator	681497	18941		S2-ES01	OPERATING	LAX	MSC	384 World Way, Los Angeles, CA 90045
36948	Passenger Elevators	628265	12266		T7-EL-11	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
36950	Passenger Elevators	628263	12190		T7-EL-05	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
36951	Passenger Elevators	628266	12191		T7-EL-06	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
36952	Passenger Elevators	628264	12195		T7-EL-10	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
40373	Passenger Elevators		15379		T7-EL-12	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045

Attachment 5
Critical Conveyance Asset List

Asset #	Description	Serial #	Location	parent	Legacy #	Status	Site ID	Address Code	Formal Address
40381	Escalator		12267		T7-ES-05	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045
52582	Escalator		21537		T7-ES-02	OPERATING	LAX	TER07	700 World Way, Los Angeles, CA 90045



REQUEST FOR PROPOSALS
FOR
Elevator, Escalator and Moving Walkway Full
Maintenance, Repair, Modernization, Materials
and Related Services
FOR
Los Angeles World Airports (LAWA)

Release Date:	Friday, August 19, 2022
Due Date	Friday, October 14, 2022 11:59 PM – Pacific Time
Pre-proposal conference	Wednesday, September 7, 2022 9:00 AM – Pacific Time Virtual Meeting / See Section 7, page 31, for instructions
Site Walk	Thursday, September 8, 2022 8:00 AM – Pacific Time See Section 8, page 32, for instructions
Deadline to submit all questions	Friday, September 16, 2022 5:00 PM - Pacific Time See Section 9, page 32, for instructions
RFP Administrator	Gary Abel/Management Analyst Los Angeles World Airports Facilities Maintenance Division FMDContracts@lawa.org

Note: All communications regarding this Request for Proposals shall be directed in writing to the RFP Administrator listed above. Written communications may be made through email, U.S. mail, or delivery service. Any proposer communicating with Los Angeles World Airports staff other than the RFP Administrator may be disqualified, and their proposal declared non-responsive.

SUMMARY INFORMATION

Contractor's License Requirements – California Contractor's C-11 License as well as Certified Qualified Conveyance Company (CQCC) with the State of California, Department of Industrial Relations, Division of Occupational Safety and Health

Elevator Mechanic Requirements – Certified Competent Conveyance Mechanic – Division of Occupational Safety and Health Elevator Unit

California State Licensed Elevator Mechanic

Licensed Journey Level Elevator Mechanic Issued by the City of Los Angeles Department of Building and Safety.

Contract Term – 3 – years plus the option for two 1-year renewals

Proposal Submittal – **PROPOSALS MUST BE SUBMITTED ELECTRONICALLY**

Proposals submitted after deadline will not be accepted
See Section 10, page 33, for instructions

Contract Administrator – Gary Abel

Title – Management Analyst

Email – FMDContracts@lawa.org

Email Subject Line – RFP – Elevator, Escalator and Moving Walkway Full Maintenance, Repair, Modernization, Materials and Related Services / 2022

TABLE OF CONTENTS

1.	INVITATION OF PROPOSALS	5
2.	GENERAL PROJECT DESCRIPTION	5
3.	SCOPE OF WORK	6
4.	THE AIRPORT OPERATIONS ENVIRONMENT	30
5.	CITY POLICIES AND AGREEMENTS	31
6.	PROHIBITED PROPOSER COMMUNICATIONS	31
7.	PRE-PROPOSAL CONFERENCE	32
8.	SITE WALK.....	32
9.	QUESTIONS AND ANSWERS	33
10.	PROPOSAL SUBMITTAL INSTRUCTIONS.....	34
11.	MINIMUM QUALIFICATIONS	35
12.	PROPOSER'S STRUCTURE	35
13.	INTERPRETATION OF RFP DOCUMENTS	35
14.	ADDENDA	36
15.	GENERAL PREPARATION OF PROPOSAL SUBMITTAL	36
16.	PREPARATION OF PROPOSAL PART 1 – TECHNICAL/MANAGEMENT PROPOSAL	37
17.	PREPARATION OF PROPOSAL PART 2 – ADMINISTRATIVE REQUIREMENTS.....	43
18.	PREPARATION OF PROPOSAL PART 3 – FINANCIAL CAPABILITY	44
19.	SIGNING OF PROPOSAL	44
20.	ONLY ONE PROPOSAL ACCEPTED.....	45
21.	WITHDRAWAL OF PROPOSAL	45
22.	INFORMATION REQUESTED AND NOT FURNISHED	45
23.	PROHIBITION OF ALTERNATE TERMS AND CONDITIONS	45
24.	EVALUATION OF PROPOSALS	46
25.	AWARD OF CONTRACT	47
26.	EXECUTION OF CONTRACT	48
27.	ADDITIONAL TERMS AND DISCLOSURES	54

RFP ATTACHMENTS

- Attachment 1 – Administrative Requirements, page 59
- Attachment 2 – Proposer's Experience and References Form, page 207
- Attachment 3 – Cost Proposal Worksheet, page 208
- Attachment 4 – Equipment List, page 210
- Attachment 5.1 – Map of TBIT Conveyances, page 211
- Attachment 5.2 – Map of Terminal 1 Conveyances, page 220
- Attachment 5.3 – Map of Terminal 2 Conveyances (under construction), page 226
- Attachment 5.4 – Map of Terminal 3 Conveyances (under construction), page 231
- Attachment 5.5 – Map of Terminal 2 & 3 Conveyances (under construction), page 232
- Attachment 5.6 – Map of Terminal 4 Connector Conveyances, page 237
- Attachment 5.7 – Map of Terminal 4 Conveyances, page 242
- Attachment 5.8 – Map of Terminal 5 Conveyances, page 248
- Attachment 5.9 – Map of Terminal 6 Conveyances, page 249
- Attachment 5.10 – Map of Terminal 7 Conveyances, page 250
- Attachment 5.11 – Map of Terminal 8 Conveyances, page 251
- Attachment 5.12 – Map of MSC Conveyances, page 252
- Attachment 6 - Los Angeles Fire Department Chief Regulation No. 4 Testing Procedures, page 253
- Attachment 7 - Sample Contract, page 383

1. INVITATION OF PROPOSALS

The City of Los Angeles, Los Angeles World Airports (LAWA) invites qualified firms to submit Proposals in response to this REQUEST FOR PROPOSALS (RFP) for Elevator, Escalator and Moving Walkway Full Maintenance, Repair, Modernization, Materials and Related Services at Los Angeles International Airport (LAX) and Van Nuys Airport (VNY).

2. GENERAL PROJECT DESCRIPTION

This Request for Proposal is for full maintenance and repair services of all of the conveyance systems at Los Angeles International Airport (LAX) and Van Nuys Airport (VNY). LAX currently has over 400 conveyance units, which range from new to over twenty (20) years old. The Van Nuys Fly Away has three (3) elevators. The majority of the newly installed units are maintained and repaired under a separate preventative maintenance program. Once this separate preventative maintenance program expires, these newly installed units will fall under this contract. Any repairs not covered by the aforementioned preventative maintenance program are the responsibility of the LAWA Elevator Shop and will be completed with in-house staff as well as under this contract.

Also included in this RFP as Attachment 6 is the Los Angeles Fire Department Chief Regulation No. 4 Testing Procedures (LAFD Reg 4) which are required annually. This testing covers all elevators at LAX and VNY Airports and takes place predominantly during the off-shift hours between 10:30 PM and 6:30 AM.

The conveyance system infrastructure is critical for daily operations as well as proper passenger flow at LAX and VNY Airports. Accordingly, it is imperative that the systems operate effectively at all times. Contractor response time and their ability to obtain parts in a timely manner play a vital role in keeping the equipment up and running.

The Contractor will be responsible for providing the services mentioned in this Statement of Work primarily at Terminals 2, 3, 4, 6, 7, 8, Tom Bradley International Terminal (TBIT), Bradley West Gates, Core 1.5, 3.5, 5.5, 7.5, ITF West, Automated People Mover – Central Terminal Area Parking Structures (APM CTA P/S), Airport Police Facility (APF) and other administrative buildings campus wide. LAWA staff will be primarily responsible for Terminals 1 and 5 and the outlying buildings. Contractor shall also provide necessary support for Terminals 1 and 5 and the outlying buildings on an as-needed basis. These areas of responsibilities are subject to change, according to the needs and discretion of LAWA.

3. SCOPE OF WORK

- A. The Contractor shall furnish all supplies, materials, parts, labor, labor supervision, tools, scaffolding, machinery, hoists, equipment (including employee safety equipment), lubricants, and technical information necessary to provide pro-active preventive maintenance service including, but not limited to, cleaning, lubrication, adjusting, parts replacement, repair and callback service in strictest conformity to best industry practice, applicable laws, and all express and implied provisions herein for LAWA-wide conveyances in and around LAX and VNY.
- B. The Contractor shall maintain the conveyance equipment in "like new" condition by continuously preserving and maintaining the condition, appearance, and performance of the conveyance in keeping with the manufacturer's original design and purpose. The purpose of the maintenance program specified herein is to provide the following:
 - 1. Consistent, safe, and reliable operation
 - a. Escalators must be maintained in working order 96% of the time available (see Equipment Availability Section, pages 22- 23 herein)
 - b. Elevators must be maintained in working order 97% of the time available
 - c. Moving walkways must be maintained in working order at 95% of the time available
 - 2. Maximum operational performance
 - 3. Maximum beneficial usage
 - 4. Maximum life cycle
 - 5. Appearance of machine rooms should be kept in a neat and clean manner at all times.
- C. The Contractor is required to supply staffing of technicians necessary to meet the onsite requirements and response times indicated in this Scope of Work.
- D. The Contractor expressly acknowledges that LAWA is relying on the Contractor's professional expertise in performance of Services to maintain LAWA's equipment.
- E. The Contractor shall have local stock of commonly used repair parts and in addition shall stock on-site the parts necessary to provide routine preventive maintenance and repairs as specified under Equipment Availability and Scope of Work.

MATERIAL, PARTS, AND EQUIPMENT

- A. All parts, material and equipment shall be new and used for the purposes intended. Parts must be Original Equipment Manufacturer (OEM) unless pre-approved by LAWA.

B. Repair and Replacement

1. Make repairs and/or replace all worn, damaged, or broken parts or components.
2. Parts or components requiring repair shall be rebuilt to "as new" condition when new are not available. Parts or components shall be replaced:
 - a. When worn beyond normal adjustment limits.
 - b. When necessary to ensure continued normal operation.
 - c. When necessary to extend the useful life of the conveyances or any of their components
 - d. When necessary to continue safe, dependable operation in accordance with American Society of Mechanical Engineers (ASME) A17.1 and A17.2 Code
 - e. When necessary to continue performance of the equipment in accordance with its original design
 - f. When necessary to maintain the performance standards specified in this Contract, including smoothness and quietness of operation
3. When more than one conveyance requires repair, LAWA management, upon consultation with the Contractor, shall establish priorities of accomplishment.

C. Manufacturers Parts, Materials, and Lubricants

1. It will be the responsibility of the Contractor to maintain an available stock of spare parts, materials, and lubricants for routine maintenance and repair. This inventory shall be developed based on the spare parts listing provided by OEM specification, as well as any other parts and supplies necessary for routine maintenance and/or to ensure functional availability of the conveyances. Any spare parts provided by the equipment manufacturers shall be included in this inventory. The Contractor shall also maintain an active listing of the sources of spare parts or replacement equipment needed for catastrophic failures as well as the means for rapidly dispatching them to the site so that repairs can be completed without undue downtime.
2. All lubricants shall be suitable for the purpose intended and shall meet or exceed the minimum requirements specified by the manufacturer of the equipment for which the lubricant is applied.
3. Lubricants, cleaning fluids and all combustible liquids shall be stored in compliant and properly labeled flammable metal cabinets in the machine

room and shall be disposed of in accordance with Occupational Safety and Health Association (OSHA) and Environmental Protection Agency (EPA) guidelines.

4. Safety Data Sheets (SDS's) shall be posted as required.
5. The Contractor will be responsible for removal and disposal of all oils, greases, solvents and soiled cleaning cloths and rags that are used in the repair, service and adjusting of all elevator and escalator equipment. All material will be disposed of in accordance with all applicable municipal, State, County, City, and Federal laws and regulations. LAWA Facilities Management Division will retain title to all hazardous and non-hazardous waste, including but not limited to hydraulic oil, cleaning solvents and other waste generated from maintenance associated with this contract. LAWA will be shown as the waste generator and will sign all waste manifests/bill of ladings. Nothing contained within these Contract Documents shall be construed or interpreted as requiring the Contractor to assume the status of owner or generator of hazardous waste substances for non-Contractor generated hazardous wastes. All disposal locations are subject to LAWA approval and Contractor must provide all disposal documentation within thirty (30) calendar days of disposal. Use of LAWA's EPA Identification Number for disposal purposes must be coordinated with contract manager and all documentation such as manifests, land disposal restriction forms, and profiles must be delivered to the contract manager within thirty (30) calendar days of disposal.

D. Consideration shall be given in regard to obsolescence of systems, materials or parts only when both the original equipment manufacturer(s) and after-market elevator industry suppliers no longer manufacture required materials or parts. Components or materials that can be repaired or refurbished at a machine or repair shop to allow the component or material to function in a safe manner are not considered obsolete. No consideration for obsolescence will be made during the initial five (5) year term of this contract for the conveyances that were modernized in the past fifteen (15) years.

E. Removal of Parts

1. No parts or components required for the performance of services on the vertical transportation equipment or required for its operation may be removed from the job site without prior written approval from LAWA.
2. This does not include new parts stocked on the job site and owned by the Contractor but does include parts and components which were installed with and are a part of the conveyance installation, and parts delivered and paid by LAWA, which shall remain LAWA property until installed on the equipment.

CONTRACTOR SERVICES

- A. If during the term of the Contract the Contractor violates any of the provisions of the Contract or fails to provide the services as required by LAWA, LAWA shall advise the Contractor of the specific deficiencies and shall allow the Contractor a reasonable time period (thirty (30) calendar days unless otherwise agreed) to correct the deficiencies to LAWA's satisfaction.
- B. In the event the Contractor fails to correct the deficiencies within thirty (30) calendar days or other agreed time, LAWA shall have the right to terminate the Contract.
- C. LAWA may add and delete conveyances based on modernization, or other reasons via Change Order to the Contract. Conveyances added or deleted from coverage by Change Order to the Contract will increase or decrease the amount of monthly basic compensation for preventive maintenance work. For each conveyance added, a basic compensation increase will be negotiated, using the types of conveyance conditions of service, and basic compensation of like conveyances under the Contract as a guide.

PRO-ACTIVE FULL PREVENTIVE MAINTENANCE

The Contractor must regularly and systematically, on a continuous basis, examine, clean, lubricate and adjust the vertical transportation equipment and provide unlimited callback service twenty-four (24) hours a day, seven days a week (24/7) without additional charges no matter what the issue is, in accordance with accepted industry standards and the applicable manufacturer's published specifications and technical field notes, including those published internally within the manufacturer's organization. The Contractor must repair or replace all portions of the equipment, including but not limited to the work and coverages described hereinafter. The Contractor is expected to complete 100% of its preventive maintenance assignments on a monthly basis. The Contractor will provide LAWA with a computerized report of completed maintenance and inspections every month; subject to approval of LAWA's designated Contract Administrator.

LAWA uses Maximo Work Order Management System (Maximo System) as its asset management system. Contractor will be granted access to the Maximo System via the asset management unit in order to keep track of preventative maintenance work orders. The Contractor will be required to utilize this system and any other system required by LAWA to track scheduled PM's, annual FLSS testing, and LAFD REG 4. Work Orders for the assets will be completed by Contractor and submitted as completed in the Maximo System weekly.

BASIC SCOPE - ELEVATORS

The Contractor shall examine, clean, lubricate, adjust, and when conditions warrant, repair or replace the following items including all components pertaining to the operation of the elevator equipment. Whether or not expressly stated herein, the items include, but are not limited to the following:

- A. Hoist machines, including worms, gears, thrust bearings, drive sheaves, drive sheave shafts and shaft bearings, tachometers, brake assemblies and pulleys, and all other components and parts of the machine and brake.
- B. Hoist motors and power conversion devices, including motor windings, field coils, rotating elements (including armatures and commutators), brushes, brush holders, motor bearings, and all other related components and parts.
- C. Controllers, selectors and dispatching equipment, including all micro-processor and/or solid-state components, relays, resistors, capacitors, condensers, transformers, contacts, leads, dash pots, timing devices, computer devices, encoders, tach-generators, steel selector tapes (or cables), mechanical and electrical driving equipment, and all other related components and parts; including battery back-up power equipment for the elevators.
- D. Governors, including governor sheave shaft assemblies, bearings, contacts, governors, jaws and all other related components or parts.
- E. Car and counterweight safeties, including actuating mechanisms, jaws, and all other related components and parts.
- F. Hoistway equipment, including deflector or secondary sheaves and sheave bearings, car and counterweight guide rails (free of rust and corrosion), top and bottom limit switches, counterweights and counterweight guide shoes including rollers or sliding gibs, inductors, cams, tapes and all other related components and parts.
- G. Hoistway entrance equipment, including hoistway door interlocks, hangers, hanger covers and tracks, hoistway door drive assemblies including vanes, drive blocks, clutches, pick-up assemblies and bearings, bottom door guides, auxiliary door closing devices (including cables, sheaves, and arms), door restrictor devices, and all other related components and parts.
- H. Car and hoistway door gibs, including their attachments to the door panels.
- I. Car equipment, including car guide assemblies, guide rollers or sliding car guides, car door restrictors, car top exhaust fan or blowers, car top 2:1 sheaves, load weighing or sensing switches, car top inspection stations, car top and bottom lights, car frames, car platforms, and all other related components and parts.

- J. Car door operators, including door drive chains, sheaves or belts, car door hangers, hanger covers and rollers, car door contacts, all door protective devices (including screen type detectors, proximity edges, mechanical safe edges and light rays), and all other related components and parts.
- K. Pit equipment, including car and counterweight buffers, tape sheave assemblies, governor rope pit tension sheave assemblies, compensating rope sheave assemblies or other pit mounted compensation guides, pit lights, and light fixtures including re-lamping (bulbs furnished by The Port), and all other related components and parts; Alarm bells, emergency stop switches, emergency car lights, and batteries.
- L. Car operating panels and their attachments to return panels, hall call pushbutton stations, car, and corridor signals and fixtures (including lighted surrounds or buttons), visual and audible signaling devices, remote status panels and switches, and all other related components and parts, including emergency light batteries.
- M. Seismic Devices, including seismic switches and contacts, derailment devices, and all other related components and parts.
- N. Hoist, compensating, and governor ropes and their fastening means, and all other similar or related components and parts; Renew all wire ropes as often as is necessary to maintain an adequate factor of safety. Maintain equal tension on all hoisting ropes, and, where appropriate, shorten all ropes as necessary to provide continued safe operation and maintain normal traction.
- O. Motors
 - 1. Treat all motor windings, as needed, with proper insulating compound which has been approved by the motor manufacturers.
 - 2. Replace any cracked or badly worn field coil windings.
 - 3. Disassemble machine brakes annually (unless otherwise agreed), check for and replace worn parts, clean all retained parts, reassemble, lubricate, and adjust for proper operation.
- P. Cleaning
 - 1. Keep all car tops, pits, and hoistways clean and free from dirt, oil, lint, debris, and stored items, and maintain each machine room in clean, neat condition.
 - 2. Keep all wire ropes and guide rails clean and free from dirt, lint, rust, or accumulated grease, and keep rail shanks properly painted.
 - 3. Clean elevator equipment, machine rooms, and pit floors at regular intervals sufficient in frequency to maintain a professional appearance, prevent

tracking of dirt, oil, grease, or carbon dust from car tops, pits or machine rooms onto carpeted areas, and to preserve the life of the equipment.

- Q. Traveling Cable: Repair or replace conductor cables and hoistway and machine room elevator wiring to prevent shutdowns and provide uninterrupted operation of elevator signals and uninterrupted elevator operation.
- R. Proper labeling
 - 1. Affix by stencil painting and maintain the appropriate elevator numbers on the car crossheads and on all equipment components in the machine rooms and pits, including hoist machines, motor generators, governors, control cabinets, buffers, and compensation sheave assemblies.
 - 2. These numbers shall be a minimum of 1" high except on the governor or compensation sheave assembly, which may be less if a suitable flat surface of 1", is not available.
- S. Repair to Finishes: Repair damage to car and hoist way door finish when caused by improper adjustment or maintenance of associated door equipment.
- T. Lighting: LAWA will furnish bulbs for all machine room and pit light fixtures. Replacement of car light bulbs or tubes shall be LAWA's responsibility. Uninterrupted Power Supplies or UPS for the lighting is contractor responsibility.
- U. Emergency Telephone and Intercom
 - 1. Maintain the emergency telephone, button and contacts, speakers, and wiring to the machine room junction box, in a fully operational condition.
 - 2. Maintain wiring for the car telephones from the cars to the machine room junction boxes. Maintain and confidence tests the telephone and intercom systems.
- V. In-Elevator Telephone Reprogramming and Intercoms: Maintain the in-car phones which communicate with the Airport's communication center at no additional cost to LAWA for duration of Contract, including batteries for the telephones and intercoms.
- W. Maintain Elevator Status or Monitoring Panels Maintain in fully operational condition.
- X. Hydraulic Elevators
 - 1. Maintain hydraulic elevators as described in the requirements for electric elevators and the following additional requirements.
 - 2. Provide inspection on the following equipment and/or components for the hydraulic elevator equipment to meet or exceed the Title 8 of the State of California Code of Regulations, City of Los Angeles Municipal Code, Part 1,

Section 92.0101 (Elevator Code), and any other applicable codes, standards or regulations including, but not limited to:

- a. Elevator machine including reservoir, pump, valves, valve operators, valve pistons, and drive motor, speed reduction units and electro-mechanical or motor operated cam devices.
 - b. Hydraulic jack unit's packing gland, surface condition of the jack unit piston, speed reducing valves, above ground piping, (Contractor not responsible for maintaining underground piping), cut off valves, speed reducing valves, and scavenger line systems or tank to collect normal leakage from jack unit packing gland.
 - c. Entire hydraulic jack unit for "holeless" hydraulic elevator applications.
 - d. Batteries, including those for emergency lowering when applicable.
3. Maintain proper clean oil and provide oil to proper levels in hydraulic reservoir.
 4. Maintain hydraulic plungers and packing heads, and above-ground hydraulic piping, fitting, hoses, and brackets.

BASIC SCOPE - ESCALATORS & MOVING WALKS

The Contractor shall examine, clean, lubricate, adjust, and when conditions warrant, repair or replace the following items including all components pertaining to the operation of the escalator equipment. This includes, but is not limited to:

- A. Maintain, repair or replace escalator drive machines, motors and brakes, controllers and switches, handrail drive devices, handrails, and worms and gears.
- B. Maintain, repair or replace bearings and thrusts, windings, commutators and rotating elements, contacts, coils switches and relays.
- C. Maintain, repair or replace steps (complete), step chains, handrail chains and drive chains. If a step has to be replaced again during the term of the contract, the Contractor will assume the total cost (both for the step and labor).
- D. Maintain repair or replace step tracks, handrail guides sprockets pulleys and gears, drive belts and timing belts.
- E. Maintain, repair, or replace tension devices, combs, comb plates (combs, comb plates and step treads are billable when damaged by others), and landing plates.
- F. Maintain, repair or replace lubricators, all lighting in escalator interiors, and all safety devices including comb impact and skirt switches.

-
- G. Perform an annual test of all operating and safety devices in accordance with ASME A17.1, Safety Code for Elevator and Escalators and all other tests required by governing authorities. These tests will be conducted in the presence of LAWA's authorized representative.
- H. Maintain, adjust, and ensure proper functionality of Escalator sleep mode equipment per OEM recommendations or as requested by LAWA.
- I. Cleaning
1. Perform a major clean down of all escalator equipment at least once a year (and more frequently, if necessary), including pits, pans and balustrade interiors. Removal of all steps is required, and each step must be checked for cracks or other damage. All damaged steps must be replaced. The Contractor will provide LAWA with a complete clean down report at the conclusion of each total clean down and allow inspection by LAWA before the equipment is put back into service. All deficiencies identified as part of inspection will be corrected by the Contractor prior to putting the escalator back in service, at no cost to LAWA. LAWA may withhold payment if the major clean downs are not completed or if deficiencies identified during the major clean downs are not corrected.
 2. Escalator steps and moving walkways must be cleaned monthly, weekly, and as needed depending on usage. A cleaning schedule must be developed and subject to LAWA approval. The escalator and moving walkway cleaning services shall be discussed and coordinated with the LAWA Contract Administrator. Contractor must have the proper equipment and chemicals necessary to clean the grooves in the tread area of the step.
- J. Wax handrails as required to provide smooth quiet operation.
- K. Examine, adjust, properly fasten and align balustrades, decks, skirt panels, anti-slide devices and guards. The Contractor is responsible for advising LAWA of the necessity of replacing these components but is not responsible for the cost of replacement.
- L. Perform necessary annual skirt index tests as required by California State Labor and Industries. Repair or adjust skirt panels and skirt brushes to maintain compliance index performance requirements on an annual basis or as required by the California State elevator inspector. All annual skirt index test (passed) reports must be submitted to LAWA's designated Contract Administrator. The Contractor is not responsible for replacing components but will notify LAWA of any need for replacement parts in order to pass the test.

M. Lubrication

1. Lubricate the equipment at intervals recommended by the equipment manufacturer or as dictated by the use of the equipment.

N. Adjust the equipment as necessary when the operation of the equipment varies:

1. From the originally designed performance as a result of normal wear and tear.
2. When required to maintain performance standards specified in this Contract.
3. When necessary to preserve the useful life of a part or assembly.
4. When necessary to prevent or eliminate equipment nuisances from becoming adversely noticeable to LAWA staff or public.

O. Dispatching

1. The Contractor shall check and adjust the conveyance dispatching systems and undertake necessary tests at such intervals as are required to ensure all circuits and time settings are consistently and properly adjusted in order to provide optimum service and minimize system response time to registered hall and car calls.
2. If required to complete such system checks, this work shall be completed during overtime at no additional cost to LAWA.

P. Adequate Parts and Parts Storage

The Contractor shall maintain an adequate inventory of spare parts:

1. Components on hand to permit timely replacement and repairs without delay.
2. All parts, materials, lubricants, rags, cleaning fluids, combustible liquids, and other materials and supplies shall be kept and stored in U.L. rated metal cabinets, provided by the Contractor, properly secured, in each machine room, unless code required clearances would be violated by the presence of such cabinets. Materials may also be stored in central storage if such space is not available in certain machine rooms.
3. All materials and supplies kept in these cabinets shall be neatly arranged, and cabinet doors shall be left in the fully closed position after each visit. This includes any replacement boards for any controls that the Contractor is not able to replace within twenty-four (24) hours of identifying the need for replacement.

Q. Cabinets

1. When material is stored on site there shall be cabinets sufficient in number and size to store all parts, materials, and supplies out of sight.
2. No parts, materials, or supplies shall be stored on top of cabinets, on the floors, or any other place where they are visible.

R. Prompt Corrective Action

1. When, as a result of an examination, a need for corrective action is apparent and the corrective action is within the scope of the Contractor's responsibility, the Contractor shall proceed immediately to make (or cause to be made) such replacements, repairs, and/or corrections.
2. If the Contractor reasonably believes the corrective action is not within the scope of the Contractor's responsibility, and no safety or potential safety problem exists, the Contractor shall deliver a written report to LAWA for further action within seven (7) calendar days of the examination. If unit is inoperable LAWA must be notified immediately and offered options by the Contractor.
3. If a safety or potential safety problem exists, the Contractor shall immediately take corrective action at the least possible expense and equipment outage to LAWA, regardless of scope of responsibility, and make a prompt written report to LAWA.

S. Treads and risers are free of all spills, stains, deposits, gum, stickers, and cleaning marks, leaving a uniform appearance. The adjacent surfaces will be protected or cleaned following the cleaning process.

1. Adjacent Areas/Surfaces- All interior and exterior areas, cladding, glass, landings, floor, handrails, switches, buttons, controls and related equipment will have a uniformly clean appearance, free from splatter, dirt, dust, cause by the conveyor cleaning and the cleaner.
2. Metal and bright work is to be maintained in accordance with standards listed herein. All adjacent areas are to be left free of residue and spotting following cleaning procedures.

T. General Cleaning Standards

1. Metal Cleaning - All cleaned metal surfaces are without deposits or tarnish and with a uniformly bright appearance, free from spots, smudges and streaks. Cleaning agent is to be removed from all adjacent surfaces, and surrounding finishes will not be damaged.

2. **Glass Cleaning Surfaces** - Glass is clean when all glass surfaces are without streaks, film, deposits, and stains and have a uniformly bright appearance and adjacent surfaces, including mullions and window sills, have been wiped clean. Glass cleaning work shall be accomplished with the least possible interference to airport passengers and operations. Dark or tinted glass is to be included in cleaning service.
3. **Terrazzo Floor Cleaning** - The floor needs to be protected prior to the cleaning set up and no harsh chemical should get on Terrazzo floor, in such case, the chemical needs to be cleaned off right way. Only neutral cleaner can be used for cleaning and surrounding finishes will not be damaged. The Terrazzo floor adjacent to landings is free from splatter, dirt, dust, caused by the conveyor cleaning and the cleaner.

CONVEYANCE CONDITIONS

All conveyances are "as is," and LAWA takes no responsibility for and makes no guarantees with respect to the condition of the conveyances. The Contract shall not be invalid due to defects discovered after award of the Contract that may have been discovered by a reasonable inspection of the conveyances by the Contractor before award.

PERFORMANCE REQUIREMENTS

The Contractor agrees to maintain the following minimum performance requirements for the elevator door types designated in the table below:

A. Door Types Maximum Door Maximum Door Open Time Close Time:

- 36" side opening 2.5 seconds 3.7 seconds
- 42" side opening 2. 7 seconds 4.3 seconds
- 44" side opening 2. 7 seconds 4.6 seconds
- 48" side opening 2. 7 seconds 4. 7 seconds
- 36" center opening 1.8 seconds 2.5 seconds
- 42" center opening 2.0 seconds 2. 7 seconds
- 44" center opening 2.0 seconds 2.8 seconds
- 48" center opening 2.0 seconds 3.0 seconds

- B. **Maximum Floor to Floor Time:** Floor to floor times are measured from the time the doors start to close, including a typical one floor travel, until the elevator is level with the next floor and the doors are 3/4 open to fully open position. Minimum requirement is thirty (30) seconds and maximum is sixty (60) seconds.

-
- C. **Quality of Ride:** Elevators shall provide smooth acceleration/deceleration transitions in and out of the floors. The travel between floors shall be smooth and quiet.
 - D. **Maximum Door Opening Time:** Door opening times are measured from the start of car door open until the doors are in the fully open position. Minimum requirement is fifteen (15) seconds and maximum is thirty (30) seconds.
 - E. **Maximum Door Closing Time:** Door closing times are measured from the start of door close until hoist way doors are fully closed. Door closing static pressure shall not exceed 30 lbs.
 - F. **Door Dwell Time:** Door dwell time is measured from the time the door is fully open until the time the doors begin to close. Door dwell time from a hall call shall be 5.0 seconds+/- 1.0 seconds or as agreed upon with LAWA. When the system is capable of establishing a different dwell time from a car call this shall be set at 3.0 seconds+/- 1.0 second. When the hall button is located at a lengthy distance from an elevator in a group, the door dwell time from a hall call shall be established at minimum acceptable ADA I accessibility standards.
 - G. **Floor Accuracy:** Elevator car shall be level with floor under all load conditions.
 - H. **Rated Speed:** Variance from rated speed, regardless of load, shall be within 5% of original contract speed.
 - I. **Performance:** Performance shall be measured by original installation design parameters. Eliminating operations or shunting any circuits without written permission by LAWA may be considered a default of contract.

CODE REQUIRED INSPECTIONS AND TESTS

- A. The Contractor shall make "Periodic Inspections and Tests" in accordance with all State of California requirements, and with ASME A 17.1, including oil buffers, car and counterweight safeties and governors for traction elevators and relief valve tests for hydraulic elevators. Tests for traction elevators shall comply with current applicable code requirements.
- B. The Contractor shall provide three (3) weeks prior notification to LAWA of its intention to perform Category 5, rated speed, rated load tests so a representative of LAWA may schedule and witness the tests. Written reports of all "Periodic" tests shall be submitted to LAWA Facilities and Technical Services Representative on a quarterly basis via email. The Contract Price shall include all such required tests during regular hours.
- C. Additionally, the Contractor shall advise LAWA one (1) year prior to the approximate anticipated date for Category 5 tests so LAWA can consider the need for performing the tests in overtime and prepare budgets accordingly.

-
- D. The Contractor shall assist with periodic inspection and testing of Standby Power Operation in accordance with ASME A17.1-2004, Rule 8.11.2.2. 7. These tests shall be performed during overtime hours.
 - E. The Contractor shall affix metal tags to each of the tested devices for all Category 1 and 5 tests, clearly indicating: 1) the test date, 2) the code requirement number, and 3) name of the Contractor making the test, in accordance with ASME A17.1-2005, Rule 8.11.1.6.
 - F. The Contractor's failure to execute statutory tests mandated by either National Codes or local jurisdictions or regulations within thirty (30) calendar days of required time constraint shall subject the Contractor to a \$1000.00 penalty per calendar day per unit per infraction beginning on the thirtieth day subsequent to the required date and continuing until LAWA receives written notification from the Contractor of completion of required test.
 - G. Statutory tests include but are not limited to the tests described herein.
 - H. The Contractor shall attempt to schedule said tests in the presence of local enforcing authority and/or persons designated by LAWA.
 - I. Scheduling difficulties shall not exempt the Contractor from performing tests in strict compliance with applicable Code or regulatory requirements.
 - J. The Contractor will forward results to California State Inspection Division, copying the LAWA Maintenance Manager within seven (7) calendar days of all tests.
 - K. The Contractor will comply with LAFD Reg 4 and any other LAWA requirement to comply with regulation on an annual basis required within the same month each year.
 - L. Before performing tests of the conveyances, the Contractor shall take all necessary steps to verify that the equipment is in a safe condition for testing, shall check appropriate clearances, and shall adhere to best practices in making the tests, including all safety procedures in general use by the Contractor or published by the Contractor or manufacturer of the equipment. LAWA shall have no responsibility for damage to vertical transportation equipment or to building structure due to Category 5 tests.
 - M. LAWA will assist the contractor in scheduling annual maintenance and testing, including LAFD Reg 4 testing via a yearly published calendar and entering corresponding data of contractor's monthly work orders of all regulatory maintenance to be completed which will be returned to LAWA by the contractor and enter corresponding data in LAWA's CMMS.

HOURS AND MANNER OF WORK

LAWA has established the following day /time schedule for conveyance Maintenance and Repair (considered normal work): The Contractor staff assigned to LAWA will have no other scheduled customer responsibilities. Changes to these hours will be mutually agreed on by both LAWA and the Contractor:

- A. The Contractor must maintain minimum onsite 24/7 presence and staff during the normal 5-day work week and 24/7 presence and minimum staff on weekends and holidays. Refer to Table below for schedule.

Minimum Coverage	Minimum Staff
Daily Coverage (M-F)	
7:15am to 3:15pm (8 hrs.) - AM	4 – One Supervisor and Three Technicians
3:15pm to 11:15pm (8 hrs.) - MID	4 – One Supervisor and Three Technicians
11:15pm to 7:15am (8 hrs.) - PM	10 – One Supervisor and Nine Technicians
Weekend and Holiday Coverage	
24/7 coverage (AM, MID, & PM)	4 – One Supervisor and Three Technicians

- B. The personnel level of coverage during these hours shall be adequate to respond to all outages (both emergency and nuisance), make repairs, and perform all necessary maintenance as detailed within this contract.

- C. City of Los Angeles / LAWA Holidays are listed below:

1. New Year's Day (January 1 or observed on closest weekday)
2. Martin Luther King, Jr. Day (observed on the third Monday in January)
3. President's Day (observed on the third Monday in February)
4. Caesar Chavez Day (observed on the last Monday in the Month of March)
5. Memorial Day (observed on the last Monday in May)
6. Juneteenth (observed on June 19th or the closest weekday)
7. Independence Day (observed on the 4th of July or the closest weekday)
8. Labor Day (observed on the first Monday in September)
9. Indigenous Peoples Day (observed on the second Monday in October)
10. Veterans Day (observed on November 11)
11. Thanksgiving Day and the Friday after (observed on the fourth Thursday/Friday in Nov.)

12. Christmas Day (observed on the 25th of December or the closest weekday)

D. Service Response Time.

Conveyances called out of service during work hours must be responded to within fifteen (15) minutes from notification from Airport staff or Airport Response Coordination Center (ARCC) staff to the Contractor. The ARCC staff shall call out service calls to the Contractor's technicians via two-way radio communication or by phone at the time they generate the emergency work order (EM). The technician will respond to the ARCC via two-way radio communications or by phone when they arrive at the conveyance to indicate they are on-site and have commenced in the effort to resolve the equipment outage. This period of time will be noted on the problem ticket and will constitute the response time.

- E. Additional staffing required outside of normal work: The Contractor will notify LAWA, at which time the Contractor will offer options and clearly identify cost and overtime if necessary, and then LAWA would approve/disapprove the dispatch. There should be follow up written communication given to LAWA identifying action, if any, taken. Non-emergency requests are billable at an hourly rate in fifteen (15) minute increments.
- F. The Contractor must provide a detailed explanation of Scope of Work and costs, including labor, material breakdown, mark-up percentages, and will provide supporting invoices for material and time tickets if requested by LAWA for any additional work performed beyond the scope of work in this Contract.
- G. Travel time to and from LAWA for all maintenance will be included. No separate travel time or mileage will be allowed.
- H. The Contractor shall follow secured Airport protocol by wearing Contractor Uniforms and the proper Identification card depending on location.
- I. Invoices submitted for payment shall show:
 - 1. The complete Scope of Work performed.
 - 2. List specific conveyance the invoice references and person contacted.
 - 3. Shall list the correct wage amount and must also show the material cost and mark-up percentage.
- J. Invoices that are not complete or accurate will be returned to the Contractor with payment due sixty (60) calendar days from when the corrected invoice is received.
- K. Sensitivity to Airport Customers: The Contractor's employees will be sensitive to airport tenants' and other customers' needs during their work activity and will not create excessive noise. Work that will generate excessive noise must be scheduled through LAWA.

EQUIPMENT AVAILABILITY

- A. The Contractor shall maintain conveyances in such a manner as to provide a safe and reliable service for users. The benchmark for measuring performance related to this expectation shall be determined as follows:
1. The Airport passenger elevators shall be operational and have an availability of no less than 97%. This level will be measured continuously (24/7/365).
 2. The Airport passenger escalators shall be operational and have an availability of no less than 96%. This level will be measured continuously (24/7/365).
 3. The Airport passenger moving walkways shall be operational and have an availability of no less than 95%. This level will be measured continuously (24/7/365).
- B. Long-term outages requiring units to be out of service for more than twelve (12) hours must be listed on the daily out of service greater than 12-hour report.

The first operational metric is generated as follows:

1. Problems are reported to the Airport's Response Coordination Center (ARCC).
2. An Emergency Maintenance (EM) work request is generated for the specific conveyance via the LAWA's / MAXIMO Computerized Maintenance Management System (CMMS).
3. The conveyance is noted as "out of service" at the time of the opening of the (EM) work request.
4. Once a technician is dispatched, and the problem is resolved, the technician must immediately communicate back with the ARCC to indicate the problem has been resolved. This will allow the ARCC to close the EM work request for that conveyance and return it to service.

Data gathered from the EM work request is utilized to calculate the equipment availability. The data is gathered in report form and provided to the Contractor. This data is available real-time via the Airport's Lift-Net System or the conveyance dashboard.

The Contractor's performance will be graded based on these criteria - which will be reported out during a monthly elevator/escalator meeting held with LAWA staff. Any occurrences not meeting the required service level may be considered as unacceptable performance. As a reference, applicable downtime per device must not exceed 3.4 hours per week for passenger elevators, and 5.04 hours per week for passenger escalators and moving walkways. This is calculated as follows:

1. $24 \text{ hours/day} \times 7 \text{ days/week} = 168 \text{ conveyance-hours/week}$

2. Maximum downtime per week per passenger elevator is 3%, passenger escalators are 4%, and moving walkways is 5% of 168 conveyance-hours/week.
3. Passenger elevator $168 \times 3\% = 5.04$ hours per week per elevator / Passenger escalators are $168 \times 4\% = 6.72$ hours per week per escalator and moving walkways $168 \times 5\% = 8.4$ hours per week per moving walkway.

Unless mutually agreed upon, no conveyance device shall be out of service continuously for more than one hundred twenty (120) hours. LAWA may also withhold payment under the Contract if the shutdown is considered an unreasonable delay.

REMOVAL OF CONVEYANCES FROM SERVICE

- A. Removal of elevators/escalators from service during peak hours shall be coordinated with and approved by LAWA.
- B. Removal of conveyances for routine maintenance during off-peak hours is expected, but notification to and coordination with LAWA should be provided whenever possible, unless otherwise agreed.

LAWA'S RIGHT TO INSPECT AND REQUIRE WORK

- A. LAWA reserves the right to make or cause to be made inspections and tests whenever it deems it advisable or necessary to ascertain that the requirements of this Contract are being fulfilled.
- B. The Contractor agrees to furnish personnel to accompany LAWA staff and/or their representatives during such inspections.
- C. Deficiencies noted by LAWA shall be submitted in writing to the Contractor. The Contractor shall promptly correct deficiencies covered under the terms of this Contract at its expense within thirty (30) calendar days, unless otherwise agreed by LAWA.
- D. LAWA may retain a qualified Elevator Consultant acceptable to both parties to make tests and inspections on its behalf.
- E. If the Contractor fails to perform the work required by the terms of this Contract in a diligent and satisfactory manner, LAWA, after thirty (30) calendar days' written notice to the Contractor listing the deficiencies or failures to perform, may perform or cause to be performed all or any part of the work required hereunder.
- F. The Contractor agrees that it will reimburse LAWA for any expenses incurred therefor, or LAWA, at its election, may deduct such expenses from any sum owed to the Contractor.

- G. The waiver by LAWA of a breach of any provision of this Contract by the Contractor shall not operate or be construed as a waiver of any subsequent breach by the Contractor.
- H. In the event the Contractor disputes a listing of deficiencies or failures to perform, in whole or in part, and the parties cannot resolve the dispute, a qualified Elevator Consultant acceptable to both parties may be retained to conduct a non-binding mediation of any disputes, and LAWA and the Contractor shall split the mediation fees equally.
- I. In the event that LAWA retains a mutually acceptable Elevator Consultant to provide a maintenance audit:
 - 1. A reasonable time will be allowed for the Contractor to correct the deficiencies noted in the maintenance audit; and
 - 2. If the Elevator Consultant's follow-up review reveals the deficiencies (either in whole or in part) have not been corrected to LAWA's satisfaction, the Contractor shall reimburse LAWA for the cost of any further follow-up reviews initiated by it, in its sole discretion, until all deficiencies have been resolved to the satisfaction of LAWA or its authorized representative.
 - 3. Such reimbursement may be by means of invoicing the Contractor, or by deducting the cost of such additional review(s) from sums owed to the Contractor.

EMPLOYEES OF THE CONTRACTOR TO BE SATISFACTORY

- A. The Contractor agrees that all labor it furnishes will be trained journey-level mechanics and helpers, thoroughly skilled in elevator, escalator, and moving walks in Preventive Maintenance and Repair, directly employed and supervised. Any and all employees performing work under this Contract must have the required licenses set forth herein and shall be satisfactory to LAWA. LAWA shall be given at least fifteen (15) calendar days' notice prior to making changes to site-specific mechanic/employees.
- B. The Contractor shall be responsible for maintaining reasonably satisfactory standards for employees' competency, conduct, courtesy, honesty, integrity, accurate completion of maintenance control plan records, and appearance (including clean uniforms identifying them as employees of the Contractor) and shall be responsible for taking such disciplinary action with respect to any employee, as may be necessary.
- C. After consultation with LAWA and/or LAWA's elevator consultant, the Contractor shall, after being given reasonable notice, replace any employees not meeting the above criteria.

- D. The Contractor will provide a list of back-up personnel within ten (10) business days after award of contract for each employee assigned to LAWA in the event of his or her illness, disability, vacation, leave of absence for any reason. The back-up personnel are expected to cover all duties and responsibilities of the Contractor's regular personnel with no disruption in service. LAWA will be informed prior to back-up personnel being used.

EXCLUSIONS: THE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR THE FOLLOWING

- A. Repairs, callbacks, modifications, adjustments, or replacement required because of negligence, accident, or misuse of the equipment by anyone other than the Contractor, its employees, subcontractors of the Contractor, servants or agent, or other causes beyond the Contractor's control except ordinary wear.
- B. Repair or replacement of building items, such as hoistway or machine room walls and floors, car enclosures, car finish floor material, hoistway and car entrance frames, car or hoistway sills, signal fixture faceplate surfaces, cleaning of car interiors, and cleaning of the portions of sills visible when the doors are open.
- C. Mainline and auxiliary disconnect switches, fuses, and feeders to control panels. The Contractor is responsible for wires from the mainline disconnect to the elevator controllers.
- D. Lamps for car, machine room, and pit illumination. However, Contractor shall replace machine room and pit lamps if they are provided by LAWA.
- E. Smoke and heat sensors and related fire safety equipment. All fire alarm equipment outside of the machine room and hoistway. All telephone equipment outside of the machine room and hoistway.
- F. Standby power generators and associated contacts and relays and wiring to the elevator machine rooms (exclusive of wiring connections to elevator controller).
- G. Building paging and/or communication systems, including consoles, panels and wiring to junction box on elevator controllers. However, the Contractor shall maintain paging system and emergency telephone speakers in the cars and wiring from each such speaker to the machine room junction boxes.
- H. Failure or fluctuations of property electric power (Callouts during onsite hours will not be billable), repair or replacement of building items including hoistway and machine room heating, air conditioning, or humidity control. The Contractor is responsible for heating and cooling equipment mounted in or on elevator equipment cabinets and dedicated to heating and/or cooling the equipment therein.
- I. Ingress by water or other material into machine room, hoistway, car enclosure, or pit.

-
- J. The cost of replacement of keys located in fire key box will not be the responsibility of the Contractor, but the Contractor will be responsible for ensuring all required keys are included in each fire key box. Ordering and replacing missing keys will be the responsibility of LAWA.
 - K. Underground hydraulic casings, cylinders, and piping.

REMOVAL OF PARTS

- A. No parts or components required for the performance of Services on the vertical transportation equipment or required for its operation may be removed from the job site without prior written approval from LAWA.
- B. This does not include renewal parts stocked on the job by the Contractor but does include parts and components which were installed with and are a part of the conveyance installation, and parts delivered to the property and paid for by LAWA, which shall remain LAWA property until installed on the equipment.
- C. Parts that become out of service and are replaced during the performance of Services may be removed from the job site to be properly discarded.

MACHINE ROOMS

- A. No open storage of parts or supplies shall be permitted, including flammable containers used for storing parts or supplies.
- B. A metal can and lid shall also be provided in each machine room for the temporary storage of oily rags.
- C. Machine rooms and parts cabinets shall be kept clean and neat at all times. Floors shall be kept professionally painted on a continuous basis, and maintained clean and free of dirt, debris, oil, carbon dust, rags, un-stored parts, or other items.

WIRING DIAGRAMS

- A. Wiring diagrams shall be Laminated and stored (except where mounted on boards) and shall be copied and replaced by the Contractor if their condition warrants.
- B. The Contractor shall maintain their own and LAWA's complete set of straight-line wiring diagrams, showing "As-Built" conditions and any changes or modifications to circuits resulting from control modifications, parts replacement, or equipment upgrades.
- C. LAWA may reproduce these original or modified "As-Built" drawings and shall retain sole possession of this set of drawings in the event that the Contract is terminated, or, if LAWA's set of drawings cannot be located at that time, LAWA may reproduce the Contractor's drawings at his expense at that time.

- D. The Contractor shall also maintain its own set of wiring diagrams in readable condition, and, if reproduction becomes necessary, it will check for readability of marked-up changes on the reproduced set and retrace them if necessary.

MACHINE ROOM LOG

- A. The Contractor shall post a preventive maintenance schedule and a work log in a conspicuous location in each elevator machine room. For escalators, the schedules and logs shall be in rooms and/or boxes designated by LAWA.
- B. The log shall include all entries for routine maintenance and repairs, including Supervisor's surveys.
- C. Entries shall include date work is completed, Mechanic's or Supervisor's name, brief description of work completed (including number of conveyances serviced) and the approximate time required for the work.
- D. LAWA may inspect and copy the logs and maintenance schedules at any time.
- E. If the Contractor is utilizing a process-oriented computer-based system to schedule maintenance operations, the Contractor and LAWA shall review work and callback information which can be provided and the Contractor shall provide such documentation as LAWA may require, it being the intent of this contract that data similar to that described above shall be available by means of computer printouts which are readily obtainable by LAWA.

MAINTENANCE CONTROL PROGRAM

Contractor will be Maintenance Control Program (MCP) certified with the California State Labor and Industries. The Maintenance Control Program shall be posted on the controller cabinets, at least one per group, as required by current code, or located in a visible location in each machine room. For escalators, in rooms and/ or boxes designated by LAWA.

EXTENDED SHUT DOWN

LAWA shall be notified a minimum forty-eight (48) hours in advance for any work that requires a conveyance to be out of normal operation for more than twelve (12) hours. The Contractor will coordinate with LAWA Maintenance Manager to determine the best time for the outage.

SCHEDULING OF WORK

- A. Within ninety (90) days of receipt of a fully executed copy of this Contract, the Contractor shall prepare and submit a schedule of repairs, tests, or other work which will require a shutdown of one or more conveyances within the next ninety (90) days. The nature of work, conveyance involved, and anticipated days out of service shall

be included. Subsequently, this schedule shall be updated weekly in time for the weekly meeting referenced in this section.

- B. The Contractor will not contact anyone outside of LAWA, besides California State or City of Los Angeles Inspection Division to schedule required tests, without authorization from the LAWA Maintenance Manager and/or contract administrator.
- C. The Airport is an operating facility which will continue in full operation throughout the term of this Contract. Where Airport operations conflict with those of the Contractor, the operations of the Airport will take precedence over those of the Contractor. It shall be the sole responsibility of the Contractor to schedule and coordinate its activities with those of the Airport to assure minimum disruption of Airport operations.

THE CONTRACTOR REVIEWS

Weekly, unless otherwise directed by LAWA, the Contractor shall meet with LAWA Maintenance Managers or his/her designee(s). LAWA is responsible for scheduling the meeting. The scope of this meeting shall include:

- A. A review of the previous week's callbacks.
- B. A review of maintenance including work performed, progress on any deficiency Lists or other programs, and scheduled work requiring removal of conveyances from service.
- C. A review of any reported complaints.
- D. Such other conveyance related items as may be appropriate.
- E. Daily basis report shows every car in past twenty-four (24) hours that had a service call.
- F. If requested by LAWA, the Contractor shall provide a monthly List of callbacks and billable invoices for work outside the contract for review prior to the meetings.

SPECIAL CONDITIONS

- A. Annually, the Contractor shall, within thirty (30) days of the end of each calendar year, provide to LAWA maintenance management:
 - 1. A written report providing results of conveyances that have been audited by the Contractor in the past year.
 - 2. The duration between audits of each conveyance covered under this Contract shall not exceed three (3) years.

-
3. At its option, LAWA may request such reports prior to the end of each year, in which case the next such annual report need not be provided, unless otherwise agreed.

- B. LAWA requires remote monitoring of the equipment to facilitate its Maintenance program, all related installation and maintenance costs shall be at LAWA expense. The Contractor is responsible for all Lift-Net® connections in direct contact with elevator/escalator controls and will maintain and ensure proper functionality of these connections on a quarterly cycle or as requested by LAWA.

LAWA'S RESPONSIBILITIES

- A. Provide clear, safe, and convenient access to the Property and to elevator equipment rooms and pits.
- B. Maintain car Lighting, telephone lines to controller terminals, equipment room electrical switch gear, and electrical feeders to conveyance controllers, Firefighters' Control Room, and Lobby Security Desk consoles.
- C. Maintain equipment room heating and air conditioning systems. Temperature range sixty (60) degrees Fahrenheit to ninety (90) degrees Fahrenheit, non-condensing.
- D. Maintain fire alarm initiating devices in elevators host ways, Lobbies, machine rooms, etc.
- E. Prevent storage of property, equipment, or supplies in elevator equipment rooms and obstruction of equipment room access corridors and doors.
- F. Maintain standby power generator systems (if applicable) and related switch gear and feeders.
- G. Maintain equipment rooms, hoist ways, and pits in a code compliant and dry condition.
- H. Coordinate with the Contractor in regard to LAWA required equipment retrofits such as Lift-Net® and Sleep mode systems, etc.
- I. During building construction and/or retrofit, make provisions to limit infiltration of dust and debris into conveyance equipment and equipment spaces.
- J. Coordination with the LAWA instrument shop when performing LAFD Reg 4 testing.

COMMUNICATION

The Contractor will arrange for all communication between LAWA and contractors' employees via use of a cell phone or radio.

CONTRACTOR OFFICE/SHOP SPACE:

LAWA will provide Contractor the space it deems necessary to perform the Services under this RFP. If Contractor desires additional leased space LAWА will provide Contractor with information regarding any available lease hold areas to rent at Contractor's expense and not billable to LAWА. LAWА assumes no responsibility against loss, whether by theft or otherwise, of any parts, tools, equipment and supplies stored on LAWА's premises.

4. THE AIRPORT OPERATIONS ENVIRONMENT

It is important to note that the airport environment presents a set of unique challenges that do not exist in a typical commercial setting.

- A. Contractor may be required to perform work in areas that are in "secure or sterile areas" of the airport and not open to the general public. In such cases, all personnel must possess LAX Security Identification Area (SIDA) badges and it will be the responsibility of the Contractor to comply and maintain all requirements of LAWА's Security Credentialing Office, also known as Badge Office, and the United States Customs and Border Protection to secure the required badges for all staff with proper icons and seals to access "secure or sterile" areas. Please note that these additional requirements may increase the timeline and must be completed before work can be performed in those secure/sterile areas. For questions related to security badge requirements for LAX and Van Nuys call (424) 646-5500 and/or consult the LAWА Badge Office website at <https://sbo.lawa.org>.

Contractor and its subcontractors will be required to comply with LAWА security policies and meet established requirements. Contractor will be responsible for all expenses incurred by LAWА for corrective action resulting from either the Contractor's or its subcontractor's non-compliance with LAWА or Transportation Security Administration (TSA) rules.

- B. Facilities must be open 365 days-a-year with operating hours and staffing levels reflecting the fluctuations in daily passenger traffic, as determined by LAWА from time to time.
- C. Deliveries for both construction and operations must be made in conformance with LAWА and TSA regulations, which may include limitations on time of day and location/routing. Staff requiring access to drive on the airfield must have a driver icon on their badge and a proper motor vehicle permit(s) on the vehicle that allows access to the airfield issued by the LAWА Airfield Permits Office.

5. CITY POLICIES AND AGREEMENTS

Contractor will be required to comply with City policies and agreements outlined in this RFP and its attachments (including, but not limited to Administrative Requirements, General Conditions, Special Conditions, and Project Requirements) throughout the term of the Contract. Prevailing wage, antitrust claim assignment, nondiscrimination, local/small business enterprise program, child care program, child support obligations, affirmative action provisions, bidder contributions, and municipal lobbying ordinance are to be part of any contract awarded pursuant to this notice. To be eligible for award, each proposer must comply with the Affirmative Action requirements which are contained in the Contract Documents. Proposers are also required to comply with LAWA's Contractor Responsibility Program, the standards for which are contained in the Contract Documents.

The "General Prevailing Wage Rates" shall be those rates as determined by the Director of the Department of Industrial Relations of the State of California. Copies of these rates are on file in the Office of Contract Compliance, Bureau of Contract Administration, telephone (213) 847-1922.

Information regarding prevailing wage rates may be obtained from the Division of Labor Statistics and Research, Prevailing Wage Unit, P.O. Box 420603, San Francisco, CA 94142, Telephone (415) 972-8628, Fax (415) 972-8640.

Along with the commonly recognized classifications, the following categories are also covered under prevailing wage laws:

- Offsite truck hauling;
- Geotechnical / geological work;
- Inspection; and
- Testing work.

The proposer should allow for and expect increases in the prevailing wage.

6. PROHIBITED PROPOSER COMMUNICATIONS

Proposers may only rely upon written information provided by LAWA. Proposers shall not rely upon, and LAWA shall not be responsible for, any oral information or instructions provided in reference to the RFP. Potential proposers must not attempt to contact or communicate with any Los Angeles City employee, elected official, any LAWA consultant, any member of the Proposal Evaluation Team, or BOAC members to discuss or ask questions about the contents of the RFP or the selection process at any time prior to the notification that the contracts have been awarded to the responsive, responsible proposer determined to have the best overall qualifications based on the requirements of

this RFP. Until notification of the award is received, all communications must be in writing and directed to the email address listed on the cover page of this RFP, subject: RFP – Elevator, Escalator and Moving Walkway Full Maintenance, Repair, Modernization, Materials and Related Services. Failure to comply with these procedures may result in Proposer disqualification, at LAWA's sole discretion.

7. PRE-PROPOSAL CONFERENCE

LAWA representatives will conduct an online pre-proposal conference for this project, at which they will present an overview of the current LAWA Conveyance and Maintenance Program and review the procurement process, schedule, and administrative requirements for the project. Although the conference is not mandatory, Proposer's are highly encouraged to participate. The date, time and location of the conference are listed on the cover page of this RFP. If the proposer is a multi-firm entity, a representative of the entity should attend and follow the procedures listed above.

The pre-proposal conference is scheduled on:

Date:	Wednesday, September 7, 2022
Time:	9:00 a.m. to 11:00 a.m. Pacific Time
Location:	Virtual Meeting
Note:	RSVP is required Contact Gary Abel via email at FMDContracts@lawa.org Provide your company's name and name/title of all attendees.

Sign Language Interpreters, assistive listening devices, or other auxiliary aids and/or services may be provided upon request. To ensure availability, you are advised to make your request to the point of contact organizing this meeting at least five business days prior to the meeting you wish to attend. The point of contact will then request the resource through the LAWA ADA Office. For additional questions regarding special accommodation, please contact: ADAOFFICE-LAWA@lawa.org.

8. SITE WALK

LAWA representatives will conduct a Site Walk for this project, to tour our facilities. Proposers are required to bring their own copy of this RFP including attachments to the Site Walk. Copies will not be provided. Each Proposer will be limited to three (3) attendees for the Site Walk. Each proposer must submit a copy of a valid LAX Airport Badge or the full name, birth date, and legible copy of a photo identification for each Site Walk participant. This information will be treated confidentially and will be used to secure

temporary escort access. Individuals for whom this information is not provided will not be admitted to the Site Walk.

The Site Walk is scheduled on:

Date: Thursday, September 8, 2022
 Time: 8:00 a.m. to 1:00 p.m. Pacific Time
 Location: 7407 World Way West
 Los Angeles, CA 90045
 Note: **RSVP is required**
 Contact Gary Abel via email at FMDContracts@lawa.org
 Further instructions will be emailed to attendees prior to the Site Walk.

Sign Language Interpreters, assistive listening devices, or other auxiliary aids and/or services may be provided upon request. To ensure availability, you are advised to make your request to the point of contact organizing this meeting at least five business days prior to the meeting you wish to attend. The point of contact will then request the resource through the LAWA ADA Office. For additional questions regarding special accommodation, please contact: ADAOFFICE-LAWA@lawa.org.

9. QUESTIONS AND ANSWERS

Any questions regarding the proposal requirements and any additional proposal criteria, instructions, or corrections, if any, received prior to the pre-proposal conference, may be discussed at the pre-proposal conference. All questions received by the deadline established below will be addressed in an addendum posted to www.rampla.org. In addition, should LAWA amend the requirements set forth herein, a written addendum will be issued reflecting any changes and such addendum will also be posted at www.rampla.org. Thus, all companies submitting proposals in response to this RFP must register in www.rampla.org.

All questions or requests for clarification on the RFP must be clearly presented in writing and transmitted by email no later than Friday, September 16, 2022, at 5:00 Pacific Time Gary Abel via email at FMDContracts@lawa.org. Question responses will be posted in an addendum to www.rampla.org.

LAWA will only communicate with one person per proposal. It will be the responsibility of the Proposer to identify in the proposal the correct name and address of the contact person, phone number, fax number, and e-mail address.

If a proposer claims that any provision of the Request for Proposals is unduly

restrictive, improper or otherwise preclude a proposer from submitting a proposal the proposer must submit its request in writing that the Request for Proposals be modified not less than five (5) business days before the proposal due date. This Pre-Award Protest Procedure and time limit is mandatory and a proposer's sole and exclusive remedy and a proposer's failure to comply with these procedures shall constitute a waiver of any right to further pursue any Pre-Award Protest, including filing a Government Code claim or legal proceedings.

10. PROPOSAL SUBMITTAL INSTRUCTIONS

The proposal shall be prepared in accordance with the Instructions to Proposers and be submitted to LAWA as follows before the deadline listed on the cover page of this RFP:

Potential Proposers should read, review and understand this RFP, all the attachments and any addenda issued. Proposals submitted after the deadline will not be accepted. The proposal should be prepared as specified as to form, content, and sequence.

Proposals must be submitted electronically through the following process:

Step 1: Please scan your proposal documents as PDFs with the following name format:

Conveyance_**CompanyName**_Part1_TechnicalManagementProposal.pdf

Conveyance_**CompanyName**_Part2_AdminRequirements.pdf

Conveyance_**CompanyName**_Part3_FinancialCapability.pdf

Step 2: Please click on the following to submit your two proposal documents:

[Proposal Document Submittal](#)

If you are unable to open the above link due to computer restrictions, open this document in Adobe Reader and copy-paste the following URL into a web browser (Chrome, Firefox, etc.):

<https://lawa.app.box.com/f/6fea89d883854eb6b3531ecf6123c3ae>

Important Notes Regarding Proposal Submittal:

- **Files must be successfully uploaded by the due date and time.** Please start the upload process at least one hour before the deadline to allow for file transfer.
- Please make sure to upload the individual files. Folders cannot be uploaded.
- The email address required for submittal may be contacted for questions and clarification.
- Proposal document revisions are allowed prior to the deadline. Please submit your

updated files with the same filenames and LAWA will accept the latest copies prior to the deadline.

- For further help regarding proposal submittal, please contact **Javier Gomez** at jgomez@lawa.org and **Dana Tominaga** at dtominaga@lawa.org.

The proposal must be received by LAWA by 11:59 p.m. PDT on Friday, October 14, 2022. LAWA will not consider any proposals received after the due date and time, October 14, 2022 no later than 11:59 p.m. PDT.

11. MINIMUM QUALIFICATIONS

The Proposer must hold and provide verifiable proof in their Proposal of an existing and currently valid California Contractor's "C-11" License. If the Proposer is not in possession of such a license at the time the proposal is submitted, said proposal will be deemed non-responsive and will be rejected pursuant to California Business and Professions Code §7028.15(e). The Proposer shall have qualified personnel and subcontractors capable of performing the work as described in the RFP.

12. PROPOSER'S STRUCTURE

Provided that the Proposer meets the Minimum Qualifications previously stated in this RFP, LAWA does not intend to limit the type of entity that may be proposed. LAWA recognizes that it is common to create special-purpose entities. Proposing entities may include individuals, corporations, partnerships, limited liability corporations or joint ventures. The Proposer, i.e., the proposing entity, should be the legal entity that will execute the Contract. Such entity may be one that is newly created for the purpose of proposing on this opportunity. The Proposer need not have all the required skills and experience in house but may assemble a team to provide the necessary skills and experience (the "Proposer Team"). The Proposer Team may be assembled in a variety of ways, including through subcontracting, partnering, joint venturing, etc. It will be the entirety of the Proposer Team that will be evaluated and scored for the RFP evaluation. Every member of a Proposer Team does not need to have conveyance maintenance experience. However, the Proposer Team, taken as a whole must demonstrate sufficient elevator, escalator and moving walkway maintenance and repair experience to satisfy the requirements of this RFP. Explain how you plan to staff and operate the project with an organizational chart and staff descriptions with resumes.

13. INTERPRETATION OF RFP DOCUMENTS

LAWA will not accept or respond to oral inquiries. It shall be the Proposer's responsibility to ensure it has reviewed all such interpretations or clarifications. If any proposer finds discrepancies or omissions in, or there is doubt as to the true meaning of, any part of the RFP, written request for corrections, clarification or interpretation should be clearly presented in writing. Questions must be submitted by email received by the deadline provided on the cover page of this RFP. Questions submitted after the due date may not be answered. All RFP documents and related documents including questions and answers can be downloaded from the City of Los Angeles Regional Alliance Marketplace for Procurement website www.rampla.org.

14. ADDENDA

If LAWA determines that a decision or interpretation requires that an addendum to the RFP document be issued, such addendum will be issued in writing and signed by a LAWA representative and posted on the Regional Alliance Marketplace for Procurement (RAMP) website: www.rampla.org. Addenda so issued are to be considered a part of this RFP. Only questions pertaining to the information and requirements in the RFP will be answered. LAWA reserves the right to revise the RFP documents at any time. Any such revision(s) will be done exclusively through, and described in, addenda to the RFP which will be posted at www.rampla.org. If LAWA determines that the addenda may require significant changes to the scope of work, the deadline for submitting the proposals may be postponed by the number of days that LAWA determines will allow proposers sufficient time to revise their proposals. Any new submittal deadline date for delivering proposals to LAWA shall be included in the addenda. Only changes made to the RFP by addenda are binding on both LAWA and the proposers. LAWA is not responsible for any explanation, clarification, interpretation or approval made or given in any manner except by addendum. All addenda will be clearly identified as such. It shall be the proposer's responsibility to ensure they obtain and review all addenda to the proposal documents by regularly checking www.rampla.org. LAWA may disqualify the proposer for any failure to acknowledge receipt of addenda.

15. GENERAL PREPARATION OF PROPOSAL SUBMITTAL

LAWA shall not be responsible for any costs associated, in any way, with the preparation of any proposal or submission made as a part of, or associated with, any proposal. LAWA shall not be responsible in any manner for any costs associated with the preparation or submission of any documents or materials purchased, prepared or presented during any interviews or any additional documentation provided or requested by LAWA.

Potential Proposers should read, review and understand this RFP, all the attachments and any addenda issued. By submitting a proposal in response to this RFP, Proposer

agrees to be bound by all of the terms, conditions, disclaimers and requirements set forth in the RFP and attachments. LAWA must receive proposals by 11:59 p.m. Pacific Time on Friday, October 14, 2022. Any Proposal received after the due date and time, October 14, 2022, no later than 11:59 p.m. Pacific Time will not be considered. The proposer shall complete all forms. Where the form is inapplicable, the proposer shall state "N/A." The proposer shall initial all interlineations, alterations or erasures in its submittals. Except as otherwise specifically directed herein, the proposer shall not supplement the printed matter on the required forms or make substitutions thereon. The proposer's completed forms and narrative shall constitute its official submittals. The proposer, by submitting its Administrative Requirements submittal and its proposal, acknowledges that it understands the contract and the scope of work, and that the proposer shall be able to perform as required. Please refer to Section 10 for Proposal Submittal Instructions.

16. PREPARATION OF PROPOSAL PART 1 – TECHNICAL/MANAGEMENT PROPOSAL

To enable the Evaluation Panel to conduct its review of the Proposal, provide the following information, in separate file:

a. Cover Letter

Provide a cover letter with a summary including the Proposer's name, address, telephone number, fax number, email address, federal ID number, CA State Contractor's License Number, and name and title of contact person. Identify the Proposer, the members of the Proposer Team, and the Guarantor, if applicable. Provide a description of the legal structure of the Proposer, the Proposer Team, and Guarantor and the legal nature of the business relationships among them.

If a partnership, state the full name, address and other occupation (if any) of each and every partner; whether he or she is full time or part time; whether each partner is a general or limited partner; and the proportionate share of the business owned by each partner. Provide a copy of the partnership agreement.

If a joint venture or limited liability company, state the names of the firms or individuals participating in the joint venture or limited liability company and the principal officers in each firm or names of the members of the limited liability company; and the proportionate share of the business owned by each joint venture, or the number of shares held by each member of the limited liability company. Include a copy of the joint venture agreement or limited liability Company operating agreement.

If a corporation, state the full name and title of each of the corporate officers. Also, include a copy of the Articles of Incorporation and Bylaws. If the Proposer is wholly owned by another entity, then provide sufficient information of the parent and upstream ownership entities for LAWA to understand the ultimate ownership and control.

The Cover Letter must be on official company letterhead and signed by the Authorized Person(s) and include a copy of the evidence of authority.

b. Table of Contents

Include a Table of Contents listing the various sections included in the proposal.

c. Executive Summary

The Executive Summary must include a brief statement of how the proposer shall meet the Scope of Work requirements as set forth in this RFP document. Proposers must also include information that demonstrates the team's strengths, the Proposer's capacity to carry out the type of assignments described in the proposed Scope of Work, the Proposer's experience and expertise, and a statement about why the Proposer's proposal would be the best selection. (3 pages maximum)

d. Understanding of the Assignment

The Understanding of the Assignment should explain the Proposer's understanding and interpretation of the key goals and objectives of this RFP, including compliance with the various regulatory requirements and their understanding of the organizational and logistical needs inherent in the Scope of Work. Components not in this RFP, but which the Proposer believes are essential to the effective performance and completion of the required services should also be addressed. (3 pages maximum)

e. Methodology and Approach

Proposers should read, review and understand this RFP, all the attachments and any addendum issued. The Proposer should submit a Proposal in accordance with the instructions given within this RFP.

f. Experience

1. Provide a brief summary of the Proposer's core business activity and the overall qualifications and experience of the Proposer Team to meet the

objectives of this RFP. Provide at least three examples of Proposer's successful experience over the last five years with:

- Installation, maintenance and repair of escalators, elevators and moving walkways the Proposer is currently maintaining at an occupied, operating location of similar size, number of conveyances, and complexity (list the actual number of conveyances maintaining for each type of conveyance).

OR

- Installation, maintenance and repair of escalators, elevators and moving walkways at an occupied, operating airport of similar size, number of conveyances, and complexity as LAX (list the actual number of conveyances maintaining for each type of conveyance).

2. List any past relationships or experience with LAWA.
3. Utilizing Attachment 2, briefly describe three (3) "Representative Contracts" the Proposer considers most relevant to the information requested in this RFP. For each contract, include at a minimum the following:
 - Contract Name
 - Specific Role in Delivery (e.g. Prime, Sub, Owner Rep, etc.)
 - Brief Description
 - Location
 - Contract Duration and Completion Date
 - Total Contract Amount
 - Owner/Client Contact Name, Company, Title, Phone Number, and Email
 - Reference (Name, Company, Title, Phone Number, and Email) with direct knowledge of the Proposer's development and management experience and performance

Limit the submission to eleven (10) pages total - two (2) pages of 12-point type lettering for business description and three (3) pages of 12-point type lettering per Representative Contract narrative. LAWA, in its sole discretion, reserves the right to request additional references, to contact all references, and to request additional supporting information from the Proposer as LAWA deems necessary. Proposers must only submit verifiable references, with current email and phone numbers for each reference. If LAWA is unable to verify the submitted references, your proposal may be deemed non-responsive.

g. Management Plan

Provide proposed project organization with position descriptions, company organization chart, qualifications of personnel to be assigned to the project staff,

procedures for managing the project to include preparation of estimates, scheduling, field supervision, interface between Proposer's home office and LAWA, measures to ensure responsiveness to routine, urgent, and emergency projects, and internal and external communication. Limit to five (5) pages of 12-point type lettering.

h. Cost Proposal

Proposal costs shall be entered in the Cost Proposal Form as Attachment 3. In the Cost Proposal Form only fill out the cells that are shaded in blue. Proposers may add notes at the bottom of each section.

The cost shall include:

- Regular and Holiday labor cost to staff the program for the following classifications: one (1) site manager, supervisors for each shift (AM, MID, and PM) and technicians for each shift (AM, MID, and PM).
- Parts and material costs will at a Cost-Plus basis. Enter your estimated annual parts & materials budget and corresponding mark-up percentage rate (if any).
- And specify any other costs required for the services under this RFP including parts inventory requirements.

ANNUAL PRICE ADJUSTMENT:

Enter estimated Annual Price adjustments (if any) on the Cost Proposal Form. Annual Price adjustments may be requested after the first year and must be documented in writing on company letterhead, by providing evidence of the corresponding increase(s) in contractor's cost(s) in the form of a copy of supplier invoice(s), commodity index(s) or charts, prevailing and/or living wage determinations, etc. and approved by the Procurement Services Division. Contractor must refer to the contract number when submitting its written request for a price increase to Procurement Services Division, at 7301 World Way West, 4th floor, Los Angeles, CA 90045.

Price increases are not guaranteed, and no price increase will be granted without prior approval of the Procurement Services Division. Price reduction may be issued at any time.

i. Inclusivity Requirements and Inclusivity Proposal Evaluation

Los Angeles is one of the most diverse cities in the world. LAWA seeks Proposers committed to the values of diversity, equity, inclusion, and opportunity for local workers and qualified small, local, disabled veteran-owned, and other under-utilized businesses. LAWA is committed to creating, and values, an

environment that provides all individuals and businesses open access to LAWA opportunities. Consistent with LAWA's commitment to diversity, equity, inclusion, and opportunity, the contract to be awarded pursuant to this RFP is subject to mandatory local hire and subcontractor utilization inclusivity commitments ("Inclusivity Commitments"), which are a part of LAWA's Business Enterprise Programs ("BE Programs"). LAWA's BE Programs include firms certified in categories designated as Small Business Enterprise (SBE), Local Business Enterprise (LBE), Local Small Business Enterprise (LSBE), and/or Disabled Veteran Business Enterprise (DVBE) (hereafter "Certified Firms.")

For more information regarding LAWA's BE Programs, visit LAWA's website at [LAWA Official Site | Business Inclusivity Programs](#).

In preparation to respond to this Proposal, LAWA encourages all Proposers to engage in meaningful efforts to pursue subcontracting, mentoring, joint venturing, teaming, and/or other partnering opportunities with Certified Firms in all aspects of the work specified in the Proposal.

The Successful Proposer's Inclusivity Commitments, including its BE Program and Certified Firm commitments, will become a part of the final Agreement between LAWA and the Successful Proposer, along with any additional terms and conditions specified and required by LAWA. Such Agreement shall include a robust program by which LAWA will monitor the Successful Proposer's compliance with the Inclusivity Commitments set forth in its Agreement, along with any other requirements specified by LAWA.

1. Inclusivity Commitments

The Successful Proposer's Inclusivity Commitments, including any Commitments the Proposer makes to exceed the BE Program utilization requirements, along with the strategies and benchmarks to meet those commitments, as set forth in the Proposal, shall become enumerated contract requirements and shall be referred to as the "Successful Proposer's Inclusivity Commitments."

In addition, the Contract will contain comprehensive monitoring and enforcement provisions, including monetary consequences for failing to meet BE Program participation and, where applicable, local hire/workforce development requirements, to ensure compliance with the Proposal Inclusivity Plan, including all Inclusivity Commitments.

Except as otherwise approved by LAWA, the Successful Proposer shall retain, employ, and utilize the firms and organizations, including all Certified Firms and entities, identified in the Proposal to fill the roles designated therein.

2. Required Inclusivity Proposal Submittals

Past Inclusivity Performance

For no fewer than three (3) of the projects that Proposer is submitting to establish qualifications in this competitive solicitation, please provide the following information:

- a. Project name
- b. Project owner
- c. Brief project description (no more than a brief paragraph)
- d. Name and contact information for project owner's representative who can confirm proposer's record of past performance
- e. Project value
- f. Any business inclusion requirements or goals to which the project was subject and the proposer's final performance on these requirements/goals
- g. Any local hiring and/or workforce development requirements or goals to which the project was subject, and the proposer's final performance on these requirements/goals

Project Inclusivity Plan

The Proposer shall set out its Inclusivity Plan, schedule, and approach, specifying strategies, key milestones, expected outcomes, and relevant metrics for monitoring performance. The plan shall include a narrative with supporting figures, tables, charts, etc. It shall also include a schedule for identifying, recruiting, retaining, contracting with, and administering applicable BE Program requirements with the following elements:

- a. Proposer's inclusivity staffing organization chart and reporting structure, including identification of staff who will be involved in the execution of the Inclusivity Commitments and their roles and responsibilities, and any individuals deemed as key personnel under the terms of the contract. Proposer shall identify an individual with executive/managerial authority who will represent Proposer as the inclusivity liaison for LAWA. This individual shall have programmatic responsibility for Proposer's inclusivity efforts.
- b. Proposer's diversity and inclusivity policy and/or statement, including a description of how the policy and/or statement will be used to guide and reinforce Proposer's achievement of its Inclusivity Commitments.
- c. Proposer's Subcontracting Plan - Proposer shall provide a subcontracting plan, including a narrative and schedule, consistent with its submitted subcontractor utilization plan and **benchmarking schedule [benchmarking schedule template provided]**, identifying Proposer's commitments and approach to:

-
- i. Recruit Certified Firms
 - ii. Contract with and retain Certified Firms
 - iii. Achieve the applicable BE Program mandatory minimum, and any excess, participation requirements, including if applicable, at the task order level
 - iv. Identify and maintain scopes of work for applicable BE Program participation requirements, including specification of any scopes Proposer intends to set aside for Certified Firm participation throughout the Project
 - v. Define how Proposer will manage, monitor, and evaluate applicable BE Program participation requirements for the duration of the Contract term
 - vi. Provide mentorship, technical assistance, business development, and/or build capacity for the Certified Firms on Proposer's team
 - vii. Identify barriers and challenges Proposer anticipates in achieving the BE Program participation requirements and define the actions and strategies Proposer will take to address and mitigate the impacts of any such barriers and challenges.

j. Claims History

List, and indicate the final ruling or outcome, all projects in last five (5) years that have resulted in a claim, litigation, City Engineer's decision, mediation or arbitration with the client or owner. List any conveyance maintenance contracts your firm failed to complete because of financial reasons, labor disputes, failure of your employees to perform, termination for cause, finding of "non-responsibility, "or any other reasons.

k. Safety

Provide safety record and program. Provide current Workmen's Compensation Modifier. Number of lost time incidents during last five years and the associated total number of lost days related to safety incidents. Number of OSHA citations received over the last five years and any repeat citations. Limit to two (2) pages of 12-point type lettering.

17. PREPARATION OF PROPOSAL PART 2 – ADMINISTRATIVE REQUIREMENTS

The Proposer shall complete all the Administrative Requirements forms enclosed herein as Attachment 1, as well as initial all interlineations, alterations or erasures in its submittals. The Proposer shall not delete, modify or supplement the printed matter on the Administrative Requirements forms, or make substitutions thereon. If the Proposer is a joint venture, each member of the joint venture must respond to all elements of the

Administrative Requirements and a copy of the joint venture agreement must be included in Administrative Requirements. That agreement must describe the scope and amount of work each participant will perform and contain a provision that each participant will be jointly and severally liable to LAWA for completing all of the work and to third parties for all duties, obligations and liabilities which arise out of the joint venture's performance of the work.

18. PREPARATION OF PROPOSAL PART 3 – FINANCIAL CAPABILITY

This section should provide LAWA with an understanding of the Proposer's financial capability to provide the services described in this RFP. LAWA reserves the right to request, at any time during the RFP process, any additional information it deems appropriate to assist in determining whether the Proposer has the requisite financial capacity.

On a separate file from the main proposal the Proposer must provide the following:

- a. Financial statements for the most recent TWO complete fiscal years audited and certified by a licensed public accountant, or if unaudited, then accompanied by a notarized statement from the Chief Financial Officer certifying the accuracy of the financial information contained in such statements.
- b. All financial information for each partner, LLC/LLP member, or joint-venture, respectively, if the Proposer intends to organize as a partnership, LLC, LLP or joint venture.
- c. Written statement from any person or entity to indicate the level of commitment together with the financial information detailed in this section as if the guarantor were the Proposer. LAWA reserves the right to require guarantors' financial information if the Proposer is an LLC or LLP.

19. SIGNING OF PROPOSAL

By signing the proposal, the Proposer is stating:

- a. The facts represented in the proposal are true and correct
- b. The Proposer provided accurate contact information including telephone number
- c. The signer has authority to sign on behalf of the contracting entity.

If the Proposer is a partnership or a joint venture, the Proposer must submit with its proposal a copy of the partnership or joint venture agreement. That agreement must describe the scope and amount of work each participant will perform and contain a provision that each participant will be jointly and severally liable to LAWA for completing all of the work and to third parties for all duties, obligations and liabilities which arise out of the joint venture's performance of the work. Each member of the Joint Venture or Partnership must respond to all elements of the Administrative Requirements separately (including Vendor Identification Forms, City Ethics Commission Forms etc.), and a copy of each joint venture or partnership agreement must be included with Part 2 - Administrative Requirements Forms. Once submitted, the composition of the proposer team cannot be altered without the written consent of LAWA.

20. ONLY ONE PROPOSAL ACCEPTED

LAWA will accept only one proposal for this RFP from any one Proposer. This includes proposals submitted under different names by one firm, corporation, partnership, or joint venture. Evidence of collusion among proposers shall be grounds for exclusion of any proposer who is a participant in any such collusion.

21. WITHDRAWAL OF PROPOSAL

A Proposer may not withdraw its proposal submittals for one hundred and twenty (120) days from the date proposals are due, or until after a contract for the work described in these proposal documents is fully executed by LAWA, whichever date is earlier. Requests must be in writing. After withdrawing a previously submitted proposal, the proposer may submit another proposal at any time up to the specified due date and time.

22. INFORMATION REQUESTED AND NOT FURNISHED

The information requested and the manner of submission is essential to permit prompt evaluation of all proposals. Accordingly, LAWA reserves the right to declare as nonresponsive and reject any proposals in which information was requested and was not furnished or when a direct or complete answer is not provided.

23. PROHIBITION OF ALTERNATE TERMS AND CONDITIONS

Proposers may not submit their own Contract terms and conditions in response to this RFP. If a proposal contains supplemental terms and conditions, LAWA, at its sole discretion, may determine the proposal to be a non-responsive counter offer, and the

proposal may be rejected. Optional offers submitted in addition to conforming proposals will not be reviewed.

24. EVALUATION OF PROPOSALS

The proposals will be evaluated, scored, and ranked in accordance with the procedures set forth within the RFP. LAWA reserves the right to conduct interviews or, in the alternative to proceed without conducting interviews. LAWA reserves the right to interview only a "short list" of specified Proposers. The purpose of interviews, if conducted, would be to allow Proposers the opportunity to clarify and expand upon aspects of their submittal. They also present an opportunity to evaluate key personnel and discuss issues of experience, performance, schedules, financial proposal, quality and the like. The same questions may be asked of all Proposers. In addition, the Evaluation Panel may have individual questions for Proposers based on the review of the written proposals, as well as follow-up questions. Proposer(s) (either all or a further short-list) may be subsequently re-interviewed for final evaluation.

Refer to next page for table of categories and maximum potential points.

REMAINDER OF PAGE INTENTIONALLY LEFT BLANK

EVALUATION CRITERIA

PART 1 TECHNICAL/MANAGEMENT

MAXIMUM POINTS

A EXPERIENCE Demonstrated work experience in the last five (5) years performing Inspections, Maintenance, Repairs, FLSS LAFD Reg 4 testing and repairs or similar work OR at an occupied, operating airport. Provide three (3) relevant examples from Owner of Proposer's successful experience over the years for verification.	35
B RFP CONTRACTORS REPRESENTATIVE Proposed supervisory personnel: Provide qualifications and experience of Contractor's Representative on Elevator, Escalator, and Moving Walkway Maintenance and Repair	20
C MANAGEMENT PLAN Proposed project organization with: Position descriptions, Staff personnel qualifications, Procedures for managing the project including: Preparation of estimates, Scheduling, Field Supervision, Interface between Proposer's home office and LAWA, Measures to ensure responsiveness to routine, urgent, and emergency repairs, and Internal and external communication.	20
D INCLUSIVITY PLAN Provide procedures for identifying, managing, and assisting subcontractors. Provide Selection Plan to ensure that work will be awarded to subcontractors fairly.	10
E HISTORY List all contracts in the last five (5) years that have gone to claim, litigation, City Engineer's decision, mediation, or arbitration with the owner and any projects firm failed to complete.	5
F COST REASONABLENESS The reasonableness and appropriateness of the proposed costs in relation to all other proposals.	5
G SAFETY Provide safety record and program. Provide current Workmen's Compensation Modifier Provide number of lost time incidents during last three (3) to five (5) years and the associated number of lost days related to safety incidents.	5

MAXIMUM POINTS FOR PART 1 100

PART 2 ADMINISTRATIVE REQUIREMENTS

NO POINTS ASSESSED FOR PART 2	Pass/ No Pass
--------------------------------------	--------------------------

25. AWARD OF CONTRACT

Proposer selected for the award of the Contract will be the responsive, responsible Conveyance Maintenance Proposer that is most advantageous to LAWA and presents the overall best value. LAWA is not bound to accept the lowest offered price if the offer does not represent the overall best value as determined by LAWA. Submission of a

proposal indicates Proposer's acceptance of the evaluation technique and recognition that some subjective judgments must be made by LAWA during the assigning of points. The criteria for evaluation of proposals, and selection of the successful Proposer for this award, will be based on the evaluation criteria listed in this RFP.

After opening, evaluating, and ranking, an award may be made on the basis of the proposal initially submitted, without discussion, clarification, or modification, or LAWA may discuss with the selected Proposer offers for cost reduction and other elements of the selected Proposer's proposal. There will be a thirty (30) day limit on the period for negotiating, completing and executing a Contract. If LAWA determines that it is unable to reach a contract satisfactory to LAWA with the selected Proposer, then LAWA will terminate discussions with the selected Proposer and reserves the right to extend the time period to proceed to the next Proposer in order of selection ranking until a contract is reached or LAWA has rejected all proposals.

LAWA may not disclose any information derived from the proposals submitted by competing Proposers in conducting the discussions. LAWA will send to Selected Proposer a Notice of Intent to Award.

Prior to commencing the work, the contractor (and all subcontractors) must have insurance approved by LAWA Risk Management.

Contractor(s) awarded contracts under this RFP will not be prevented from participating in or receiving an award under any future RFP's issued by LAWA.

26. EXECUTION OF CONTRACT

A sample contract has been provided as Attachment 7; however, the final terms may materially differ from those set forth in the sample. Please note that the contract incorporates several other documents by reference, including, but not limited to Administrative Requirements, General Conditions, Special Conditions, and Project Requirements. Successful Proposer will be responsible for compliance through the term of the Contract. Certain terms that will be included in the Contract are not subject to negotiation (the "Required Contractual Terms"). LAWA will not enter into a contract with a Proposer who refuses to agree to the following contractual terms.

a. Assignment or Transfer Prohibited

Contractor shall not, in any manner, directly or indirectly, by operation of law or otherwise, hypothecate, assign, transfer, or encumber this Contract, or any portion thereof or any interest therein, in whole or in part, without the prior,

written consent of the Chief Executive Officer of LAWA or his or her designee ("CEO").

For purposes of this Contract, the terms "transfer" and "assign" shall include, but not be limited to, the following: (i) if Contractor is a joint venture, a limited liability company, or a partnership, the transfer of fifty percent (50%) or more of the interest or membership in the joint venture, the limited liability company, or the partnership; (ii) if Contractor is a corporation, any cumulative or aggregate sale, transfer, assignment, or hypothecation of fifty percent (50%) or more of the voting shares of Contractor; (iii) the dissolution by any means of Contractor; and, (iv) a change in business or corporate structure. Any such transfer, assignment, mortgaging, pledging, or encumbering of Contractor without the written consent of the CEO is a violation of this Contract and shall be voidable at LAWA's option and shall confer no right, title, or interest in or to this Contract upon the assignee, mortgagee, pledgee, encumbrancer, or other lien holder, successor, or purchaser.

b. City Held Harmless, including Survival of Indemnities

To the fullest extent permitted by law, Contractor shall defend, indemnify and hold harmless City and any and all of City's boards, officers, agents, employees, assigns and successors in interest from and against any and all suits, claims, causes of action, liability, losses, damages, demands or expenses (including, but not limited to, attorney's fees and costs of litigation), claimed by anyone (including Contractor and/or Contractor's agents or employees) by reason of injury to, or death of, any person(s) (including Contractor and/or Contractor's agents or employees), or for damage to, or destruction of, any property (including property of Contractor and/or Contractor's agents or employees) or for any and all other losses, founded upon or alleged to arise out of, pertain to, or relate to the Contractor's and/or sub-contractor's performance of the Contract, whether or not contributed to by any act or omission of City, or of any of City's boards, officers, agents or employees. Provided, however, that where such suits, claims, causes of action, liability, losses, damages, demands or expenses arise from or relate to Contractor's performance of a "Construction Contract" as defined by California Civil Code section 2783.

This shall not be construed to require Contractor to indemnify or hold City harmless to the extent such suits, causes of action, claims, losses, demands and expenses are caused by the City's sole negligence, willful misconduct or active negligence; provided further that where such suits, claims, causes of action, liability, losses, damages, demands or expenses arise from Contractor's design professional services as defined by California Civil Code section 2782.8. Contractor's indemnity obligations shall be limited to allegations, suits, claims,

causes of action, liability, losses, damages, demands or expenses arising out of, pertaining to, or relating to the Contractor's negligence, recklessness or willful misconduct in the performance of the Contract.

In addition, Contractor agrees to protect, defend, indemnify, keep and hold harmless City, including its boards, departments and City's officers, agents, servants and employees, from and against any and all claims, damages, liabilities, losses and expenses arising out of any threatened, alleged or actual claim that the end product provided to LAWA by Contractor violates any patent, copyright, trade secret, proprietary right, intellectual property right, moral right, privacy, or similar right, or any other rights of any third party anywhere in the world. Contractor agrees to, and shall, pay all damages, settlements, expenses and costs, including costs of investigation, court costs and attorney's fees, and all other costs and damages sustained or incurred by City arising out of, or relating to, the matters set forth above in this paragraph of the City's "Hold Harmless" agreement.

In Contractor's defense of the City under this City Held Harmless Section, negotiation, compromise, and settlement of any action, the City shall retain discretion in and control of the litigation, negotiation, compromise, settlement, and appeals there from, as required by the Los Angeles City Charter, particularly Article II, Sections 271, 272 and 273 thereof.

The provisions of this City Held Harmless Section shall survive the termination of the Contract.

c. Labor and Prevailing Wages

Contractor, its agents, and employees shall be bound by and comply with applicable provisions of the California Labor Code and Federal, State, and local laws related to labor. Contractor shall strictly adhere to the provisions of the California Labor Code. Contractor shall forfeit to the City the penalties prescribed in the California Labor Code for violations. In accordance with the California Labor Code, the City has on file and will publish a schedule of prevailing wage rates for the types of work to be done under the Contract. Contractor shall not pay less than these rates. Each worker shall be paid subsistence and travel as required by the collective bargaining agreements on file with the State of California Department of Industrial Relations. Contractor's attention is directed to Section 1776 of the California Labor Code which imposes responsibility upon the Contractor for the maintenance, certification, and availability for inspection of such records for all persons employed by Contractor or subcontractor in connection with the project. Contractor shall agree through

the Contract to comply with this Section 1776 and the remaining provisions of the California Labor Code.

d. Bidder Contribution

Contractor, other underwriting firm members of the underwriting syndicate, Subcontractors, and their Principals are obligated to fully comply with City of Los Angeles Charter Sections 470(c)(12), 609(e) and related ordinances, regarding limitations on campaign contributions and fundraising to certain elected City officials or candidates for elected City office. Gifts to elected officials and certain City officials are also limited. Additionally, Contractor and other underwriting firm members of the underwriting syndicate are required to provide and update certain information to the City as specified by law. Any Contractor and other underwriting firm members of the underwriting syndicate subject to Charter Section 470(c)(12) and 609(e), shall include the following notice in any contract with a subcontractor expected to receive at least \$100,000 for performance under this contract.

e. Notice Regarding City of Los Angeles Campaign Contribution and Fundraising Restrictions

As provided in Charter Sections 470(c)(12), 609(e) and related ordinances, you are subcontractor or underwriting firm on City of Los Angeles Contract, Resolution # _____. Pursuant to City Charter Section 470(c)(12) and 609(e), underwriting firm, subcontractor and principals are prohibited from making campaign contributions and fundraising for certain elected City officials or candidates for elected City office for 12 months after the City contract is signed. Additionally, gifts are limited to elected officials and certain City officials. Subcontractor is required to provide to contractor names and addresses of the subcontractor's principals and contact information and shall update that information if it changes during the 12-month time period. Subcontractor's information included must be provided to contractor within 10 business days. Failure to comply may result in termination of contract or any other available legal remedies including fines. Information about the restrictions may be found at the City Ethics Commission's website at <http://ethics.lacity.org/> or by calling (213) 978-1960. Contractors, underwriting firms, Subcontractors, and their Principals shall comply with these requirements and limitations. Violation of this provision shall entitle the City to terminate this Agreement and pursue any and all legal remedies that may be available.

f. Compliance with Small Business Enterprise (SBE) Program and Local Small Business Enterprise (LSBE) Program.

Contracts made and entered into by the City of Los Angeles are subject to Business Enterprise Utilization and Equal Employment Opportunity Rules adopted by the City of Los Angeles. For this RFP, the Small Business Enterprise (SBE) Program is mandatory and must be met during the entire term of the contract. This Contract is also subject to the Local Small Business Enterprise (LSBE) Program. Please see Attachment 1, Administrative Requirements for the program rules.

Inclusivity Commitments – Monitoring and Compliance

LAWA will conduct comprehensive monitoring for compliance with LAWAs BE Program requirements and the Successful Proposer's other Inclusivity Commitments.

Monthly & Regular Reporting

This will require that the Successful Proposer and all of its Contractors and Subcontractors complete regular and ongoing reporting on the LAWAs contractor payment monitoring and contract compliance system, and any other systems, designated by LAWAs. Other monitoring may include, but not be limited to, periodic performance assessments, periodic required Contractor/Subcontractor project status report submittals, and/or reviews of Contract/Subcontract documents.

The Successful Proposer shall submit, and cause its Contractors and Subcontractors to submit, on a monthly basis, together with the invoice for payment (or on its own if no invoice for that month exists) monthly reporting into a Contractor payment monitoring and Contract compliance system selected by LAWAs, listing all Contractors and Subcontractors utilized during the reporting period, the payment to each, and any other information required by the system.

Acceptance & Approval by LAWAs

All monthly and other reports submitted by the Successful Proposer must be submitted in the format and medium determined by LAWAs and shall be reviewed and accepted by LAWAs before the report is considered approved by LAWAs.

As a part of its review, LAWAs has the option, throughout the duration of the Agreement, to request that the Successful Proposer provide additional or clarifying information related to its monthly or other reports, and to request that the Successful Proposer develop and provide to LAWAs a corrective action and/or remediation Inclusivity plan to immediately cure any issues associated with the Successful Proposer's inclusivity performance, as determined by the Inclusivity

Plan, Inclusivity Commitments, and the benchmarking plan submitted by the Successful Proposer as a part of its Proposal response.

In the event the Successful Proposer determines that it cannot meet any of its inclusivity obligations, as specified by the Successful Proposer's own Proposal submittals, within 10 days of making this determination, the Successful Proposal must notify LAWA of such in writing and cannot make any deviations from its contractual commitments to LAWA without formal acceptance and approval of the request by LAWA in writing.

Upon receipt of any such request from the Successful Proposal, and subject to LAWA's review of Successful Proposer's documentation substantiating its request for deviation, LAWA shall have 30 days to inform the Successful Proposal in writing of LAWA's determination with respect to the Successful Proposal's request to deviate from and/or to change any of the Successful Proposal's agreed upon Inclusivity Commitments, including its Inclusivity Plan and benchmarking submittal.

Remediation & Enforcement Measures

Successful Proposer and its Contractors and Subcontractors shall cooperate with LAWA personnel in using the LAWA-designated Contractor payment monitoring and contract compliance system and in providing such information as shall be requested by LAWA in order to ensure compliance with the Agreement. LAWA may not process or pay Contractor's or Subcontractor's subsequent invoices if the monthly reporting into the LAWA-designated system is not timely submitted, or if the Successful Proposer fails to cooperate with LAWA by promptly providing any and all information related to BE Program participation and/or the Successful Proposer's Inclusivity Plan, and Inclusivity Commitments, requested by LAWA.

Failure by the Successful Proposer to achieve the participation levels in any category shall result in enforcement actions consistent with the rights and remedies retained by LAWA, in addition to any other requirements or remedies established in the City of Los Angeles and LAWA policies. Additionally, LAWA's enforcement against the Successful Proposer may include, but is not limited to, withholding milestone or progress payments, exercising the liquidated damages provisions of the Agreement, and/or withholding any retention payments due to the Successful Proposer.

Pursuant to a date and time frame specified by LAWA, the Successful Proposer will have the opportunity to remediate and engage in corrective action to resolve any issues based on its failure to achieve the required participation levels in any category. Such remediation may include, but not will be limited to, the

Successful Proposer providing LAWA with a detailed remediation plan, regular updates tied to the Inclusivity Plan, Inclusivity Commitments, and benchmarks the Successful Proposer submitted as a part of its Proposal.

g. Compliance with Applicable Laws

Contractor shall, at all times during the performance of its obligations under this Contract, comply with all applicable present and/or future local, Department of Airports, State and Federal laws, statutes, ordinances, rules, regulations, restrictions and/or orders, including the hazardous waste and hazardous materials regulations, and the Americans with Disabilities Act of 1990. Contractor shall be solely responsible for any and all damages caused, and/or penalties levied, as the result of Contractor's noncompliance with such enactments. Further, Contractor agrees to cooperate fully with City in its efforts to comply with the Americans with Disabilities Act of 1990 and any amendments thereto, or successor statutes.

Should Contractor fail to comply with this Section, then City shall have the right, but not the obligation, to perform, or have performed, whatever work is necessary to achieve equal access compliance. Contractor will then be required to reimburse City for the actual cost of achieving compliance, plus a fifteen percent (15%) administrative charge.

No exceptions to the sample language provided for these terms will be permitted. Proposers unwilling to agree to these terms should not submit proposals. Exceptions to the language will be grounds for rejection of the Proposal.

Certain terms that will be included in the Contract may be subject to negotiation. Upon successful completion of negotiations, a Recommendation to Award a Contract will be presented to the LAWA Board of Airport Commissioners ("Board"), for approval.

The Proposer recommended for award will be required to execute the Contract prior to the Board meeting at which the Board will consider the award. The Board will award the Contract subject to the review of the City Council, and in compliance with the California Environmental Quality Act.

27. ADDITIONAL TERMS AND DISCLOSURES

BY SUBMITTING A RESPONSE TO THE REQUEST FOR PROPOSALS, A REQUEST FOR QUALIFICATIONS OR OTHER COMPETITIVE SOLICITATIONS (HEREINAFTER

COLLECTIVELY REFERRED TO AS "SOLICITATION DOCUMENTS") ISSUED BY THE CITY OF LOS ANGELES (HEREINAFTER REFERRED TO AS "CITY") DEPARTMENT OF AIRPORTS (HEREINAFTER REFERRED TO AS "LAWA" OR "LOS ANGELES WORLD AIRPORTS") THE PROPOSER/RESPONDENT AGREES TO BE BOUND BY ALL OF THE TERMS, CONDITIONS, DISCLAIMERS, AND REQUIREMENTS SET FORTH IN THIS ATTACHMENT AND THIS SOLICITATION DOCUMENT.

CPRA: All documents submitted in connection with this Solicitation Document are subject to disclosure as required by the California Public Records Act (California Government Code Section 6250 et seq. hereinafter referred to as "CPRA") or the Ralph M. Brown Act (California Government Code Section 54950 et seq.). All submissions will become the property of LAWA.

EXPENSE, OWNERSHIP AND DISPOSITION: LAWA shall not be responsible in any manner for any costs associated with the preparation or submission of any documents or materials purchased, prepared or presented during any interviews or any additional documentation provided or requested by LAWA. All submitted documents, including all drawings, plans, photos, and narrative material, shall become the property of LAWA upon receipt by LAWA.

LAWA shall have the right to copy, reproduce, publicize, release or otherwise dispose of each submittal in any way that LAWA selects. LAWA shall be free to use as its own, without payment of any kind or liability therefore, any idea, scheme, technique, suggestion, layout, or plan received during this competitive process.

RIGHT OF REJECTION AND WAIVER OF INFORMALITY: LAWA and/or City reserves the right to reject any and all submittals and/or to waive any informality in the submittals when to do so would be to the advantage to LAWA and/or City. The receipt of any submittal shall not in any way obligate LAWA to enter into an agreement, concession agreement, lease, or any other type of contract of any kind with any Proposer/Respondent.

RIGHT TO RECEIVE ADDITIONAL INFORMATION AND VERIFICATION OF REFERENCES: LAWA reserves the right to request any additional information at any time to assist in its evaluation. LAWA reserves the right to verify all submitted information, including all references and to contact third parties for additional references and information as it deems advisable. If any information stated in the submittal is found to be misrepresented in any manner, this may be grounds for disqualification of the submittal.

PROPOSER/RESPONDENT QUESTIONS:

If any Proposer/Respondent finds lack of clarity, discrepancies or omissions of any type of kind in this Solicitation Document or there is doubt as to the true meaning of any part

of this Solicitation Document or if any Proposer/Respondent has any questions regarding any part of this Solicitation Document, written request for a clarification or interpretation should be clearly presented and transmitted by email to the address set forth on the cover page. The deadline for submittal of questions is set forth on the cover page. Responses to all written questions, corrections and clarifications to this Solicitation Document will be made in writing and made available to all prospective Proposer/Respondents as a Solicitation Document addendum. Only questions pertaining to this Solicitation Document will be answered. LAWA is not responsible for any explanation, clarification, interpretation or approval made or given in any manner except by addendum. All prospective Proposers/Respondents shall not rely upon any explanation, clarification, interpretation, or approval that is not contained in an addendum to the Solicitation Document. Any addenda so issued are to be considered part of this Solicitation Document. All prospective Proposers/Respondents that submit a response to this Solicitation Document are deemed to understand the contents of the Solicitation Document and any addendum thereto.

CONTACT WITH LAWA PERSONNEL:

Proposer/Respondent may only rely upon written information provided by LAWA. Proposer/Respondent shall not rely upon, and LAWA shall not be responsible for, any oral information or instructions provided in reference to this Solicitation Document. Proposer/Respondent must not attempt to contact members of the Evaluation Panel, LAWA staff or the Board to discuss or ask questions about the contents of this Solicitation Document, other than in writing as provided above. Improper contact with LAWA personnel may result in the disqualification of the Proposer/Respondent.

PROTEST PROCEDURES: The procedures and time limits set forth in this Attachment are the Proposer's/Respondent's sole and exclusive remedy in the event of a protest. Failure to comply with these procedures shall constitute a waiver of any right to further pursue the protest, including filing a government code claim or any legal proceeding.

These procedures are for the benefit of the City. The purpose of the following procedures is to provide a method for resolving, prior to award, protests regarding the award of contracts by City, by and through the Board. The procedures will enable the Board to ascertain all of the facts necessary to make an informed decision regarding the award of the contract.

A protest relative to a particular proposal, and all required copies, must be submitted in detail, in writing, signed by the protestor or by a representative of protestor, and received in the offices of the Los Angeles City Attorney's Office, Airport Division and the office of the Board, at the below addresses, before 5:00 p.m. of the fifth (5th) business day after issuance to the Proposers/Respondents of a notification of the intent to recommend by management of LAWA to the Board. The protest shall contain a full and complete

statement specifying, in detail, the factual grounds and legal basis of the protest. The protest shall refer to the specific portion of this Solicitation Document, any submittal or other document which forms the basis for the protest. The protest must include the name, address, and telephone number of the protestor and protestor's representative.

All protests must be addressed to the Office of the City Attorney, Airport Division, One World Way, Room 104, Los Angeles, California 90045 with a copy to the Secretary of the Board of Airport Commissioners at One World Way, Los Angeles, California 90045 and a copy to the Bureau or Division of the Department of Airports responsible for issuing this Solicitation Document.

The party filing the protest must, at the same time as delivery to the City Attorney's office and the secretary of the Board as set forth above, deliver a copy of the protest and any accompanying documentation to all other parties with a direct financial interest that may be adversely affected by the outcome of the protest. Such parties shall include all other Proposers/Respondents.

Respondent Protesting and potentially affected parties will be notified of the time and date that the protest will be discussed in a public session of the Board. Protesting parties will be given an opportunity to present their arguments at the public session.

If the Board determines that the protest was frivolous, the party originating the protest may be determined by the Board to be irresponsible and that party may be determined to be ineligible for future contract awards.

ADEQUACY OF INFORMATION: The information presented in this Solicitation Document is provided solely for the convenience of Proposer/Respondent and other interested parties. It is the responsibility of the Proposer/Respondent and other interested parties to assure themselves that the information contained in this package is accurate and complete. LAWA provides no assurances pertaining to the accuracy of the data in this Solicitation Document.

ADDITIONAL DISCLAIMERS AND RESERVATIONS:

Failure by LAWA to object to an error, omission, or deviation in the submittal package will in no way modify this Solicitation Document or excuse Proposer/Respondent from full compliance with the requirements of this Solicitation Document. Neither the Board nor LAWA shall be obligated to respond to any submittal nor shall they be legally bound in any manner whatsoever by the receipt of a submittal.

All information stated in the submittal should be factual, truthful and should not be fabricated, embellished, extended or misrepresented.

LAWA reserves the right to postpone the submittal due date, cancel this competitive process; issue an addenda to this Solicitation Document; issue a new Solicitation Document; or, pursue other options when it is in LAW A's best interests to do so. Each Proposer/Respondent must not have any pending, active or previous legal action or conflict of interest that would, in LAW A's sole judgment, prevent the Proposer/Respondent from fulfilling their obligations under the Agreement.



OTIS

Los Angeles World Airports

**PART 1 - TECHNICAL MANAGEMENT
PROPOSAL**

**ELEVATOR, ESCALATOR & MOVING
WALKWAY MAINTENANCE**



OTIS

The background of the left side of the page features a dark blue, textured image of a building facade with a grid-like pattern. A large, white, stylized 'Z' or 'N' shape is overlaid on this background, extending from the top left towards the center of the page.

Table of Contents

COVER LETTER

EXECUTIVE SUMMARY

UNDERSTANDING THE ASSIGNMENT

METHODOLOGY & APPROACH

EXPERIENCE

MANAGEMENT PLAN

COST PROPOSAL

INCLUSIVITY REQUIREMENTS &
INCLUSIVITY PROPOSAL EVALUATION

CLAIMS HISTORY

SAFETY



Cover Letter

OTIS

October 14, 2022

Mr. Gary Abel
Management Analyst
Los Angeles Worldwide Airport
1 World Way
Los Angeles, CA 90045

Re: RFP – Elevator, Escalator & Moving Walkway Full Maintenance for LAWA

Dear Mr. Abel:

We appreciate the opportunity to share the enclosed RFP package for maintenance services and our strategies to successfully partner with Los Angeles Worldwide Airports (LAWA). Otis has a proven track record with LAWA and wants to continue our partnership to keep all vertical transportation running on site. We understand the unique characteristics and demands of the equipment, as well as the expectations of LAWA and all passengers who ride. Otis has contributed to the equipment that has been installed throughout the airport and hopes to continue to make history with you.

We hope to demonstrate in this RFP response our manpower and resource infrastructure for all vertical equipment covered by this RFP, along with our technological strengths and innovation strategies, make Otis uniquely qualified to meet and exceed your expectations. We will continue to keep your vertical transportation operating safely and reliably in the future.

Throughout this RFP package, we have outlined all the requirements of Part 1 (Technical/ Management, Part 2 (Admin Requirements) and Part 3 (Financial Capability).

Otis feels strongly that we understand the scope of work included in the RFP documents. We look forward to discussing the details associated with our RFP submission. Thank you again for the opportunity to get to partner with LAWA in the future.

Proposer Name & Company: Ross Peare, Otis Elevator

Address: 2701 Media Center Drive, Suite 2 Los Angeles, CA 90065

Telephone: 312-852-6843 **Fax:** 323-342-4501

Email: ross.peare@otis.com

Federal ID Number: 13-5583389

CA State Contractor's License Number: C11-7031



Ross Peare
Regional Service Sales Manager, Los Angeles



Executive Summary

OTIS

Leading with Experience

EXECUTIVE SUMMARY



Our Vision

We give people freedom to connect and thrive in a taller, faster, smarter world.



Our Mission

A world-class, customer-centric, service-oriented company



Our Culture

We celebrate imagination.
We believe in us.
We are many voices.
We are better together.
We strive to be the best.

It is Otis' objective to provide safe, reliable and clean vertical transportation, as well as keep equipment in top operating condition for visitors and staff at Los Angeles World Airports (LAWA). We are committed to fulfilling this objective through a full time, comprehensive, preventative maintenance program and a dedicated resident team of mechanics & staff assigned to the airport. Safety, quality and ethics are key pillars at Otis and will help assure our commitment to LAWA.

Otis will provide the resident team of staff required during each shift, 24 hours a day, 7 days a week. The staff assigned to LAWA will have no other scheduled responsibilities, other than servicing LAWA. This is for all the sites and units listed in the RFP, as well as any future servicing equipment needs. The resident team of mechanics will allow Otis to respond to your daily requirements and preventative maintenance needs for the 450+ conveyances.

Our client base consists of many operations that run 24/7, we understand the complexities of an operation that runs 24 hours a day, 365 days a year, and that you expect the highest level of service. Throughout the greater Los Angeles area, we maintain over 4,600 conveyances. Locally the Otis Los Angeles office employs over **300+** field and office employees, who all reside in and around the Greater Los Angeles area.

Otis is ready to partner with LAWA for the elevator, escalator and moving walkway maintenance & repairs in the future. We have reviewed all the scope of work requirements, as well as regulatory compliance, city policies and we have a full understanding of the airport operations environment. Our strengths are highlighted on the next page, and our past experiences with LAWA will help us carry out the assignment and scope of work.

Leading with Experience

WHY OTIS?

Otis is the best selection to provide the future ongoing daily maintenance and services related to keeping your conveyances in peak operating performance. Otis meets all key goals, objectives and requirements of the RFP. **Our strengths include:**



Otis installing over
65%
equipment at LAWA



Commitment to
operational uptime for
all equipment



Engineering support
through REGIONAL &
NATIONAL FIELD
ENGINEERS on all Otis
and non-Otis
equipment



Resident mechanic
team with technical
aptitude and
troubleshooting abilities
on equipment



Extensive warehouse
of spare parts & ease
of gathering
materials. Can ship
most parts overnight,
7 days a week, plus
we have a vast
selection of local
office stock and non-
Otis related parts due
to strong third-party
relationships



Daily communication
with LAWA, provide
real-time updates,
virtual service portals
where data can be
accessed anywhere
by LAWA staff for
transparency



Partnership with Small
Business Enterprises
and meeting all
inclusivity plans



Proven track record
with LAWA through
installation and
service of equipment
over the years

Otis' expertise and experience spans over 168 years of serving partners like LAWA. We developed industry recognized best practices and have the industry's largest portfolio, maintaining more than 2.1 million customers worldwide.

The Otis Los Angeles Branch is a full-service office, logistics center and parts warehouse. We provide preventative maintenance service, repairs, modernizations, and new equipment for the Los Angeles area.

Choosing the Otis solution will provide LAWA with the comprehensive quality care, coverage and maintenance to ensure that your vertical transportation is operating safely and reliably, for the future.

Leading with Experience

WHY OTIS?

Otis is the best selection to keep your equipment running and to keep LAWA informed in the future. We have experience with all the Otis equipment on site, as well as the equipment installed by other manufacturers. Our knowledgeable team will be your trusted resource.

Otis leads the industry in safety and quality through continuous improvement and our investment in the vertical equipment technology we create. Our local presence, paired with our global infrastructure allows us to support your daily operations.



ORGANIZATION

Project Experience

Field Expertise

Engineering Support

Depth of Manpower



PERFORMANCE & QUALITY

Demonstrated Performance

Reliability

Otis Specific Tools & Methods

Parts Availability



PRODUCT INNOVATION

Passenger Experience

Efficient Dispatching

Customer Experience

Proven Security Integration



COMMITMENT

Executive Commitment

Valued Relationship Extended

Strategic Partner with LAWA



Understanding the Assignment

OTIS

Understanding the Assignment

KEY GOALS AND OBJECTIVES



Regulatory Requirement Compliance

Otis is fully aware of how to keep your equipment in compliance. Reg 4 Testing, annual testing, skirt index testing will all be completed as part of our scope.



Contract Kick Off - Initial Equipment Overview

Within 90 days of executed contract, Otis shall review each piece of equipment on site and shall prepare and submit a schedule of repairs, tests and other work which require a shutdown of one or more conveyances. This will be reviewed in weekly meetings with LAWA.



Ongoing Communication for Large Repairs

Otis to provide 48 Hours notice and will notify LAWA in advance for any work that requires a conveyance to be out of normal operation for more than 12 hours. That way LAWA can plan for the outage.



Daily Conveyance Out of Service Report

Otis to provide a daily update by email to LAWA of any conveyance out of service for greater than 24 hours. This report will identify the unit information, issue discovered and next steps for corrective action, as well as estimated returned to service date.



Daily Communication

Otis will communicate daily with LAWA staff. Checking in and out is important to us and we will make sure to notify the LAWA team members frequently. Otis will carry cell phone devices or two-way radios for communication.



Service Response Times

Otis shall respond to service calls within 15 minutes from notification time from the Airport staff or Airport Response Coordination Center (ARCC). Otis will communicate our arrival time to indicate that we are on site where the equipment is and that we will begin working on resolving any service interruption issues. Once the problem is resolved Otis will notify ARCC to indicate everything has been resolved.



Ongoing Reviews/Weekly Meetings

Otis to schedule weekly in person meetings with LAWA to establish clear communication and transparency. This will help support the ongoing daily management of all key pieces of vertical transportation



Deficiencies Noted By LAWA

Otis will work to promptly correct any deficiencies noted by LAWA within 30 calendar days

Project Approach & Plan

ATTENTION TO DETAIL

Our approach is to provide a full resident team to service the vertical transportation at LAWA. Our ability to provide unparalleled maintenance to your vertical transportation equipment is based on our expertise and technological strengths. Our expert technicians are equipped with the experience and tools to provide the dynamic service required for the various makes and types of units found throughout your portfolio.

Our maintenance planning program provides us the ability to custom tailor the maintenance procedures for each of your conveyances. This approach ensures each units get the specific preventative maintenance required.

Also, Otis' eService reporting tool will enable building management to stay updated on the procedures completed on each unit.

Additionally, our presence in the LA area enables Otis to draw upon a pool of trained technicians, available to support your dedicated team. All mechanics have experience with various types of units found in your portfolio. Furthermore, our local Los Angeles team has the support of a Regional Field Engineer. As well as Otis' national and global engineering support centers.

Otis Airport Maintenance Program

OTIS ADVANTAGE

- **SCHEDULE**
the proper tasks for each unit
- **MODIFY**
tasks or schedule to meet local requirements
- **COMMUNICATE**
schedule to mechanics, customers, regulatory authorities
- **PERFORM**
tasks as scheduled, document properly
- **MEASURE & MANAGE**
completion of schedule tasks & manage exceptions



Execution Plan

PLANNING FOR SUCCESS

PHASE I | Prior to Commencement

- Onboard and survey all units
- Order necessary spare parts
- Coordinate kick off with all key stakeholders
- Review and establish onsite processes

PHASE II | Day 1

- Field operations surveys
- Perform safety inspections on units
- Test all elevator phones
- Verify all prints and tools are available and onsite

PHASE III | Week 1

- Hold team meeting to ensure a smooth transition
- Familiarization of LAWA terminals with resident mechanics
- Within first 90 days, begin reviewing each piece of equipment for repairs, tests, etc.

PHASE IV | Month 1

- Ongoing team meetings
- Ongoing quality and safety checks
- Review performance and coordinate any necessary repairs





Methodology and Approach

OTIS



OTIS

Methodology and Approach

FULL UNDERSTANDING OF RFP DOCUMENTS

Otis fully understands the RFP requirements and how we can support LAWA in the future. As stated in the RFP response Otis can fully support LAWA and all equipment in the airport. Otis has read all attachments and addendums issued. Our proposal follows all instructions given within the RFP.



Experience

OTIS

Major Projects – Service Experience

OUR LOCAL REFERENCES



Getty Center & Getty Villas

BRUCE NEVEL

Director of Engineering & Maintenance

T (310) 440-6528

E bnevel@getty.edu

57 Total Units

55 Elevators & 2 Tram Systems



SoFi Stadium

JASON WRIGHT

Director of Engineering

T (310) 915-0672

E jason.wright@hollywoodparkca.com

78 Total Units

50 Escalators & 28 Elevators



MGM Properties

RANDY BECK

Procurement Director

T (702) 692-2394

E rbeck@mgmresorts.com

1,200 Total Units

250 escalators

Major Airports – Service Experience

OUR LOCAL REFERENCES



Detroit Airport

CHRIS HILL

Regional Manager

T (734) 431-2074

E Chris.Hill@delta.com

192 Total units

55 Elevators & 2 Tram Systems



Indianapolis International Airport

WYATT MCWHORTER

Director of Procurement

T (317) 487-5335

E wmcwhorter@ind.com

66 Total Units

34 Elevators, 32 Escalators & Moving walks



Anchorage Airport

LAWRENCE SWANSON

Procurement Director

T (702) 692-2394

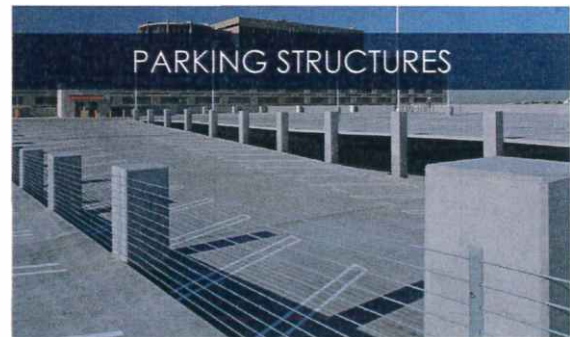
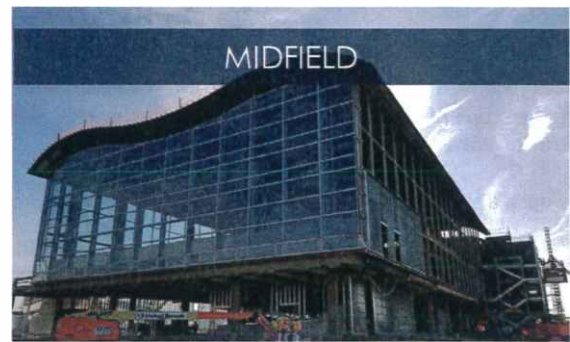
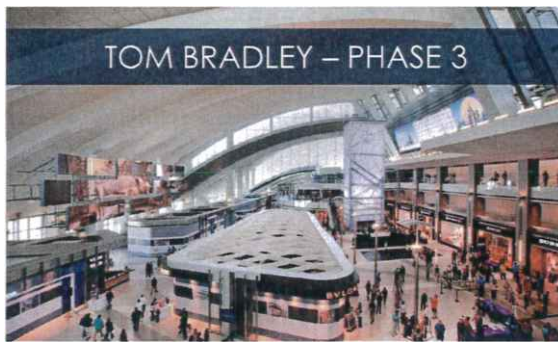
E Lawrence.swanson@alaska.gov

50 Total Units

LAWA Relationship

LONG TERM PARTNERS

Otis has been working with LAWA for many years. Our partnership has included elevator installations, modernizations, repairs and maintenance services for the conveyances on site. These LAWA buildings include:



We look forward to our partnership in the future. Choosing the Otis solution will provide LAWA with the comprehensive quality care, coverage and maintenance to ensure that your vertical transportation is operating safely and reliably, for the future.

Representative Contracts

ATTACHMENT 2 – PROPOSERS EXPERIENCE & REFERENCES



Request for Proposals for Elevator, Escalator and Moving Walkway, Full Maintenance, Repair, Modernization, Materials and Related Services.

Attachment 2 Proposer's Experience and References

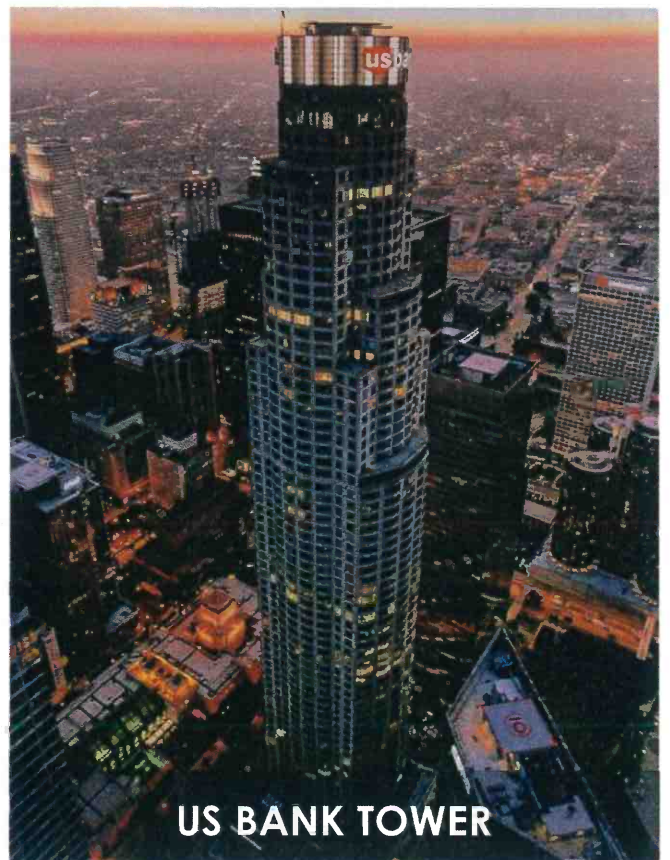
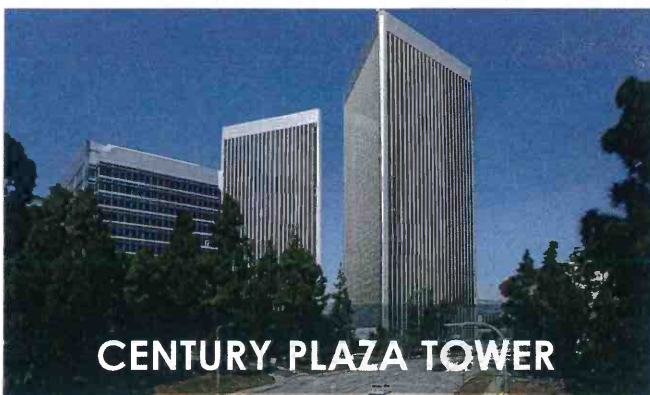
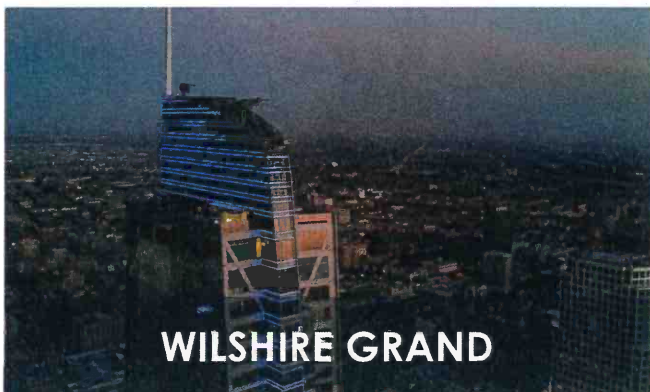
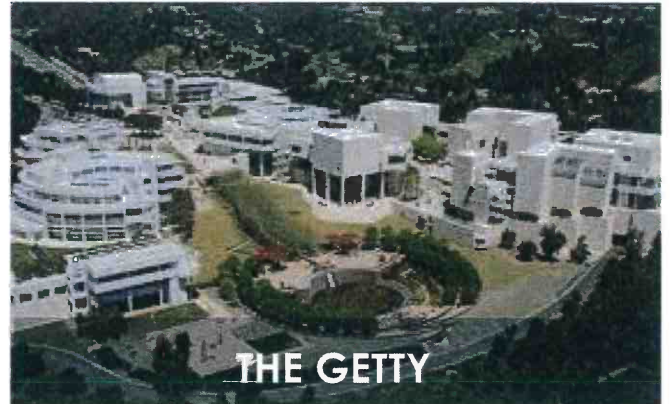
List up to five (3) non-City of Los Angeles, non-LAWA contracts that attest to the Proposer's experience and capability to successfully manage and perform the scope of work and services detailed in the RFP. **Proposer's experience with the City of Los Angeles and other City contracts should be listed in response to Attachment 1 Administrative Requirements, Section 1.*

Contract Value: If a subcontractor, indicate the total value of the project contract and the total value of the Proposer's portion of work on the contract.

	CompanyName, Business Type, Address	Contact Person Name, Title, Email	Project/Contract Start Date	Project/Contract Comp Date	Contract Name, Specific Role, & Description	Contract Value
1.	Getty Center & Getty Villas 1200 Getty Center Dr, LA	Bruce Nevel, Director of Engineering & Maintenance bnevel@getty.edu	1997	Currently maintaining all conveyances	The Getty Center, in Los Angeles, California, is a campus of the Getty Museum and other programs of the Getty Trust. Otis maintains the two trams and the 55 elevators on site at the Getty Center and Getty Villa.	N/A
2.	SoFi Stadium 1001 Stadium Dr, LA	Jason Wright, Director of Engineering jason.wright@hollywoodparkca.com	2019	Currently maintaining all conveyances	70,000-seat sports and entertainment indoor arena in the Los Angeles suburb of Inglewood, California. Otis maintains 78 units, 50 escalators and 28 elevators.	N/A
3.	MGM Properties 3799 S Las Vegas, LV	Randy Beck, Procurement Director rbeck@mgmresorts.com	2019	Currently maintaining all conveyances	24 hour casino properties with 1,200 conveyances. Bellagio, Aria, Vdara, Luxor, MGM Grand, NYNY, Mandalay Bay, Excalibur, Park MGM, MGM Signature	N/A
4.	Wilshire Grand 900 Wilshire Blvd, LA	Talin Biegler, General Manager TBiegler@wilshiregrandcenter.com	2017	Currently maintaining all conveyances	Otis maintains 52 elevators at Wilshire Grand, 1,100-foot skyscraper downtown Los Angeles, California, occupying the entire city block between Wilshire Boulevard and 7th, Figueroa, and Francisco streets. Completed in 2017, it is the tallest building west of Chicago.	N/A

Los Angeles Landmarks

OTIS MAINTAINED





Management Plan

OTIS

Los Angeles Leadership

EXECUTIVE COMMITMENT



JIM CRAMER
President,
Otis Americas



JULIE BRANDT
Vice President,
Western Region

REGIONAL SUPPORT



MARCUS BURTON
Regional General
Manager



KEVIN HANSON
Commercial
Leader
Maintenance



JASON BARNES
Field Operations
Leader
Maintenance

LOS ANGELES TEAM



ANDREA THOMAS
Territory
Manager



JIM STRACHAN
General Manager
Greater LA Area



ROSS PEARE
Regional Sales
Manager



MIKE MEIJER
Regional Engineer

ORGANIZATION HIGHLIGHTS



FIELD
EMPLOYEES
260



OFFICE
EMPLOYEES
44



SUPERINTENDENTS
12



UNITS ON
SERVICE LOCALLY
4500+

MAINTENANCE SUPERVISORS/FOREMEN

FULLTIME ONSITE SUPERVISION PER SHIFT



DANIEL SANCHEZ

17 years in the trade
13 years LAWA experience



AUGGIE ECHEVERRIA

18 years in elevator trade
3 years LAWA experience



MARSHALL BENNETT

8 years in the trade
5 years LAWA experience

ONSITE MANAGEMENT



PETER PARK

New Equipment / Mod
8 years with Otis
5 years overseeing major
projects at LAX



ANDREA THOMAS

Site Manager
7 years with Otis
1 year overseeing LAX
maintenance service

OTIS TECHNICAL EXPERTS

SPECIALIZING IN COMPASS DISPATCH AND EMS SYSTEMS



MICHAEL BERNHARDT

COMPASS DISPATCH &
EMAS SYSTEMS
Regional Field Engineer,
Advanced Technologies



MICHAEL MEIJER

OSC SUPPORT
Regional Field Engineer
24 years with Otis



MIKE JENNINGS

VIRGINIA CONTROLS
Virginia Controls Expert

Otis Airport Maintenance Program

Otis' Custom Airport maintenance plans and check charts are designed for LAWA specific equipment. This will help provide you with the most reliable performance. By reviewing the specific equipment on site and using data-driven insights and mechanic expertise, we can enable the mechanics to perform the right maintenance at the right time.

Maintenance intervals are based on equipment age, condition, wear, design qualities, usage, environment and or technology to effectively maintain equipment in compliance with State codes. Upon award, Otis will review every conveyance and set up maintenance procedures for the unit type. Otis utilizes our Otis Airport Maintenance with the existing preventative maintenance scheduling system.

Otis will also utilize the Maximo system to help keep track of work preventative maintenance work orders. We also have our eService reports that we can share that outline all maintenance and service calls on the equipment.

PARTS SUPPORT OTIS SERVICE CENTER

- Largest parts inventory in the industry
- Stocks over 37,000 components
- Over \$17 Million Dollars in inventory
- Purchasing relationships with all major manufacturers and after-market vendors
- Most Parts can be shipped overnight
- Board repair and replacement team on-site
- Spare lending system

Our Otis Service Center (OSC) located in Bloomfield, CT stocks over 37,000 components for a total of \$17 million dollars in inventory. The Otis Service Center is home to our own microprocessor board repair center and OSC provides extended hours to accommodate overnight material orders for every region of the United States. The Otis National Field Engineering staff located at OSC has several non-Otis specialists with hands-on knowledge and an average of 36 years of experience to support current and legacy equipment. Otis has purchasing relationships with all controller manufacturers for LAWA elevators including Kone, Thyssen Krupp, MCE and Schindler.

LAWA Weekly Service Meetings

Review of maintenance including work performed, progress on any deficiencies or other programs

Review of any reported issues

Review monthly list of callbacks and billable invoices for work outside the contract for review

[illegible]

Communication Plan

INFORMATION ON DEMAND

Daily Conveyance Out of Service Report

Otis to email a report out daily all for any conveyances left out of service for greater than 24 hours. This report will identify the unit information, issue discovered and next steps for corrective action, as well as estimated returned to service date.

Building	Elevator Out of Service	Major Repair	Adjuster Needed	Fault	Out of Service Date	Estimated Return to Service Date
Terminal	Elevator 5	Yes	No	Sheave bearings needs replaced	10/12	10/13

eService: Simplify Daily Tasks to Help Manage Your Entire Portfolio

OUR CUSTOMER INTERFACE, REDESIGNED WITH YOUR NEEDS IN MIND

eService is your customer portal, accessible anytime from your computer, tablet or mobile device. Use it to manage your entire elevator, escalator and moving walkway portfolio. It has been designed to simplify your daily tasks.



INFORMED

Get real-time notifications about and access to a complete history of activities of your equipment



ORGANIZED

Review contracts, manage proposals and neatly file invoices and other important service documents



CONVENIENT

Pay bills online and access other personalized data through one simple performance dashboard



MOBILE

Time-saving tools designed to keep you up to date on the status of your equipment wherever you are



Spare Parts Inventory & Maintenance Tasks

Parts to be held at LAWA

EXAMPLE MATERIAL ONSITE

GAL DOOR OPERATORS
 DOOR OPERATOR BOARDS
 I/O BOARDS - VIRGINIA CONTROLS
 MULTIPLE DRIVES FOR ESCALATORS
 MODULES VIRGINIA CONTROLS
 GIBS (OTIS & VC)
 PEDISTAL STATION
 SAFETY SWITCHES (ESC)
 PANEL VIEW (VC)
 RELAY 24V
 RELAY 120 V
 TRANSFORMERS
 POWERSUPPLIES
 LOAD WEIGHING DEVICES
 JANSS EDGES
 PANACHROME DETECTOR EDGES
 ELEVATOR FANS
 COMB IMPACT TOOL
 CLUTCHES (ELEV)
 MOTOR DOOR OPERATOR
 EQ DEVICE (DRAKA & ANOTHER)
 COMB TEETH
 STEP GUIDE
 OIL FOR ESC
 PLC Power Supply
 PLC Output Module
 PLC Input Module
 PLC High Speed Counter Module
 BELT CLEANER
 DEMARCATION LIGHTS
 STEP SWITCHES

small example of parts to be held on site

Maintenance Tasks and Control Programs

[illegible]

An aerial night photograph of the Los Angeles International Airport (LAX) terminal and runways, illuminated by city lights. A large, white, stylized arrow points from the left towards the right side of the image, partially overlapping the airport scene and the OTIS logo.

Cost Proposal

OTIS

Attachment 3 Third Revised Cost Proposal Form

LOS ANGELES WORLD AIRPORTS: COST PROPOSAL FOR:

Elevator, Escalator and Moving Walkway Full Maintenance, Repair, Modernization, Materials and Related Services at Los Angeles International Airport (LAX) and Van Nuys Airport (VNY)

Proposer's Name	OTIS Elevator
------------------------	---------------

Labor Costs

The following are the fully burdened hourly rates including employee benefits, overhead, and profit for the various positions and the calculated annual labor budget. (Please fill out only the cells shaded in blue)

Daily Non-Holiday Physical Staffing Requirement	Position Titles	Contract Term				
		Year 1		Year 2	Year 3	
Dedicated Contract Site Manager (One salaried position working M-F)		Hourly Rate	Daily Total	Annual Salary	Annual Salary	Annual Salary
1	Site Manager (1 FTE / M-F / Yearly Salary)		N/A	\$ 90,000.00	\$ 92,700.00	\$ 95,481.00
Required Staffing Monday through Friday 5 - Days/week (Except on City of Los Angeles Recognized Holidays)		M-F Hourly Rate	Daily M-F Total	Annual Total for M-F Staffing Excluding Holidays (248 days)	Annual Total for M-F Staffing Excluding Holidays (248 days)	Annual Total for M-F Staffing Excluding Holidays (248 days)
1	Supervisor AM	\$ 206.34	\$ 1,650.72	\$ 409,378.56	\$ 423,706.81	\$ 438,536.55
1	Supervisor MID	\$ 245.03	\$ 1,960.24	\$ 486,139.52	\$ 503,154.40	\$ 520,764.81
1	Supervisor PM	\$ 275.98	\$ 2,207.84	\$ 547,544.32	\$ 566,708.37	\$ 586,543.16
3	Technicians AM	\$ 183.41	\$ 4,401.84	\$ 1,091,656.32	\$ 1,129,864.29	\$ 1,169,409.54
3	Technicians MID	\$ 217.80	\$ 5,227.20	\$ 1,296,345.60	\$ 1,341,717.70	\$ 1,388,677.82
9	Technicians PM	\$ 245.31	\$ 17,662.32	\$ 4,380,255.36	\$ 4,533,564.30	\$ 4,692,239.05
19	Regular Staffing Total		\$33,110.16	\$ 8,211,319.68	\$ 8,498,715.87	\$ 8,796,170.92
Required Staffing Every Saturday		Saturday Hourly Rate	Saturday Total	Annual Total for Saturday Staffing (52 days)	Annual Total for Saturday Staffing (52 days)	Annual Total for Saturday Staffing (52 days)
1	Supervisor AM	\$ 257.92	\$ 2,063.36	\$ 107,294.72	\$ 111,050.04	\$ 114,936.79
1	Supervisor MID	\$ 257.92	\$ 2,063.36	\$ 107,294.72	\$ 111,050.04	\$ 114,936.79
1	Supervisor PM	\$ 257.92	\$ 2,063.36	\$ 107,294.72	\$ 111,050.04	\$ 114,936.79
3	Technicians AM	\$ 229.26	\$ 5,502.24	\$ 286,116.48	\$ 296,130.56	\$ 306,495.13
3	Technicians MID	\$ 229.26	\$ 5,502.24	\$ 286,116.48	\$ 296,130.56	\$ 306,495.13
3	Technicians PM	\$ 229.26	\$ 5,502.24	\$ 286,116.48	\$ 296,130.56	\$ 306,495.13
12	Regular Staffing Total		\$22,696.80	\$ 1,180,233.60	\$ 1,221,541.78	\$ 1,264,295.74
Required Staffing Every Sunday		Sunday Hourly Rate	Sunday Total	Annual Total for Sunday Staffing (52 days)	Annual Total for Sunday Staffing (52 days)	Annual Total for Sunday Staffing (52 days)
1	Supervisor AM	\$ 309.51	\$ 2,476.08	\$ 128,756.16	\$ 133,262.63	\$ 137,926.82
1	Supervisor MID	\$ 309.51	\$ 2,476.08	\$ 128,756.16	\$ 133,262.63	\$ 137,926.82
1	Supervisor PM	\$ 309.51	\$ 2,476.08	\$ 128,756.16	\$ 133,262.63	\$ 137,926.82
3	Technicians AM	\$ 257.92	\$ 6,190.08	\$ 321,884.16	\$ 333,150.11	\$ 344,810.36
3	Technicians MID	\$ 257.92	\$ 6,190.08	\$ 321,884.16	\$ 333,150.11	\$ 344,810.36
3	Technicians PM	\$ 257.92	\$ 6,190.08	\$ 321,884.16	\$ 333,150.11	\$ 344,810.36
12	Regular Staffing Total		\$25,998.48	\$ 1,351,920.96	\$ 1,399,238.19	\$ 1,448,211.53
Holiday Physical Staffing Requirement	Position Titles	Contract Term				
		Year 1		Year 2	Year 3	
Staffing requirement and hourly rates for Holidays recognized by the City of Los Angeles and Elevator Mechanic Union Agreements (8 Total: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day)		Hourly Rate	One Holiday Total	Annual Holiday Staffing (8 Holidays)	Annual Holiday Staffing Total	Annual Holiday Staffing Total
1	Supervisor AM	\$ 309.51	\$ 2,476.08	\$ 19,808.64	\$ 20,501.94	\$ 21,219.51
1	Supervisor MID	\$ 309.51	\$ 2,476.08	\$ 19,808.64	\$ 20,501.94	\$ 21,219.51
1	Supervisor PM	\$ 309.51	\$ 2,476.08	\$ 19,808.64	\$ 20,501.94	\$ 21,219.51
3	Technicians AM	\$ 257.92	\$ 6,190.08	\$ 49,520.64	\$ 51,253.86	\$ 53,047.75
3	Technicians MID	\$ 257.92	\$ 6,190.08	\$ 49,520.64	\$ 51,253.86	\$ 53,047.75
3	Technicians PM	\$ 257.92	\$ 6,190.08	\$ 49,520.64	\$ 51,253.86	\$ 53,047.75
12	Holiday Staffing Total		\$25,998.48	\$ 207,987.84	\$ 215,267.41	\$ 222,801.77

Attachment 3 Third Revised Cost Proposal Form

LOS ANGELES WORLD AIRPORTS: COST PROPOSAL FOR:

Elevator, Escalator and Moving Walkway Full Maintenance, Repair, Modernization, Materials and Related Services at Los Angeles International Airport (LAX) and Van Nuys Airport (VNY)

Staffing requirement and hourly rates for Holidays ONLY recognized by the City of Los Angeles (5 Total: Martin Luther King, Jr. Day, President's Day, Caesar Chavez Day, Juneteenth, Indigenous Peoples' Day)		Hourly Rate	One Holiday Total	Annual Holiday Staffing (5 Holidays)	Annual Holiday Staffing Total	Annual Holiday Staffing Total
1	Supervisor AM	\$ 206.34	\$ 1,650.72	\$ 8,253.60	\$ 8,542.48	\$ 8,841.46
1	Supervisor MID	\$ 245.03	\$ 1,960.24	\$ 9,801.20	\$ 10,144.24	\$ 10,499.29
1	Supervisor PM	\$ 275.98	\$ 2,207.84	\$ 11,039.20	\$ 11,425.57	\$ 11,825.47
3	Technicians AM	\$ 183.41	\$ 4,401.84	\$ 22,009.20	\$ 22,779.52	\$ 23,576.81
3	Technicians MID	\$ 217.80	\$ 5,227.20	\$ 26,136.00	\$ 27,050.76	\$ 27,997.54
3	Technicians PM	\$ 245.31	\$ 5,887.44	\$ 29,437.20	\$ 30,467.50	\$ 31,533.86
12	Holiday Staffing Total		\$ 21,335.28	\$ 106,676.40	\$ 110,410.07	\$ 114,274.43
Total Annual Labor Budget/Proposers Plan:				\$ 11,148,138.48	\$ 11,537,873.33	\$ 11,941,235.39
Annual price adjustment from Base Year (if any):		Base Year			3.5%	3.5%

Notes:

(1) - Otis is using experienced foreman/supervisors on each shift

(2) - If helpers are allowed to be part of the crews doing maintenance, an additional discount can be added to hourly rate

Parts & Materials - Cost Plus

The following is the mark-up that will be applied to all parts purchased on behalf of LAWA. Parts purchase invoices and back up information will be required in monthly invoicing. (Please fill out only the cells shaded in blue)

Parts & Materials	Contract Term				
	Year 1		Year 2	Year 3	
	Estimated Annual Parts Usage	Mark Up %	Year 1 Parts Total	Year 2 Parts Total	Year 3 Parts Total
Total Estimated Annual Parts Budget/Proposers Plan:	\$999,853	15.00%	\$ 1,149,830.49	\$ 1,207,322.01	\$ 1,267,688.12
Annual price adjustment from Base Year (if any):	Base Year			5.0%	5.0%

Notes:

(1) -Otis is using a separate SBE company to clean the step treads. Contract mechanic labor will be used to maintain the elev/esc equipment

(2) - Pricing for step cleaning is included in the parts estimate

Regulation 4 Certified Inspector Fee

A Regulation 4 Certified Inspector will be required during the yearly Reg 4 inspection process for all elevators whether assigned to Contractor or LAWA Elevator team. Reg 4 Certified Inspector fees to be invoiced after service is completed. (Please fill out only the cells shaded in blue)

Regulation 4 Certified Inspector Fee and Other Conveyance fees (if any)	Contract Term				
	Year 1		Year 2	Year 3	
	Number of Current Elevators	Fee per Conveyance	Year 1 Reg 4 Fee Total	Year 2 Reg 4 Fee Total	Year 3 Reg 4 Fee Total
Reg 4 Certified Inspector Fee:	244	\$500.00	\$ 122,244.00	\$ 127,133.76	\$ 132,219.11
Other Conv Fee (if any):			\$ -	\$ -	\$ -
Other Conv Fee (if any):			\$ -	\$ -	\$ -
Annual price adjustment from Base Year (if any):	Base Year			4.0%	4.0%

Notes:

(1) - This contractor is one of the SBE companies Otis is contracting with on this bid

(2) -

Other Costs (if any)

The following are the proposed addition costs associated with mobilization and startup. (Please fill out only the cells shaded in blue)

Other Costs	Base Term		
	Year 1	Year 2	Year 3
Mobilization/Start -Up (if any):	\$ 135,438.72	\$ -	\$ -
Other (if any):			
Other (if any):		\$ -	\$ -
Other (if any):		\$ -	\$ -
Other (if any):		\$ -	\$ -
Total Other Costs:	\$ 135,438.72	\$ -	\$ -

Attachment 3
Third Revised Cost Proposal Form

LOS ANGELES WORLD AIRPORTS: COST PROPOSAL FOR:

Elevator, Escalator and Moving Walkway Full Maintenance, Repair, Modernization, Materials and Related Services at Los Angeles International Airport (LAX) and Van Nuys Airport (VNY)

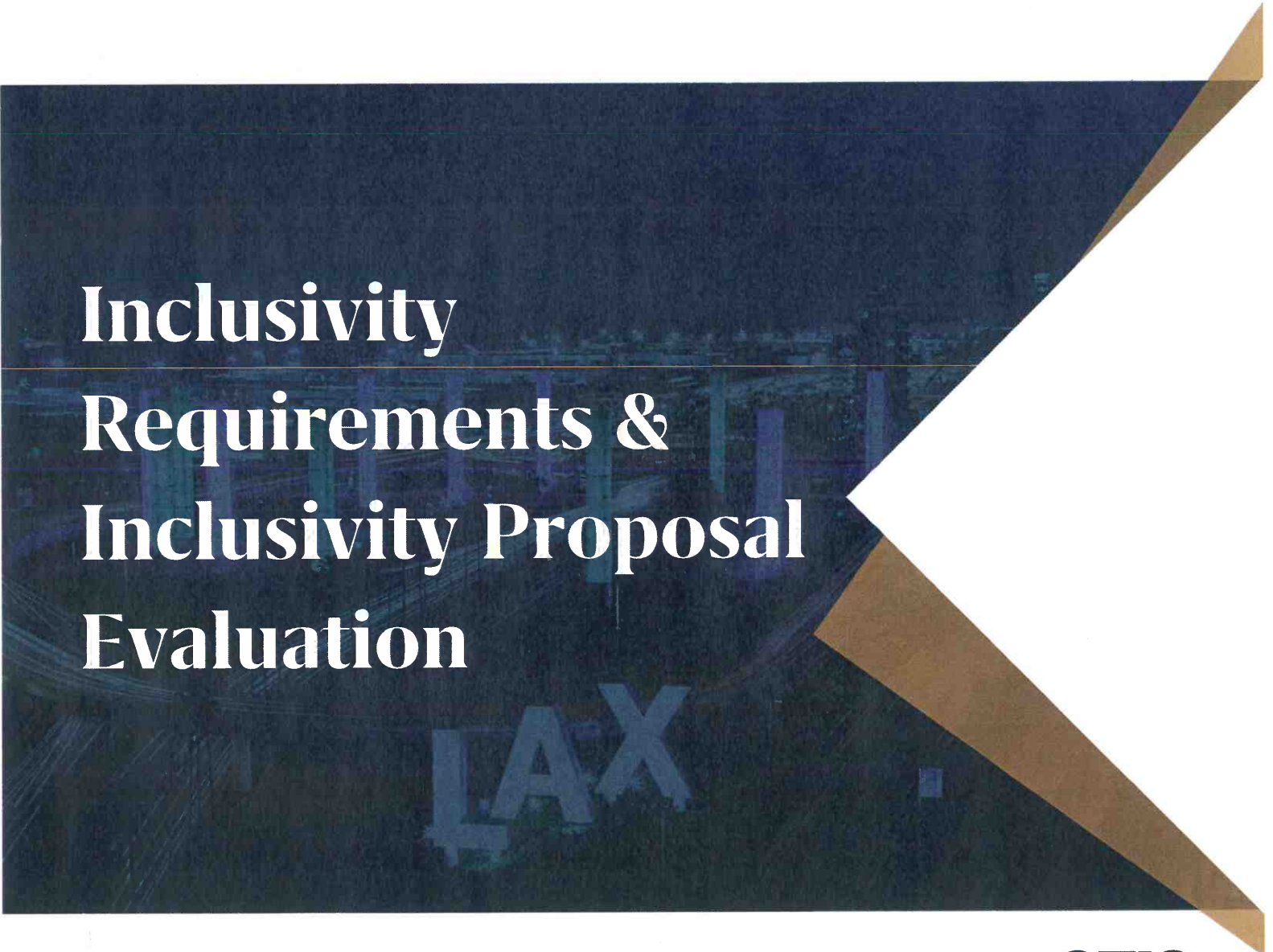
Note:

- (1) - Ramp up cost is to allow technicians to be fully badged and tooled
- (2) - Otis will work with LAWA to reduce this cost

Total Annual Contract Cost

The following are the annual contract cost for the contract term.

Total Annual Contract Cost	Base Term		
	Year 1	Year 2	Year 3
Total Annual Contract Cost	\$ 12,555,651.69	\$ 12,872,329.10	\$ 13,341,142.62



Inclusivity Requirements & Inclusivity Proposal Evaluation

OTIS

LAWA Inclusivity Plan

KEY GOALS AND OBJECTIVES

Diversity is a key goal at Otis, and we are committed to equity, inclusion and opportunity for local and qualified small businesses. Otis' works with local SBE's on many projects, to ensure we support the local Los Angeles business community, as well as small businesses in the region.

With our LAWA partnership, Otis will recruit certified firms and achieve the BE program mandatory minimums. Our commitment to diversity is shown below, as we wish to partner with the below firms to exceed the 10% requirements.

These are the small business enterprises Otis plans on working with as part of our partnership with LAWA under this RFP:

		NAICS #	% OF CONTRACT VALUE
	Parts Supply Lift Solutions, Inc.	#423830	6.89%
	Escalator Step Cleaning Supreme Facility Services Inc.	#561720	2.31%
	Reg 4 Testing Reg 4 Elevator Testing	#238290	.97%



Diversity, Equity & Inclusion

WE ARE OTIS



Our Vision

We give people freedom to connect and thrive in a taller, faster, smarter world.



Our Mission

A world-class, customer-centric, service-oriented company



Our Culture

We celebrate imagination.
We believe in us.
We are many voices.
We are better together.
We strive to be the best.

Otis will be achieving the minimum participation of 10% and will make strides for MBE/DBE participation.

At Otis, we aspire to reflect the communities where we live and work, we ensure all our voices feel safe, welcomed and heard, and we provide equitable opportunities to grow and contribute at our best.

We are committed to shaping a culture grounded in diversity, equity & inclusion – one that celebrates learning, growth, imagination and an open exchange of knowledge.

We need the ideas, perspectives and experiences of our diverse workforce to be inclusively valued to propel Otis' future success. We support our leaders in creating an environment where everyone can contribute their best work. We will continue driving initiatives for greater diversity and inclusion at Otis, guided by our strategic pillars:



CULTIVATE
OUR PEOPLE



TRANSFORM OUR
CAPABILITIES



FOSTER & ACTIVATE
OUR CULTURE



INFORM, INSPIRE &
ENGAGE OUR
COMMUNITIES

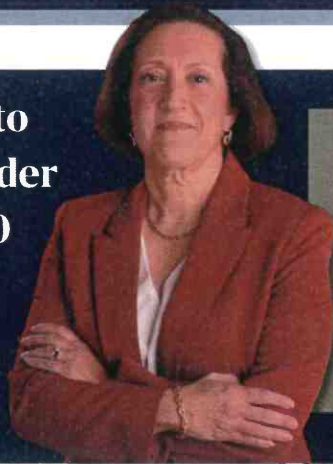


Dedicated global team focused on raising awareness and delivering continuous training in areas such as:

- Diversity, Equity, and Inclusion
- Culture & Ethnicity
- Disabilities
- Emotional Wellbeing & Empathy
- Unconscious Bias
- Microaggressions
- Intersectionality, Pronouns

Otis Global Commitments

Otis commits to achieving gender parity by 2030



ACHIEVING GENDER PARITY

Women currently represent more than one third of Otis executives and 40 percent in the US. Otis has pledged to realize parity of 50 percent women executives globally by 2030.

The scope of Diversity, Equity & Inclusion is vast and is integrated in every aspect of Otis. To ensure we are advancing globally, we are focused on the following priorities:

- Improve representation of underrepresented talent – women and racially diverse
- Accelerate sponsorship, mentorship and allyship
- Reinforce a diversity & inclusion mindset and hold leaders accountable
- Establish global baselines beyond gender



Employee Resource Groups



Otis has over 20 Employee Resources Groups globally with over 2,200 members and allies in over 15 countries that continues to grow every year.

Employee Resource Groups are a critical element of Otis diversity, equity & inclusion strategy. ERGs are dedicated to fostering a diverse and inclusive work environment through employee engagement, which positively impacts business outcomes. ERG events and activities are aligned with our company mission, vision, values and four strategic focus areas: **Career, Culture, Community and Customer** keeping Otis colleagues at the center of everything we do.

Creating a culture of inclusion and belonging is woven into the fabric of everything we do. One of our goals at Otis is to increase colleague favorability for the inclusive culture category in the company's engagement survey by four percentage points.

To support an inclusive culture, Otis has embarked on an Inclusive Leadership Journey, deploying two learning programs called **DECIDE** and **INCLUDE**, to all people leaders. People leaders are in turn cascading the learning to their direct reports, reaching all 70,000 Otis colleagues.

DECIDE provides strategies for identifying and mitigating unconscious bias.

INCLUDE provides strategies for people leaders and team members to build inclusive team environments.

People & Communities

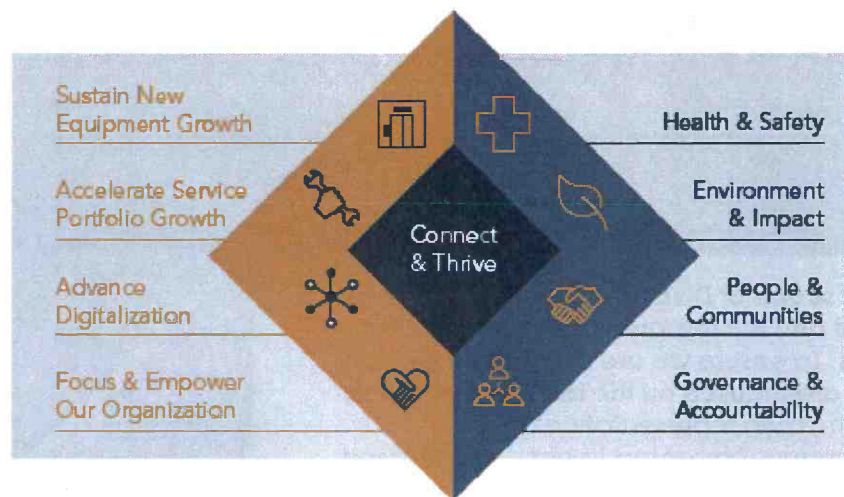
OUR COMMITMENT TO CHANGE

Sustaining connections – ESG at Otis

A focus on environmental, social and governance ("ESG") issues has been fundamental at Otis for decades. They are embedded in our Otis Absolutes as well as in our strategy, culture and programs. Our journey as an independent public company, and throughout the COVID-19 pandemic, has drawn additional attention to ESG-related topics, and our Board of Directors is directly engaged in review and oversight of these important issues.

In 2021, we conducted our first materiality assessment to identify and prioritize the ESG topics that are most important to Otis and our stakeholders. Through this process, we identified 13 topics within our four key areas of focus that align with the strategic imperatives that form our business strategy.

We have set goals within each of these areas, aligned to the U.N. Sustainable Development Goals ("SDGs"), on which we can have the greatest impact:



HEALTH & SAFETY

Aligned material issues

- Workforce well-being, health & safety
- Product quality & reliability
- Public health, safety & accessibility

Goals

- Commit to achieve a zero-harm workplace
- Expand availability of well-being and resilience services to all colleagues worldwide through an Employee Assistance Program by 2023
- Educate all field professionals and subcontractors annually on the life-saving Cardinal Rules, our fundamental work-safety principles

ENVIRONMENT & IMPACT

Aligned material issues

- Emissions, energy & climate change
- Waste
- Product design & sustainable innovation

Goals

- Achieve a 50% reduction of Scope 1 and Scope 2 emissions by 2030
- Reach carbon neutrality for factory electricity by 2030
- Achieve 100% factory eligibility for zero-waste-to-landfill certification by 2025
- Complete ISO 14001 certification for all factories by 2025

PEOPLE & COMMUNITIES

Aligned material issues

- Diversity, equity & inclusion
- Community engagement
- Colleague development, engagement & retention

Goals

- Achieve gender parity in our executive ranks by 2030
- Increase colleague favorability for the inclusive culture category in the company's engagement survey by 4 percentage points by 2025
- Direct 50% of total global giving to science, technology, engineering and math ("STEM") programs by 2025
- Impact 15,000 students globally through STEM-focused programming across the learning and vocational training continuum to improve livelihoods and help build the workforce of tomorrow by 2030
- Dedicate 500,000 colleague volunteer hours in support of vibrant communities, STEM education and social equity efforts globally by 2030

GOVERNANCE & ACCOUNTABILITY

Aligned material issues

- Regulatory, compliance & anti-corruption
- Ethics & Integrity
- Sustainable supply chain
- Cybersecurity, data privacy & intellectual property

Goals

- Award at least 20% of U.S. supplier spend annually to diverse suppliers⁽¹⁾

⁽¹⁾ Diverse supplier is defined as minority-owned, small business and/or operating in an economically challenged zone.



Claims History

OTIS



Claims History

Otis respectfully refers you to available public records regarding final rulings or outcomes on projects in the last five (5) years resulting in a claim, litigation, City Engineer's decision, mediation or arbitration with the client or owner. Any information not publicly available is confidential, and/or subject to attorney/client privilege.

An aerial night photograph of the Los Angeles Convention Center, showing its distinctive circular structure with numerous vertical support columns. The word 'LAX' is illuminated on the ground in front of the building. The image is partially obscured by a large white triangle on the right side, which is bordered by gold-colored diagonal stripes.

Safety

OTIS

Safety

**ALL
SAFE**

**CORE
PRINCIPLES**
Protecting the
public
Employee safety



**FIELD ASSESSMENT
& CONTROL**
Job hazard analysis
Hazard scan



COMMUNICATIONS
Safety alert
Safety meetings



**SAFETY
TRAINING**
Weekly/monthly
safety training
Annual EH&S plan

NAA	2017	2018	2019	2020	2021
# Loss Time Incidents	15	11	28	20	27
# Lost Days	736	366	1,246	1,337	1,259
OSHA Citations	1	0	1	1	Pending Data
EMR Rate	0.52	0.48	0.48	0.47	0.47

WORKMANS COMP MODIFIER



Brian Lynch
Vice President
Marsh USA Inc.
1156 Avenue of the Americas
New York, NY 10020-2774
+1 212 343 6000
www.marsh.com

December 13th, 2021

Regarding: NCCI Experience Modification Factors

Named Insured:
Ots Worldwide Corporation
One Carrier Place
Farmington, CT 06034

To Whom It May Concern:

The following is a listing of NCCI Experience Mods for Ots Worldwide Corporation

Rating Bureaus		Rating Effective Dates						
Bureau	Risk ID #	4/1/2016	4/1/2017	4/1/2018	4/1/2019	4/1/2020	12/1/2020	12/1/2021
NCCI	9144894 99	.55	.52	.53	.56	.57	.52	.56
PA	2087731	.658	.651	.675	.712	.748	.749	.750
NJ	344160	.342	.244	.315	.385	.416	.483	.581
CA	75507-F	.58	.51	.51	.48	.48	.47	.47
MI	151-884- 7-A	.50	.53	.48	.48	.50	.50	.45
DE	2087731	.835	.808	.796	.803	.804	.813	.813

Regards,

Brian Lynch

Brian Lynch

OSHA CITATIONS

October 13, 2020

Ots Elevator Company OSHA Citations



Below are the "Closed" citations that can be found on the WWW.OSHA.gov website for "Ots Elevator Company" for the period January 1, 2014 - October 15, 2020. The following link is to the OSHA inspection data website.

<http://www.osha.gov/pls/misweb/establishment.html>
SIC: 1796 / NAICS: 23624 / 35620

Record #	Opened	St	Location	Violation Type	File	Status	Action
1	1407091	2506	CA	Occupatio	TBD	TBD	Contracted
2	1426293	8/2/13	MA	Baseli	TBD	TBD	Contracted
3	1211994	2/18/2017	FL	Talabases	TBD	TBD	Contracted
4	1189862	3/7/2016	AK	Fairbanks	Other	No Fine	Employee removed other's personal lock.
5	1133776	3/18/16	CA	San Francisco	TBD	TBD	Contracted - Oakland Branch
6	1172176	8/24/2016	NV	Remo - Sparks	Referral	\$1,320	New construction jobsite. Cited was common to all trades turning to safety net. Damaged part of cord was found outside of building structure. Settlement changed this situation to "Other".
7	1198005	12/5/16	FL	Jacksonville	Willstown	No Fine	OSHA 1148 Elevation for PRCS, 29 CFR 1910.147 Energy Isolation Device
8	1065287	5/25/15	CO	Pueblo (Springfield)	Unknown	Unknown	Not Ots
9	10494793	06/16/2013	CA	1061 Potrero Avenue San Francisco, CA 94110	Other	No Fine	OSHA updated working checklist to include a constant 30-minute fire watch. Citation 1, item 1 vacated. Citation 1, item 2 revised for a "general" classification and \$750 penalty, with settlement described above resulted in no fine.
10	10498026	7/16/2012	MI	506 Atlas St Harbor	Setback	\$770	OSHA updated working checklist to include a constant 30-minute fire watch. Citation 1, item 1 vacated. Citation 1, item 2 revised for a "general" classification and \$750 penalty, with settlement described above resulted in no fine.

Full documents available upon request, trying to limit to 2 pages per RFP notes

OTIS SAFETY RECORD & PROGRAM

OTIS ELEVATOR COMPANY (NORTH AMERICA)							
January 1, 2019 through December 31, 2021							
Contract your OTIS Manager should you have no questions or find year specific report requires information that is not contained in this document							
Experience Modification Incident Rate				State of Origin: Florida			
EMR Anniversary Date: December 1, 2022							
Experience Modification Rate - Previous 3 Years							
2021	2020	2019	SIC Code	1796	NAICS Code	238200	
0.56	0.52	0.57	WC Job Classification Code: 5160				
SAFETY AND HEALTH MANAGEMENT							
a. Do we have or provide full time Environmental, Health, and Safety Directors? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No							
b. Do we have or provide full time Environmental, Health, and Safety Managers? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No							
c. Do we have or provide full time Environmental, Health, and Safety <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No							
d. Do we have or provide a Environmental, Health, and Safety incentive program? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No							
e. Do we have and enforce a Environmental, Health, and Safety disciplinary <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No							
f. Do we have or provide Company paid Environmental, Health, and Safety <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No							
Name:		Title:		Telephone:		E-Mail:	
Owen Postelstun		Director, EH&S -OIA NAA		408-376-1066		owen.postelstun@otis.com	
David Myers		Associate Director EH&S Eastern Region		203-434-9467		david.myers@otis.com	
Adam Suardin		Eastern Region EH&S Manager		717-700-0747		adam.suardin@otis.com	
Tom Host		Eastern Region EH&S Manager		443-345-1101		tom.host@otis.com	
Gill Collier		Eastern Region EH&S Manager		443-883-8725		gill.collier@otis.com	
Paul Heggie		Associate Director EH&S System		616-975-8022		paul.heggie@otis.com	
Open Position		Western Region EH&S Manager				tom.fugarty@otis.com	
Tom Fugarty		Western Region EH&S Manager		312-482-4929		tom.fugarty@otis.com	
Larry Williams		Western Region EH&S Manager		206-399-1115		larry.williams@otis.com	
Teti Herant		Western Region EH&S Manager		313-343-4721		peti.herant@otis.com	
Anthony Kilbellow		Western Region EH&S Specialist		707-764-7761		anthony.kilbellow@otis.com	
Ryan Keanee		Associate Director EH&S Southern		475-356-1283		ryan.keanee@otis.com	
Randy Terrell		Southern Region EH&S Manager		813-486-4974		randy.terrell@otis.com	
Kenneth Kowalchuk		Southern Region EH&S Manager		219-626-3528		kenneth.kowalchuk@otis.com	
Joey Daugherty		Southern Region EH&S Manager		812-326-1515		joey.daugherty@otis.com	
Surbina Pomeroy		Canada Region EH&S Manager		613-419-8107		surbina.pomeroy@otis.com	
Craig McGee		Canada Region EH&S Manager		416-498-7899		craig.mcgee@otis.com	
Shawn Ketter		Canada Region EH&S Manager		905-331-9919		shawn.ketter@otis.com	
Randy Rainwater		Strategic Partnerships EH&S Manager		415-235-3003		randy.rainwater@otis.com	
Lauren Johnson		Strategic Partnerships EH&S Analyst		508-355-4089		lauren.johnson@otis.com	
Kyle Matthews		Associate Director EH&S Fluence & OnC		848-431-4326		kyle.matthews@otis.com	
Lisa Harley-Smith		CSC EH&S Manager		888-286-4317		lsmith@otis.com	
				Injury / Illness Data			
Year:	2021	2020		2019			
Hours:	21,233,768	20,154,333		21,368,359			
Number of Employees	10,766	15,700		11,753			
				Incident Numbers and Rates			
Previous 3 Years		2021		2020		2019	
Number/ Rates	Number	Incident Rate	Number	Incident Rate	Number	Incident Rate	
Injuries involving Medical Treatment only (# of total loss > 200,000 # of total loss none)	27	0.3	38	0.4	41	0.4	
Injuries involving Restricted Work activity (# of Restricted > 200,000 # of total loss none)	59	0.6	52	0.5	99	0.9	

- These reflect only laws as they pertain to Process Safety Management (PSM):
 - a. Ensuring employees follow the safety rules of the facility?
 - b. Advising owner of any unique hazards presented by the contractor's work, and?
- Do we have a substance abuse program:
 - Pre-placement Testing
 - Random Testing
 - Testing for Cause
 - DOT Testing
- Do we conduct medical examinations for:
 - Pre-employment placement
 - Pre-placement Job Capability

- Unsafe Condition Reporting
- Vehicle Safety
- Waste Disposal

Subcontractors:

- a. Do we use subcontractors?
- b. Do we use safety & health professionals?
- c. Do we evaluate the ability of subcontractors?
- d. Our subcontractors are required to:
- e. We include our subcontractors in:

- Safety & Health Committee
- Safety & Health Training
- Inspections

[illegible][illegible]

<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<hr/>			
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<hr/>			
New Hires:		Supervisors	
Yes:	No:	Yes:	No:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<hr/>			
16+ hours			
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<hr/>			
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No

- Method used to verify understanding?

e. How do we verify the training? (Check all that apply)

- Written Test
- Oral Test
- Performance Test
- Job Monitoring
- Other (List) Formal Audits / Inspections

Full documents available upon request, trying to limit to 2 pages per RFP notes



OTIS

Los Angeles World Airports

**PART 2 – ADMINISTRATIVE
REQUIREMENTS**

**ELEVATOR, ESCALATOR & MOVING
WALKWAY MAINTENANCE**

Vendor Identification Form

VENDOR IDENTIFICATION FORM

ALL FIELDS MUST BE COMPLETED. INCOMPLETE FORMS WILL NEED TO BE RESUBMITTED.

GENERAL INFORMATION	
Legal Name: Otis Elevator Company	Doing Business As:
Are you an independent contractor eligible to receive a 1099-MISC? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> EIN or SSN: 13-5583389 (A TIN (SSN or EIN) and W-9 are required)	License or Registration Number (if applicable): C11-7031 Payment Terms (code): <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Seller's Permit Number (if applicable):
Ownership: <input type="checkbox"/> Individual / Sole Proprietor <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Governmental Entity <input type="checkbox"/> Other (specify):	Applicable to Out-of-state Vendors: Submit per CA FTB Pub 1017, Resident/ Nonresident Withholding Guidelines for information go to : www.ftb.ca.gov/ <input type="checkbox"/> Form-590 <input type="checkbox"/> Form-588 <input type="checkbox"/> Form-589 <input type="checkbox"/> Form-587 For Foreign Entities, for instructions go to: https://www.irs.gov/publications/p515 BTRC/Vendor Registration Number: 8 5 3 6 6 - 0 0 0 1 - 1 <input type="checkbox"/> BTRC/VRN application pending (please attach the application) For instructions please go to: https://latax.lacity.org/oofweb/eappreg/eappreg_criteria.cfm
BUSINESS ADDRESS	
Street: 2701 Media Center Drive #2 Suite #: 2	Contact Person: Ross Peare
City: Los Angeles	Contact Person's Title: Regional Sales Manager, Los Angeles
State: CA Zip Code: 90065	Fax: Phone: (312) 852 - 6843
Website: www.otis.com	Email: Ross.Peare@otis.com
Remittance address (if required and different from the above):	
BUSINESS INFORMATION	
Service Area: International <input checked="" type="checkbox"/> National <input type="checkbox"/> Regional <input type="checkbox"/> Local <input type="checkbox"/>	Years in Business: 160 Number of Employees: 60000
BUSINESS CERTIFICATION (Check all that apply)	
<input type="checkbox"/> Woman-Owned Business Enterprise (WBE) <input type="checkbox"/> Minority Business Enterprise (MBE) <input type="checkbox"/> Small Business Enterprise (according to SBA criteria) <input type="checkbox"/> Minority Women Business Enterprise (MWB)	<input type="checkbox"/> Disadvantaged Business Enterprise (DBE) <input type="checkbox"/> Airport Concessions Disadvantaged Business Enterprise <input type="checkbox"/> Small and Local Business Enterprise (SLB) If required, please attach copies of all applicable certifications.
NON-DISCRIMINATION, EQUAL EMPLOYMENT AND AFFIRMATIVE ACTION COMPLIANCE	
EEO Officer (name): Larry Campbell	Phone Number: (404)605-8430
EEO Officer's Title: Sr Director, Talent and Diversity, Equity & Inclusion Americas	Email: larry.campbell@otis.com
Have you had contracts with the City of Los Angeles in the last 10 years? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> . If 'yes', please attach an additional sheet with Contract Number, Department, Description and Dollar Value.	

CERTIFICATION

The undersigned declares and certifies that all statements on this form are true and correct. The undersigned agrees to notify Procurement Services Division immediately of any changes to the information contained herein.
The undersigned has read and agreed with the administrative requirements set for this project, and provided as a check list in the bid/proposal package, and will comply with them for the duration of the contract if selected.

Authorized Signature 

Date 10/28/2022

Print Name Ross Peare

Title Regional Sales Manager, Los Angeles

For LAWA use only:	
Project name:	Project No:
Requesting Division:	Contact Person: Phone No:
SAP Action (send the form to FAMIS Support Desk): <input type="checkbox"/> Create <input type="checkbox"/> Change <input type="checkbox"/> Block <input type="checkbox"/> Delete <input type="checkbox"/> New Ordering Address	

For instructions and additional information, please go to <https://www.lawa.org/en/lawa-businesses/lawa-administrative-requirements>, or call us at 424-646-5380 or email Los Angeles World Airports, Procurement Services Division at procurementrequirements@lawa.org

Current and Prior City of Los Angeles Contracts

Contract Number	Name of City Department/Agency	Contact person name and phone number	Signing date	Completion date	Description	Total dollar amount
DA-5194	Los Angeles World Airports - Phase III	Howard Horning (424) 646-7964	07/11/2017	07/31/2022	Extended preventative and routine maintenance service for 53 Phase III elevators at LAWA.	\$3,852,255
DA-4856	Los Angeles World Airports - Bradley West Gates & Core	Howard Horning (424) 646-7964	06/01/2015 (start date)	12/31/2019	Extended preventative and routine maintenance service. Additional unscheduled maintenance, repairs and parts.	\$7,683,845
185911	Metropolitan Water District	Gordon Mustoe (213) 217-6459	01/05/2021	01/31/2024	Provide monthly elevator maintenance and repair services on an as required basis	n/a

Current and Prior City of Los Angeles Contracts

Contract Number	Name of City Department/Agency	Contact person name and phone number	Signing date	Completion date	Description	Total dollar amount
DA-4371	Los Angeles World Airports W.E. O'Neil/GC	Doug McAdams 424-646-7433 Gustavo Becerra 310-628-0679	2012	2017	LAX Phase III 53 Elevator Modernizations	26,138,375.00
DA-4923	Los Angeles World Airports W.E. O'Neil/GC	Doug McAdams 424-646-7433 Randy Gellert 310-628-1137	2014	2018	LAX Parking Structures 24 Elevator Modernizations	14,974,500.00
DA-4849	Los Angeles World Airports Clark-McCarthy A Joint Venture	Becky Cawyer 310-729-8372 Dennis Breen	2014	2016	TBIT Renovation 2 Elevator Modernizations and 4 Installations 6 Escalator Installations	8,797,800.00
4013103-1400100	Los Angeles World Airports United Airlines Hensel Phelps	Conner O'Mara 949-852-0218	2015	2018	T7 United Airlines 6 Elevator and 12 Escalator Installations	11,195,360.00
1242765	Los Angeles World Airports Delta Airlines Swinerton Builders	Jacobus Claassens 678-296-7011 Maria Blair 213-952-1015	2013	2015	T5 Delta Airlines 5 Elevator and 7 Escalator Installations	4,104,311.00
DA-4971	Los Angeles World Airports Turner-PCL JV	Doug McAdams 424-646-7433 Felipe Chuang 626-833-4923	2016	2021	Midfield Satellite Concourse 31 Elevator, 8 Moving Walk and 38 Escalator Installations	35,760,277.00

Affidavit of Non-Collusion

AFFIDAVIT TO ACCOMPANY PROPOSALS OR BIDS

STATE OF CALIFORNIA)

COUNTY OF Los Angeles) ss.:Ross Pearce

being first duly sworn, deposes and says:

that he or she is the Regional Sales Manager ofOtis Elevator

, who submits herewith

(Type or print name of company/firm)

to the Board of Airport Commissioners the attached bid/proposal; that he or she is the person whose name is signed to the attached bid/proposal; that said bid/proposal is genuine; that the same is not sham or collusive; that all statements of fact therein are true; and that such bid/proposal was not made in the interest or behalf of any person, partnership, company, association, organization, or corporation not herein named or disclosed.

Affiant further deposes and says: that the bidder/proposer has not directly or indirectly by agreement, communication or conference with anyone, attempted to induce action prejudicial to the interests of the public body which is to award the contract, or of any other bidder/proposer, or anyone else interested in the proposed contract; and that the bidder/proposer has not in any manner sought by collusion to secure for himself/herself/itself/themselves, an advantage over any other bidder/proposer.

Affiant further deposes and says that prior to the public opening and reading of bids/proposals, said bidder/proposer:

- (a) did not, directly or indirectly, induce or solicit anyone else to submit a false or sham bid/proposal;
- (b) did not, directly or indirectly, collude, conspire, connive or agree with any one else that said bidder/proposer or anyone else would submit a false or sham bid, or that anyone should refrain from bidding or withdraw their bid/proposal;
- (c) did not, in any manner, directly or indirectly, seek by agreement, communication or conference with anyone to raise or fix the bid price of said bidder/proposer or of anyone else, or to raise or fix any overhead, profit or cost element of their price or of that of anyone else;
- (d) did not, directly or indirectly, submit their bid/proposal price or any breakdown thereof, or the contents thereof, or divulge information or data relative thereto, to any corporation, partnership, company, association organization, bid depository, or to any member or agent, thereof, or to any individual or group of individuals, except to the awarding authority or to any person or person who have a partnership or other financial interest with said bidder/proposer in their business.

Signed:

Ross PearceName: Ross PearceTitle: Regional Sales Manager

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20____, by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Acknowledgment Attached

Notary Public

(Notarial Seal)

CALIFORNIA ACKNOWLEDGMENT

CIVIL CODE § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

County of Los Angeles

On October 25, 2022

Date

before me,

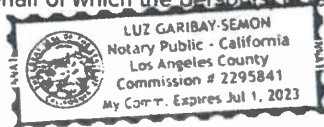
Luz Garibay-Semon Notary Public

Here Insert Name and Title of the Officer

personally appeared Ross Pearce

Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

[Handwritten Signature]

Signature of Notary Public

Place Notary Seal and/or Stamp Above

OPTIONAL

Completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: Affirmative

Document Date: OCTOBER 25, 2022

Number of Pages: 1

Signer(s) Other Than Named Above: N/A

Capacity(ies) Claimed by Signer(s)

Signer's Name: Ross Pearce

☐ Corporate Officer – Title(s): _____

☐ Partner – ☐ Limited ☐ General

☐ Individual ☐ Attorney in Fact

☐ Trustee ☐ Guardian or Conservator

☒ Other: Regional Sales Manager

Signer is Representing: OTIS Elevator

Signer's Name: _____

☐ Corporate Officer – Title(s): _____

☐ Partner – ☐ Limited ☐ General

☐ Individual ☐ Attorney in Fact

☐ Trustee ☐ Guardian or Conservator

☐ Other: _____

Signer is Representing: _____

Bidder Contributions

Prohibited Contributors
(Bidders)

This form must be completed in its entirety and submitted with your bid or proposal to the City department that is awarding the contract. Failure to submit a completed form may affect your bid or proposal. If you have questions about this form, please contact the Ethics Commission at (213) 978-1960.

☒ **Original Filing** ☐ **Amendment:** Date of Signed Original _____ Date of Last Amendment _____

Reference Number (Bid, Contract, or RAMP): 203921 Date Bid Submitted: 10/28/2022

Contract Description (Title of the RFP or City contract solicitation and description of the services to be provided):

Request for proposal - Conveyance Maintenance and Repair LAX and VNY

Awarding Authority (Department awarding the contract): City of Los Angeles, Los Angeles World Airports

Bidder Name: Otis Elevator Company

Bidder Address: 2701 Media Center Drive, Suite 2, Los Angeles, CA 90065

Bidder Email Address: Ross.Peare@otis.com Bidder Phone Number: (312) 852 - 6843

Schedule Summary

Please complete all three of the following:

1. **SCHEDULE A – Bidder's Principals** (check one)

The bidder has one or more **PRINCIPALS**, as defined in LAMC § 49.7.35(A)(6).

At least one principal is required for entities. (If you check "Yes", Schedule A is required.)

Yes

☒

No

☐2. **SCHEDULE B – Subcontractors and Their Principals** (check one)

The bidder has one or more **SUBCONTRACTORS** on this bid or proposal with

subcontracts worth \$100,000 or more. (If you check "Yes", Schedule B is required.)

Yes

☒

No

☐3. **TOTAL NUMBER OF PAGES SUBMITTED** (including this cover page): 5

Certification

I certify the following under penalty of perjury under the laws of the City of Los Angeles and the state of California:

A) I understand, will comply with, and have notified my principals and subcontractors of the requirements and restrictions in Los Angeles City Charter § 470(c)(12) and any related ordinances; B) I understand that I must amend this form within ten business days if any information changes; C) I am the bidder named above or I am authorized to represent the bidder named above, and my name appears below; and D) The information provided in this form is true and complete to the best of my knowledge and belief.

Ross Peare

Name

Regional Sales Manager

Title

Ross Peare

Signature

10/28/2022

Date

Prohibited Contributors (Bidders)

Schedule A - Bidder's Principals

Please identify the names and titles of all the bidder's principals (attach additional sheets if necessary). Principals include a bidder's board chair, president, chief executive officer, chief operating officer, and individuals who serve in the functional equivalent of one or more of those positions. Principals also include individuals who hold an ownership interest in the bidder of at least 20 percent and employees of the bidder who are authorized by the bid or proposal to represent the bidder before the City.

Name: Judy Marks Title: Chair, Chief Executive Officer
Address: 1 Farm Springs Road, Farmington, CT 06032

Name: Jim Cramer Title: President, Otis Americas
Address: 1 Farm Springs Road, Farmington, CT 06032

Name: Todd Glance Title: Executive Vice President, Operations
Address: 1 Farm Springs Road, Farmington, CT 06032

Name: Julie Brandt Title: Regional Vice President, U.S. Western Region
Address: 1 Farm Springs Road, Farmington, CT 06032

Name: Marcus Burton Title: Regional General Manager, Southwest
Address: 2701 Media Center Drive, Suite 2, Los Angeles, CA 90065

Name: Jim Strachan Title: Director & General Manager, Greater Los Angeles
Address: 2701 Media Center Drive, Suite 2, Los Angeles, CA 90065

Name: Ross Peare Title: Regional Sales Manager, Los Angeles
Address: 2701 Media Center Drive, Suite 2, Los Angeles, CA 90065

Name: Andrea Thomas Title: Territory Manager
Address: 2701 Media Center Drive, Suite 2, Los Angeles, CA 90065

Name: _____ Title: _____
Address: _____

☐ Check this box if additional Schedule A pages are attached.

Prohibited Contributors (Bidders)

Schedule B - Subcontractors and Their Principals

Please identify all subcontractors whose subcontracts are worth \$100,000 or more. Separate Schedule B pages are required for each subcontractor who meets the threshold.

Subcontractor's Name Reg. 4 Elevator Testing
Subcontractor's Address P.O. Box 1507, Claremont, CA 91711

Please check one of the following options:

This subcontractor has one or more principals. ☒ Yes* ☐ No

** Each principal's name and title must be identified below. Attach additional sheets if necessary. Principals include a subcontractor's board chair, president, chief executive officer, chief operating officer, and individuals who serve in the functional equivalent of one or more of those positions. Principals also include individuals who hold an ownership interest in the subcontractor of at least 20 percent and employees of the subcontractor who are authorized by the bid or proposal to represent the subcontractor before the City.*

Name: Mike Torres	Title: Co-president
Address: P.O. Box 1507, Claremont, CA 91711	

Name: Teresa Torres	Title: Co-president, Chief Financial Officer, Secretary
Address: P.O. Box 1507, Claremont, CA 91711	

Name: _____	Title: _____
Address: _____	

Name: _____	Title: _____
Address: _____	

Name: _____	Title: _____
Address: _____	

Name: _____	Title: _____
Address: _____	

☒ Check this box if additional Schedule B pages are attached.

Prohibited Contributors (Bidders)

Schedule B - Subcontractors and Their Principals

Please identify all subcontractors whose subcontracts are worth \$100,000 or more. Separate Schedule B pages are required for each subcontractor who meets the threshold.

Subcontractor's Name Supreme Facilities Services, Inc.
Subcontractor's Address 28310 Roadside Dr. #252, Agoura Hills, CA 91301

Please check one of the following options:

This subcontractor has one or more principals. ☒ Yes* ☐ No

** Each principal's name and title must be identified below. Attach additional sheets if necessary. Principals include a subcontractor's board chair, president, chief executive officer, chief operating officer, and individuals who serve in the functional equivalent of one or more of those positions. Principals also include individuals who hold an ownership interest in the subcontractor of at least 20 percent and employees of the subcontractor who are authorized by the bid or proposal to represent the subcontractor before the City.*

Name: <u>Christoper Sotere</u>	Title: <u>Co-president</u>
Address: <u>28310 Roadside Dr. #252, Agoura Hills, CA 91301</u>	
Name: <u>Eva Sotere</u>	Title: <u>Co-president</u>
Address: <u>28310 Roadside Dr. #252, Agoura Hills, CA 91301</u>	
Name: _____	Title: _____
Address: _____	
Name: _____	Title: _____
Address: _____	
Name: _____	Title: _____
Address: _____	
Name: _____	Title: _____
Address: _____	

☐ Check this box if additional Schedule B pages are attached.

Prohibited Contributors (Bidders)

Schedule B - Subcontractors and Their Principals

Please identify all subcontractors whose subcontracts are worth \$100,000 or more. Separate Schedule B pages are required for each subcontractor who meets the threshold.

Subcontractor's Name Lift Solutions Inc.
Subcontractor's Address 1806 S. Lake Stevens Road, Lake Stevens, WA 98258

Please check one of the following options:

This subcontractor has one or more principals. ☒ Yes* ☐ No

** Each principal's name and title must be identified below. Attach additional sheets if necessary. Principals include a subcontractor's board chair, president, chief executive officer, chief operating officer, and individuals who serve in the functional equivalent of one or more of those positions. Principals also include individuals who hold an ownership interest in the subcontractor of at least 20 percent and employees of the subcontractor who are authorized by the bid or proposal to represent the subcontractor before the City.*

Name: John Castano	Title: Chief Executive Officer
Address: 1806 S. Lake Stevens Road, Lake Stevens, WA 98258	
Name: _____	Title: _____
Address: _____	
Name: _____	Title: _____
Address: _____	
Name: _____	Title: _____
Address: _____	
Name: _____	Title: _____
Address: _____	
Name: _____	Title: _____
Address: _____	

☐ Check this box if additional Schedule B pages are attached.

Contractor Responsibility Program

**LOS ANGELES WORLD AIRPORTS
CONTRACTOR RESPONSIBILITY PROGRAM
QUESTIONNAIRE**

On December 4, 2001, the Board of Airport Commissioners adopted Resolution No. 21601, establishing LAWA's Contractor Responsibility Program (CRP). The intent of the program is to ensure that all LAWA contractors have the necessary quality, fitness and capacity to perform the work set forth in the contract. To assist LAWA in making this determination, each bidder/proposer is required to complete and submit with the bid/proposal the attached CRP Questionnaire. If a non-competitive process is used to procure the contract, the proposed contractor is required to complete and submit the CRP Questionnaire to LAWA prior to execution of the contract. Submitted CRP questionnaires will become public records and information contained therein will be available for public review for at least fourteen (14) calendar days, except to the extent that such information is exempt from disclosure pursuant to applicable law.

The signatory of this questionnaire guarantees the truth and accuracy of all statements and answers to the questions herein. Failure to complete and submit this questionnaire may make the bid/proposal non-responsive and result in non-award of the proposed contract. During the review period if the bidder/proposer or contractor (collectively referred to hereafter as "bidder/proposer") is found non-responsible, he/she is entitled to an Administrative Hearing if a written request is submitted to LAWA within ten (10) working days from the date LAWA issued the non-responsibility notice. Final determination of non-responsibility will result in disqualification of the bid/proposal or forfeiture of the proposed contract.

All Questionnaire responses must be typewritten or printed in ink. Where an explanation is required or where additional space is needed to explain an answer, use the CRP Questionnaire Attachment A. Submit the completed and signed Questionnaire and all attachments to LAWA. Retain a copy of this completed questionnaire for future reference. Contractors shall submit updated information to LAWA within thirty (30) days if changes have occurred that would make any of the responses inaccurate in any way.

A. PROJECT TITLE: Request for Proposal - Conveyance Maintenance and Repair LAX and VNY

B. BIDDER/CONTRACTOR INFORMATION:

Otis Elevator Company			
Legal Name	DBA		
2701 Media Center Drive, Suite 2	Los Angeles	CA	90065
Street Address	City	State	Zip
Ross Peare, Regional Sales Manager	(312) 852 - 6843		
Contact Person, Title	Phone	Fax	

C. TYPE OF SUBMISSION: The CRP Questionnaire being submitted is:

- ☒ An initial submission of a CRP Questionnaire. **Please complete all questions and sign Attachment A.**
- ☐ An update of a prior CRP Questionnaire dated ____/____/____. **Please complete all questions and sign Attachment A.**
- ☐ A copy of the initial CRP Questionnaire dated ____/____/____/. **Please sign below and return this page.**

I certify under penalty of perjury under the laws of the State of California that there has been no change to any of the responses since the firm submitted the last CRP Questionnaire.

Ross Peare, Regional Sales Manager

Print Name, Title


Signature

10/28/2022
Date

A. OWNERSHIP AND NAME CHANGES

1a. In the past five (5) years, has the name of the bidder/proposer (also referred to herein as "your firm") changed?

☐ Yes ☒ No

If **Yes**, list on Attachment A all prior legal and D.B.A. names used by the bidder/proposer, the addresses of each of the identified entities, and the dates when each identified entity used those names. Additionally, please explain in detail the specific reason(s) for each name change.

1b. In the past five (5) years, has the owner of your firm (if your firm is a sole proprietorship) or any partner of your firm (if your firm is a partnership), or any officer of your firm (if your firm is a corporation) engaged in the same or similar type of business as the current firm?

☐ Yes ☒ No

If **Yes**, list on Attachment A the names of those firms.

B. FINANCIAL RESOURCES AND RESPONSIBILITY

2. In the past five (5) years, has your firm ever been the debtor in a bankruptcy proceeding?

☐ Yes ☒ No

If **Yes**, explain on Attachment A the specific circumstances and dates surrounding each instance.

3. Is your company now in the process of, or in negotiations toward, or in preparations for being sold?

☐ Yes ☒ No

If **Yes**, explain on Attachment A the specific circumstances, including to whom being sold and principal contact information.

4. In the past five (5) years, has your firm's financial position significantly changed?

☐ Yes ☒ No

If **Yes**, explain the specific circumstances on Attachment A.

5. In the past five (5) years, has your firm ever been denied bonding?

☐ Yes ☒ No

If **Yes**, explain on Attachment A the specific circumstances surrounding each instance and include the name of the bonding company.

6. In the past five (5) years, has any bonding company made any payments to satisfy any claims made against a bond issued on your firm's behalf or a firm where you were the principal?

☐ Yes ☒ No

If **Yes**, explain on Attachment A the specific circumstances surrounding each instance.

PERFORMANCE HISTORY

7. In the past five (5) years, has your firm or the owner of your firm (if your firm is a sole proprietorship) or any partner of your firm (if your firm is a partnership), or any officer of your firm (if your firm is a corporation) defaulted under a contract with a governmental entity or with a private individual or entity?

☐ Yes ☒ No

If **Yes**, explain on Attachment A the specific circumstances surrounding each instance.

8. In the past five (5) years, has a governmental or private entity or individual terminated your firm's contract prior to completion of the contract?

☐ Yes ☒ No

If **Yes**, explain on Attachment A the specific circumstances surrounding each instance, and principal contact information.

9. In the past five (5) years, has your firm ever failed to meet any scheduled deliverables or milestones?

☐ Yes ☒ No

If **Yes**, explain on Attachment A the circumstances surrounding each instance, and principal contact information.

10. In the past ten (10) years, has the bidder/proposer had any contracts with any private or governmental entity to perform work which is similar, in any way, to the work to be performed on the contract for which you are bidding or proposing?

☒ Yes ☐ No

If **Yes**, list on a separate attachment, for each contract listed in response to this question: (a) contract number and dates; (b) awarding authority; (c) contact name and phone number; (d) description and success of performance; and (e) total dollar amount. Include audit information if available.

COMPLIANCE

11. In the past five (5) years, has your firm or any of its owners, partners, or officers, been penalized for or been found to have violated any federal, state, or local laws in the performance of a contract, including but not limited to laws regarding health and safety, labor and employment, wage and hours, and licensing laws which affect employees?

☐ Yes ☒ No

If **Yes**, explain on Attachment A the specific circumstances surrounding each instance, including the entity involved, the specific infraction(s), the dates of such instances, and the outcome and current status.

12. In the past five (5) years, has your firm ever been debarred or determined to be a non-responsible bidder contractor?

☐ Yes ☒ No

If **Yes**, explain on Attachment A the specific circumstances surrounding each instance, including the entity involved, the specific infraction(s), the dates of such instances, and the current status.

BUSINESS INTEGRITY

13. In the past five (5) years, has your firm been convicted of, or found liable in a civil suit for making a false claim(s) or material misrepresentation(s) to any private or governmental entity?

☐ Yes ☒ No

If **Yes**, explain on Attachment A the specific circumstances surrounding each instance, including the entity involved, the specific infraction(s), the dates of such instances, and the outcome and current status.

14. In the past five (5) years, has your firm or any of its executives, management personnel, and owners been convicted of a crime, including misdemeanors, or been found liable in a civil suit involving the bidding, awarding, or performance of a government contract; or the crime of theft, fraud, embezzlement, perjury, or bribery?

☐ Yes ☒ No

If **Yes**, explain on Attachment A the specific circumstances surrounding each instance, including the entity involved, the specific infraction(s), the dates of such instances, and current status.

ATTACHMENT "A"
FOR ANSWERS TO QUESTIONS IN SECTIONS A THROUGH E

Use the space below to provide required additional information or explanation(s). Information submitted on this sheet must be typewritten. Indicate the question for which you are submitting the additional information. Information submitted on this Attachment will be available for public review, except to the extent that such information is exempt from disclosure pursuant to applicable law. **Insert additional Attachment A pages as necessary.**

1. Los Angeles World Airports - Phase III

- a. Contract number: DA-5194 Dates: 08/01/2017 - 07/31/2022
- b. Awarding authority: Los Angeles World Airports
- c. Contact name & phone number: Howard Horning (424) 646-7964
- d. Description & success of performance: Extended preventative and routine maintenance for all 52 elevators and escalators.
- e. Total dollar amount: \$3,852,255

2. Los Angeles World Airports - Bradley West Gate & Core

- a. Contract number: DA-4856 Dates: 01/01/2015 - 12/31/2019
- b. Awarding authority: Los Angeles World Airports
- c. Contact name & phone number: Howard Horning (424) 646-7964
- d. Description & success of performance: Extended preventative and routine maintenance for all 90 elevators, escalators and moving walkways.
- e. Total dollar amount: \$7,683,845

3. Metropolitan Water District

- a. Contract number: 185911 Dates: 01/05/2021 - 01/31/2024
- b. Awarding authority: Metropolitan Water District
- c. Contact name & phone number: Gordon Mustoe (213) 217-6459
- d. Description & success of performance: Provide monthly elevator maintenance and repair service on an as required basis
- e. Total dollar amount: n/a

4. Los Angeles World Airport - W.E O'Neill/GC - LAX Phase III Modernization

- a. Contract number: DA-4371 Dates: 2012-2017
- b. Awarding authority: Los Angeles World Airports
- c. Contact name & phone number: Doug McAdams (424) 646-7433
- d. Description & success of performance: Modernization all 53 elevators at LAX Phase III
- e. Total dollar amount: \$26,138,375.00

5. Los Angeles World Airport - Turner;PL JV- LAX Midfield Installation

- a. Contract number: DA-4971 Dates: 2016-2021
- b. Awarding authority: Los Angeles World Airports
- c. Contact name & phone number: Doug McAdams (424) 646-7433
- d. Description & success of performance: Install 31 elevators, 8 moving walk and 38 escalators
- e. Total dollar amount: \$35,760,277.00

CERTIFICATION UNDER PENALTY OF PERJURY

I certify under penalty of perjury under the laws of the State of California that I have read and understand the questions contained in this CRP Questionnaire. I further certify that I am responsible for the completeness and accuracy of the answers to each question, and that all information provided in response to this Questionnaire is true to the best of my knowledge and belief.

Ross Peare, Regional Sales Manager


Signature

10/28/2022
Date

Print Name, Title

**LOS ANGELES WORLD AIRPORTS
CONTRACTOR RESPONSIBILITY PROGRAM
PLEDGE OF COMPLIANCE**

The Los Angeles World Airports (LAWA) Contractor Responsibility Program (Board Resolution #21601) provides that, unless specifically exempted, LAWA contractors working under contracts for services, for purchases, for construction, LAWA licensees with licenses, agreements or permits issued under the Certified Service Provider Program, and LAWA tenants with leases, that require the Board of Airport Commissioners' approval shall comply with all applicable provisions of the LAWA Contractor Responsibility Program. Bidders and proposers are required to complete and submit this Pledge of Compliance with the bid or proposal or with an amendment of a contract subject to the CRP. In addition, within 10 days of execution of any subcontract, the contractor shall submit to LAWA this Pledge of Compliance from each subcontractor who has been listed as performing work on the contract.

The contractor agrees to comply with the Contractor Responsibility Program and the following provisions:

- (a) To comply with all applicable Federal, state, and local laws in the performance of the contract, including but not limited to, laws regarding health and safety, labor and employment, wage and hours, and licensing laws which affect employees.
- (b) To notify LAWA within thirty (30) calendar days after receiving notification that any government agency has initiated an investigation that may result in a finding that the contractor is not in compliance with paragraph (a).
- (c) To notify LAWA within thirty (30) calendar days of all findings by a government agency or court of competent jurisdiction that the contractor has violated paragraph (a).
- (d) To provide LAWA within thirty (30) calendar days updated responses to the CRP Questionnaire if any change occurs which would change any response contained within the completed CRP Questionnaire. Note: This provision does not apply to amendments of contracts not subject to the CRP and to subcontractors not required to submit a CRP Questionnaire.
- (e) To ensure that subcontractors working on the LAWA contract shall complete and sign a Pledge of Compliance attesting under penalty of perjury to compliance with paragraphs (a) through (c) herein. To submit to LAWA the completed Pledges.
- (f) To notify LAWA within thirty (30) days of becoming aware of an investigation, violation or finding of any applicable federal, state, or local law involving the subcontractors in the performance of a LAWA contract.
- (g) To cooperate fully with LAWA during an investigation and to respond to request(s) for information within ten (10) working days from the date of the Notice to Respond.

Failure to sign and submit this form to LAWA with the bid/proposal may make the bid/proposal non-responsive.

Company Name, Address and Phone Number **Otis Elevator Company, 2701 Media Center Drive, Suite 2,
Los Angeles, CA 90065 Phone: (323) 342 - 4500**

Signature of Officer or Authorized Representative



Date **10/28/2022**

Print Name and Title of Officer or Authorized Representative **Ross Peare, Regional Sales Manager**

Project Title **Conveyance Maintenance and Repair LAX and VNY**

Iran Contracting Compliance Affidavit

IRAN CONTRACTING ACT OF 2010 COMPLIANCE AFFIDAVIT

(California Public Contract Code Sections 2200-2208)

The California Legislature adopted the Iran Contracting Act of 2010 to respond to policies of Iran in a uniform fashion (PCC § 2201(q)). The Iran Contracting Act prohibits bidders engaged in investment activities in Iran from bidding on, submitting proposals for, or entering into or renewing contracts with public entities for goods and services of one million dollars (\$1,000,000) or more (PCC § 2203(a)). A bidder who "engages in investment activities in Iran" is defined as either:

1. A bidder providing goods or services of twenty million dollars (\$20,000,000) or more in the energy sector of Iran, including provision of oil or liquefied natural gas tankers, or products used to construct or maintain pipelines used to transport oil or liquefied natural gas, for the energy sector of Iran; or
2. A bidder that is a financial institution (as that term is defined in 50 U.S.C. § 1701) that extends twenty million dollars (\$20,000,000) or more in credit to another person, for 45 days or more, if that person will use the credit to provide goods or services in the energy sector in Iran and is identified on a list created by the California Department of General Services (DGS) pursuant to PCC § 2203(b) as a person engaging in the investment activities in Iran.

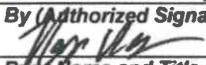
The bidder shall certify that at the time of submitting a bid for new contract or renewal of an existing contract, the bidder is **not** identified on the DGS list of ineligible businesses or persons and that the bidder is **not** engaged in investment activities in Iran in violation of the Iran Contracting Act of 2010.

California law establishes penalties for providing false certifications, including civil penalties equal to the greater of \$250,000 or twice the amount of the contract for which the false certification was made; contract termination; and three-year ineligibility to bid on contracts (PCC § 2205).

To comply with the Iran Contracting Act of 2010, the bidder shall provide its vendor or financial institution name, and City Business Tax Registration Certificate (BTRC) if available, in completing ONE of the options shown below.

OPTION #1: CERTIFICATION

I, the official named below, certify that I am duly authorized to execute this certification on behalf of the bidder or financial institution identified below, and that the bidder or financial institution identified below is **not** on the current DGS list of persons engaged in investment activities in Iran and is **not** a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person or vendor, for 45 days or more, if that other person or vendor will use the credit to provide goods or services in the energy sector in Iran and is identified on the current DSG list of persons engaged in investment activities in Iran.

Vendor Name/Financial Institution (printed) Otis Elevator Company		BTRC (or n/a) 85366-0001-1
By (Authorized Signature) 		
Print Name and Title of Person Signing Ross Pearce, Regional Sales Manager		
Date Executed	City Approval (Signature)	(Print Name)

OPTION #2: EXEMPTION

Pursuant to PCC § 2203(c) and (d), a public entity may permit a bidder or financial institution engaged in investment activities in Iran, on a case-by-case basis, to be eligible for, or to bid on, submit a proposal for, or enter into, or renew, a contract for goods and services. If the bidder or financial institution identified below has obtained an exemption from the certification requirement under the Iran Contracting Act of 2010, the bidder or financial institution shall complete and sign below and attach documentation demonstrating the exemption approval.

Vendor Name/Financial Institution (printed)		BTRC (or n/a)
By (Authorized Signature)		
Print Name and Title of Person Signing		
Date Executed	City Approval (Signature)	(Print Name)

Equal Benefits Ordinance

LAWA EBO COMPLIANCE

FOR LAWA CONTRACTORS ONLY

City of Los Angeles
Department of Public Works
Bureau of Contract Administration
Office of Contract Compliance
1149 S. Broadway, Suite 300, Los Angeles, CA 90015
Phone: (213) 847-2625 E-mail: bca.eeoe@lacity.org

EQUAL BENEFITS ORDINANCE COMPLIANCE AFFIDAVIT

Prime contractors must certify compliance with Los Angeles Administrative Code (LAAC) Section 10.8.2.1 et seq. prior to the execution of a City agreement subject to the Equal Benefits Ordinance (EBO).

SECTION 1. CONTACT INFORMATION

Company Name: Otis Elevator Company

Company Address: 2701 Media Center Drive, Suite 2

City: Los Angeles State: CA Zip: 90065

Contact Person: Ross Peare Phone: (312)852-6843 E-mail: Ross.Peare@otis.com

Approximate Number of Employees in the United States: 60,000

Approximate Number of Employees in the City of Los Angeles: 300

SECTION 2. EBO REQUIREMENTS

The EBO requires City Contractors who provide benefits to employees with spouses to provide the same benefits to employees with domestic partners. Domestic Partner means any two adults, of the same or different sex, who have registered as domestic partners with a governmental entity pursuant to state or local law authorizing this registration, or with an internal registry maintained by the employer of at least one of the domestic partners.

Unless otherwise exempt, the contractor is subject to and shall comply with the EBO as follows:

- A. The contractor's operations located within the City limits, regardless of whether there are employees at those locations performing work on the City Contract; and
- B. The contractor's operations located outside of the City limits if the property is owned by the City or the City has a right to occupy the property, and if the contractor's presence at or on the property is connected to a Contract with the City; and
- C. The Contractor's employees located elsewhere in the United States, but outside of the City Limits, if those employees are performing work on the City Contract.

A Contractor must post a copy of the following statement in conspicuous places at its place of business available to employees and applicants for employment:

"During the performance of a Contract with the City of Los Angeles, the Contractor will provide equal benefits to its employees with spouses and its employees with domestic partners."

SECTION 3. COMPLIANCE OPTIONS

I have read and understand the provisions of the Equal Benefits Ordinance and have determined that this company will comply as indicated below:

- ☐..... I have no employees.
- ☐..... I provide no benefits.
- ☐..... I provide benefits to employees only. Employees are prohibited from enrolling their spouse or domestic partner.
- ☐..... I provide equal benefits as required by the City of Los Angeles EBO.
- ☐..... I provide employees with a "Cash Equivalent." Note: The "Cash Equivalent" is the amount of money equivalent to what your company pays for spousal benefits that are unavailable for domestic partners, or vice versa.
- ☒..... All or some employees are covered by a collective bargaining agreement (CBA) or union trust fund. Consequently, I will provide Equal Benefits to all non-union represented employees, subject to the EBO, and will propose to the affected unions that they incorporate the requirements of the EBO into their CBA upon amendment, extension, or other modification of the CBA.
- ☐..... Health benefits currently provided do not comply with the EBO. However, I will make the necessary changes to provide Equal Benefits upon my next Open Enrollment period which begins on (Date) _____.
- ☐..... Our current company policies, i.e., family leave, bereavement leave, etc., do not comply with the provisions of the EBO. However, I will make the necessary modifications within three (3) months from the date of this affidavit.

SECTION 4. DECLARATION UNDER PENALTY OF PERJURY

I understand that I am required to permit the City of Los Angeles access to and upon request, must provide certified copies of all company records pertaining to benefits, policies and practices for the purpose of investigation or to ascertain compliance with the Equal Benefits Ordinance. Furthermore, I understand that failure to comply with LAAC Section 10.8.2.1 et seq., Equal Benefits Ordinance may be deemed a material breach of any City contract by the Awarding Authority. The Awarding Authority may cancel, terminate or suspend in whole or in part, the contract; monies due or to become due under a contract may be retained by the City until compliance is achieved. The City may also pursue any and all other remedies at law or in equity for any breach. The City may use the failure to comply with the Equal Benefits Ordinance as evidence against the Contractor in actions taken pursuant to the provisions of the LAAC Section 10.40, et seq., Contractor Responsibility Ordinance.

Otis Elevator Company will comply with the Equal Benefits Ordinance requirements
Company Name

as indicated above prior to executing a contract with the City of Los Angeles and will comply for the entire duration of the contract(s).

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that I am authorized to bind this entity contractually.

Executed this 28 day of October, in the year 2022, at Los Angeles, CA
(City) (State)

[Signature]
Signature

Ross Peare
Name of Signatory (please print)

Regional Sales Manager
Title

2701 Media Center Drive, Suite 2
Mailing Address

Los Angeles, CA 90065
City, State, Zip Code

13-5583389
EIN/TIN

Municipal Lobbying Ordinance

Bidder Certification

This form must be submitted with your bid or proposal to the City department that is awarding the contract noted below. If you have questions about this form, please contact the Ethics Commission at (213) 978-1960.

☒ Original Filing ☐ Amendment: Date of Signed Original _____ Date of Last Amendment _____

Reference Number (Bid, Contract, or RAMP) 203921	Awarding Authority (Department awarding the contract) City of Los Angeles, Los Angeles World Airports
Bidder Name Otis Elevator Company	
Address 2701 Media Center Drive, Suite 2, Los Angeles, CA 90065	
Email Address Ross.Peare@otis.com	Phone Number (323) 342 - 4500

Certification

I certify the following on my own behalf or on behalf of the entity named above, which I am authorized to represent:

A. I am applying for one of the following types of contracts with the City of Los Angeles:

1. A goods or services contract with a value of more than \$25,000 and a term of at least three months;
2. A construction contract with any value and duration;
3. A financial assistance contract, as defined in Los Angeles Administrative Code § 10.40.1(h), with a value of at least \$100,000 and a term of any duration; or
4. A public lease or license, as defined in Los Angeles Administrative Code § 10.40.1(i), with any value and duration.

B. I acknowledge and agree to comply with the disclosure requirements and prohibitions established in the Los Angeles Municipal Lobbying Ordinance if I qualify as a lobbying entity under Los Angeles Municipal Code § 48.02.

I certify under penalty of perjury under the laws of the City of Los Angeles and the state of California that the information in this form is true and complete.

Ross Peare

Name


Signature

Regional Sales Manager

Title

10/28/2022
Date

SMALL BUSINESS ENTERPRISE PROGRAM

AFFIDAVIT
REQUIRED OF ALL PROPOSERS/BIDDERS
(This Affidavit will become part of the contract for the selected Proposer/Bidder)

The City of Los Angeles, Los Angeles World Airports (LAWA) is committed to creating an environment that provides all individuals and businesses open access to the business opportunities available at LAWA.

MANDATORY BUSINESS ENTERPRISE PARTICIPATION LEVELS:

<p>This Project has the following mandatory participation levels:</p> <p style="text-align: center;">SBE <u>10</u> %</p> <p style="text-align: center;">LBE <u>0</u> %</p> <p style="text-align: center;">LSBE <u>0</u> %</p> <p style="text-align: center;">DVBE <u>0</u> %</p>	<p>If awarded the contract, the selected Proposer/Bidder commits to achieving the following participation levels on the Project:</p> <p style="text-align: center;">SBE <u>10</u> %</p> <p style="text-align: center;">LBE _____ %</p> <p style="text-align: center;">LSBE _____ %</p> <p style="text-align: center;">DVBE _____ %</p>
--	--

Achievement level(s) will be calculated as the percentage of the total contract amount for which SBEs, LBEs, LSBEs or DVBEs were utilized. The selected Proposer/Bidder's performance on the applicable business enterprise levels will be monitored throughout the duration of the contract, and the business enterprise achievement levels will be calculated at the end of the contract term.

SUBCONTRACTORS:

As applicable, the selected Proposer/Bidder will be required to comply with California's "Subletting and Subcontracting Fair Practices Act" (Public Contract Code Sections 4100 et seq.) (www.leginfo.ca.gov/cgi-bin/calawquery?code=section=pcc&codebody=&hits=20).

Any reduction, increase, or other change to the SBE, LBE, LSBE or DBVE Subcontract amounts without prior written approval of Procurement Services Division (PSD) is considered an Unauthorized Subcontractor Substitution, and the selected Proposer/Bidder may be subject to a penalty. A subcontract dollar value increased or reduced solely as the result of a Change Order issued by LAWA to add or delete from the original scope of work shall not be subject to a penalty for an Unauthorized Subcontractor Substitution.

Proposers/Bidders must list all Subcontractors on LAWA's Subcontractor Participation Plan and include all requested information. Only PSD is authorized to grant either initial approval of Subcontractor(s) or additions, deletions, and substitutions.

PENALTIES:

Violation of the SBE, LBE, LSBE and DVBE Program Rules and Regulations (http://www.lawa.org/welcome_LAWA.aspx?id=146) may result in financial penalties.

At the end of each project, LAWA may withhold as disputed funds 15% of the total dollar value of all subcontract(s) that appear to be in violation of the SBE, LBE, LSBE or DVBE Programs and 15% of the total dollar value of all subcontract(s) where work was performed on the project without, or prior to, approval by LAWA.

REPORTING REQUIREMENTS:

The selected Proposer/Bidder shall submit to LAWA, on a monthly basis, together with its invoice the Subcontractor Utilization Report listing the SBE, LBE, LSBE or DVBE subcontractors utilized during the reporting period. LAWA will not process or pay selected Proposer/Bidder's subsequent invoices if the Subcontractor Utilization Reports are not submitted with the monthly invoice.

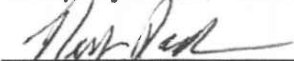
The Contractor must submit the Final Subcontracting Report to PSD within fifteen (15) calendar days after a request for the report by PSD. Failure to comply shall result in the assessment of liquidated damages in the amount of \$100.00 per day by LAWA.

CERTIFICATION

The Bidder/Proposer certifies that it/he/she has read and understood the SBE, LBE, LSBE and DVBE Program Rules and Regulations (located at http://www.lawa.org/welcome_LAWA.aspx?id=146) and further certifies that, if awarded the Contract, it/he/she shall fully comply with LAWA's SBE, LBE, LSBE and DVBE Programs.

Otis Elevator Company, 2701 Media Center Drive, Suite 2, Los Angeles, CA 90065

Company Name, Address and Phone Number



Signature of Officer or other Authorized Representative

10/28/2022
Date

Ross Peare, Regional Sales Manager

Print Name and Title of Officer or Other Authorized Representative

Conveyance Maintenance and Repair LAX and VNY

Project Title

SUBCONTRACTOR PARTICIPATION PLAN

ATTENTION:

You MUST list ALL anticipated subcontractors, regardless of their dollar amount or percent proposed, and regardless of whether they are certified or not.

You MUST fill out ALL applicable fields completely for the Prime and all subcontractors. Failure to provide complete and legible information on this form may result in your firm not receiving full certification credit.

Project Title: Conveyance Maintenance and Repair LAX and VNY

Today's Date: 10/20/2022

BIDDER/PROPOSER COMPANY INFORMATION		BID/PROPOSAL AMOUNT		DESCRIPTION OF PROJECT SERVICES
NAME: Otis Elevator Company		\$38,769,123.41		Provide routine maintenance and repairs on elevators, escalators and moving walks
ADDRESS: 2701 Media Center Drive, Suite 2				
CITY/STATE/ZIP: Los Angeles, CA 90065				
CONTACT NAME: Ross Pearce				
TELEPHONE NO: (312) 852-6843				
ETHNICITY: _____				
GENDER: _____				
FEDERAL TAX ID #: 13-5583389				
EMAIL: Ross.Pearce@otis.com				
CERTIFICATION TYPE: ACDBE DBE DVBE MBE LBE LSBE SBE WBE				
CERTIFYING AGENCY: CITY OF L.A. CALIF DGS CALTRANS METRO SBA				NAICS: 333921, 811490
DVA USWCC NWBOC WBEC-WEST OTHER				
SUBCONTRACTOR COMPANY INFORMATION		\$ PROPOSED	% PROPOSED	DESCRIPTION OF PROJECT SERVICES
NAME: Reg. 4 Elevator Testing		\$376,060.50	0.97%	Will provide all annual Reg4 testing
ADDRESS: P.O. Box 1507				
CITY/STATE/ZIP: Claremont, CA 91711				
CONTACT NAME: Teresa Torres				
TELEPHONE NO: (626) 622-9242				
ETHNICITY: _____				
GENDER: _____				
FEDERAL TAX ID #: 37-1863491				
EMAIL: reg4@elevatortesting.net				
CERTIFICATION TYPE: ACDBE DBE DVBE MBE LBE LSBE <input checked="" type="checkbox"/> SBE WBE				
CERTIFYING AGENCY: CITY OF L.A. CALIF DGS CALTRANS METRO SBA				NAICS: 238290
DVA USWCC NWBOC WBEC-WEST OTHER				
NAME: Lift Solutions, Inc.		\$2,671,192.60	6.89%	Will provide various parts on an as needed basis
ADDRESS: 1806 S. Lake Stevens Road				
CITY/STATE/ZIP: Lake Stevens, WA 98258				
CONTACT NAME: John Castano				
TELEPHONE NO: (425) 249-2507				
ETHNICITY: _____				
GENDER: _____				
FEDERAL TAX ID #: 91-2178517				
EMAIL: Johnc@liftsolutions.net				
CERTIFICATION TYPE: ACDBE DBE DVBE MBE LBE LSBE <input checked="" type="checkbox"/> SBE WBE				
CERTIFYING AGENCY: CITY OF L.A. CALIF DGS CALTRANS METRO SBA				NAICS: 423830
DVA USWCC NWBOC WBEC-WEST OTHER				

Rev 8/9/17

SUBCONTRACTOR COMPANY INFORMATION		PROFILE INFORMATION		\$ PROPOSED	% PROPOSED	DESCRIPTION OF PROJECT SERVICES
NAME: Supreme Facility Services, Inc.		ETHNICITY:		\$895,566.75	2.31%	Will provide services for escalator step cleaning
ADDRESS: 28310 Roadside Drive, Suite 252		GENDER:				
CITY/STATE/ZIP: Agoura Hills, CA 91301		EMAIL: eva@supremefacility.net				
CONTACT NAME: Eva Sotero		FEDERAL TAX ID #: 83-1989959				
TELEPHONE NO: (818) 784-2575						
CERTIFICATION TYPE: ACDBE DBE DVBE MBE LBE LSBE <input checked="" type="checkbox"/> SBE WBE						
CERTIFYING AGENCY: CITY OF L.A. CALIF DGS CALTRANS METRO SBA						NAICS: 561720
DVA USWCC NWBOC WBEC-WEST OTHER						
NAME:		ETHNICITY:				
ADDRESS:		GENDER:				
CITY/STATE/ZIP:		EMAIL:				
CONTACT NAME:		FEDERAL TAX ID #:				
TELEPHONE NO:						
CERTIFICATION TYPE: ACDBE DBE DVBE MBE LBE LSBE SBE WBE						
CERTIFYING AGENCY: CITY OF L.A. CALIF DGS CALTRANS METRO SBA						NAICS:
DVA USWCC NWBOC WBEC-WEST OTHER						
NAME:		ETHNICITY:				
ADDRESS:		GENDER:				
CITY/STATE/ZIP:		EMAIL:				
CONTACT NAME:		FEDERAL TAX ID #:				
TELEPHONE NO:						
CERTIFICATION TYPE: ACDBE DBE DVBE MBE LBE LSBE SBE WBE						
CERTIFYING AGENCY: CITY OF L.A. CALIF DGS CALTRANS METRO SBA						NAICS:
DVA USWCC NWBOC WBEC-WEST OTHER						
NAME:		ETHNICITY:				
ADDRESS:		GENDER:				
CITY/STATE/ZIP:		EMAIL:				
CONTACT NAME:		FEDERAL TAX ID #:				
TELEPHONE NO:						
CERTIFICATION TYPE: ACDBE DBE DVBE MBE LBE LSBE SBE WBE						
CERTIFYING AGENCY: CITY OF L.A. CALIF DGS CALTRANS METRO SBA						NAICS:
DVA USWCC NWBOC WBEC-WEST OTHER						

SUBCONTRACTOR COMPANY INFORMATION		PROFILE INFORMATION		\$ PROPOSED	% PROPOSED	DESCRIPTION OF PROJECT SERVICES				
NAME:		ETHNICITY:								
ADDRESS:		GENDER:								
CITY/STATE/ZIP:		EMAIL:								
CONTACT NAME:		FEDERAL TAX ID #:								
TELEPHONE NO:										
CERTIFICATION TYPE:		ACDBE	DBE	DVBE	MBE	LBE	LSBE	SBE	WBE	
CERTIFYING AGENCY:		CITY OF L.A.	CALIF DGS	CALTRANS	METRO	SBA	NAICS:			
		DVA	USWCC	NWBOC	WBECE-WEST	OTHER				

I certify under the penalty of perjury that the information contained on this form is true and correct and that the firms listed are the subcontractors anticipated to be utilized if this project is awarded to the above prime contractor. I agree to comply with any applicable provisions for additions and substitutions, and I further understand and agree that any and all changes or substitutions must be authorized by the LAWA Procurement Services Division prior to their implementation. An amended Subcontractor Participation Plan is required for any substitution or change to Subcontractors listed on the originally submitted Plan.

Participation Level(s) Proposed by Bidder/Proposer:	_____ %	<input type="checkbox"/> ACDBE
	_____ %	<input type="checkbox"/> DBE
	_____ %	<input type="checkbox"/> DVBE
	_____ %	<input type="checkbox"/> LBE
	_____ %	<input type="checkbox"/> LSBE
	_____ %	<input type="checkbox"/> MBE/WBE
	10.18 %	<input checked="" type="checkbox"/> SBE


SIGNATURE

10/29/2022
DATE

Goal(s) Stated in the Request for Bid/Proposal:	_____ %	<input type="checkbox"/> ACDBE
	_____ %	<input type="checkbox"/> DBE
	_____ %	<input type="checkbox"/> DVBE
	_____ %	<input type="checkbox"/> LBE
	_____ %	<input type="checkbox"/> LSBE
	_____ %	<input type="checkbox"/> MBE/WBE
	10.00 %	<input checked="" type="checkbox"/> SBE

Ross Pearce

Regional Sales Manager

(312) 852 - 6843

PRINT NAME

TITLE

PHONE

Insurance



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
10/12/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must have **ADDITIONAL INSURED** provisions or be endorsed. If **SUBROGATION IS WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER MARSH USA, INC. 20 CHURCH STREET, 8TH FLOOR HARTFORD, CT 06103	CONTACT NAME: PHONE (A/C No. Ext): E-MAIL ADDRESS: Otis.CertRequest@marsh.com	FAX (A/C No.):
CN103059650-Otis-STAND-21-22	INSURER(S) AFFORDING COVERAGE	
INSURED OTIS WORLDWIDE CORPORATION OTIS ELEVATOR COMPANY ONE CARRIER PLACE FARMINGTON, CT 06032	INSURER A: National Union Fire Insurance Co. Of Pittsburgh, PA	NAIC # 19445
	INSURER B: AIU Insurance Co	19399
	INSURER C:	
	INSURER D:	
	INSURER E:	
	INSURER F:	

COVERAGES

CERTIFICATE NUMBER:

NYC-011496552-01

REVISION NUMBER: 1

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC <input type="checkbox"/> OTHER:			3980241 "\$2,000,000 General Aggregate" "Per Project / Location" "\$10,000,000 General Aggregate" "Per Policy"	12/01/2021	12/01/2022	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY			4594517 (AOS) 4594518 (MA) 4594519 (VA)	12/01/2021 12/01/2021 12/01/2021	12/01/2022 12/01/2022 12/01/2022	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$			3980244	12/01/2021	12/01/2022	EACH OCCURRENCE \$ 10,000,000 AGGREGATE \$ 10,000,000 \$
B	<input checked="" type="checkbox"/> WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N	N/A	020608650 (AOS) 020608652 (CA) 065885882 (NY) 020608654 (WI)	12/01/2021 12/01/2021 12/01/2021 12/01/2021	12/01/2022 12/01/2022 12/01/2022 12/01/2022	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Re: Location: Los Angeles World Airports - #203921

Los Angeles World Airports is/are included as additional insured (except workers compensation) when required by written contract and/or agreement. Waiver of Subrogation is included if required by contract.

CERTIFICATE HOLDER

CANCELLATION

Los Angeles World Airports PO Box 92216 Los Angeles, CA 90009	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE <i>Marsh USA Inc.</i>

ADDENDUMS

ADDENDUM NUMBER 1
REQUEST FOR PROPOSALS
FOR CONVEYANCE MAINTENANCE, REPAIR,
MODERNIZATION, MATERIALS AND RELATED SERVICES
AT LAX AND VNY
POSTED ON WWW.RAMPLA.ORG: August 19, 2022

TO ALL PROSPECTIVE PROPOSERS:

This addendum revises the Request for Proposals for Conveyance Maintenance, Repair, Modernization, Materials and Related Services for Los Angeles World Airports posted on RAMPLA.ORG on August 19, 2022.


9/30/22
Date



Gary Abel
Operations & Maintenance Group
Los Angeles World Airports

CERTIFICATE BY RESPONDENT

I acknowledge receipt of this Addendum Number 1 for Request for Proposals for Conveyance Maintenance, Repair, Modernization, Materials and Related Services for Los Angeles World Airports posted on RAMPLA.ORG on August 19, 2022, and that the proposal is in accordance with the information, instructions and stipulations set forth herein.

By _____
Company Otis Elevator Company
Phone (312) 852 - 6843

IMPORTANT: This **signed** addendum acknowledgment (page no. 1 only) must accompany your submittal.

ADDENDUM NUMBER 2
REQUEST FOR PROPOSALS
FOR CONVEYANCE MAINTENANCE, REPAIR,
MODERNIZATION, MATERIALS AND RELATED SERVICES
AT LAX AND VNY
POSTED ON WWW.RAMPLA.ORG: August 19, 2022

TO ALL PROSPECTIVE PROPOSERS:

This addendum revises the Request for Proposals for Conveyance Maintenance, Repair, Modernization, Materials and Related Services for Los Angeles World Airports posted on RAMPLA.ORG on August 19, 2022.

9/30/22

Date



Gary Abel
Operations & Maintenance Group
Los Angeles World Airports

CERTIFICATE BY RESPONDENT

I acknowledge receipt of this Addendum Number 2 for Request for Proposals for Conveyance Maintenance, Repair, Modernization, Materials and Related Services for Los Angeles World Airports posted on RAMPLA.ORG on August 19, 2022, and that the proposal is in accordance with the information, instructions and stipulations set forth herein.

By 
Company Otis Elevator Company
Phone (312) 852-6843

IMPORTANT: This signed addendum acknowledgment (page no. 1 only) must accompany your submittal.

ADDENDUM NUMBER 3
REQUEST FOR PROPOSALS
FOR CONVEYANCE MAINTENANCE, REPAIR,
MODERNIZATION, MATERIALS AND RELATED SERVICES
AT LAX AND VNY
POSTED ON WWW.RAMPLA.ORG: August 19, 2022

TO ALL PROSPECTIVE PROPOSERS:

This addendum revises the Request for Proposals for Conveyance Maintenance, Repair, Modernization, Materials and Related Services for Los Angeles World Airports posted on RAMPLA.ORG on August 19, 2022.


10/6/22
Date _____



Gary Abel
Operations & Maintenance Group
Los Angeles World Airports

CERTIFICATE BY RESPONDENT

I acknowledge receipt of this Addendum Number 3 for Request for Proposals for Conveyance Maintenance, Repair, Modernization, Materials and Related Services for Los Angeles World Airports posted on RAMPLA.ORG on August 19, 2022, and that the proposal is in accordance with the information, instructions and stipulations set forth herein.

By  _____
Company Otis Elevator Company
Phone (312) 852- 6543

IMPORTANT: This **signed** addendum acknowledgment (page no. 1 only) must accompany your submittal.

ADDENDUM NUMBER 4
REQUEST FOR PROPOSALS
FOR CONVEYANCE MAINTENANCE, REPAIR,
MODERNIZATION, MATERIALS AND RELATED SERVICES
AT LAX AND VNY
POSTED ON WWW.RAMPLA.ORG: August 19, 2022

TO ALL PROSPECTIVE PROPOSERS:

This addendum revises the Request for Proposals for Conveyance Maintenance, Repair, Modernization, Materials and Related Services for Los Angeles World Airports posted on RAMPLA.ORG on August 19, 2022.

10/13/22


Date



Gary Abel
Operations & Maintenance Group
Los Angeles World Airports

CERTIFICATE BY RESPONDENT

I acknowledge receipt of this Addendum Number 4 for Request for Proposals for Conveyance Maintenance, Repair, Modernization, Materials and Related Services for Los Angeles World Airports posted on RAMPLA.ORG on August 19, 2022, and that the proposal is in accordance with the information, instructions and stipulations set forth herein.

By  _____

Company Otis Elevator Company

Phone (312) 852-6843

IMPORTANT: This **signed** addendum acknowledgment (page no. 1 only) must accompany your submittal.

ADDENDUM NUMBER 5
REQUEST FOR PROPOSALS
FOR CONVEYANCE MAINTENANCE, REPAIR,
MODERNIZATION, MATERIALS AND RELATED SERVICES
AT LAX AND VNY
POSTED ON WWW.RAMPLA.ORG: August 19, 2022

TO ALL PROSPECTIVE PROPOSERS:

This addendum revises the Request for Proposals for Conveyance Maintenance, Repair, Modernization, Materials and Related Services for Los Angeles World Airports posted on RAMPLA.ORG on August 19, 2022.

10/13/2022


Date



Gary Abel
Operations & Maintenance Group
Los Angeles World Airports

CERTIFICATE BY RESPONDENT

I acknowledge receipt of this Addendum Number 5 for Request for Proposals for Conveyance Maintenance, Repair, Modernization, Materials and Related Services for Los Angeles World Airports posted on RAMPLA.ORG on August 19, 2022, and that the proposal is in accordance with the information, instructions and stipulations set forth herein.

By  _____
Company Otis Elevator Company
Phone (312) 852 - 6843

IMPORTANT: This **signed** addendum acknowledgment (page no. 1 only) must accompany your submittal.

ADDENDUM NUMBER 6
REQUEST FOR PROPOSALS
FOR CONVEYANCE MAINTENANCE, REPAIR,
MODERNIZATION, MATERIALS AND RELATED SERVICES
AT LAX AND VNY
POSTED ON WWW.RAMPLA.ORG: August 19, 2022

TO ALL PROSPECTIVE PROPOSERS:

This addendum revises the Request for Proposals for Conveyance Maintenance, Repair, Modernization, Materials and Related Services for Los Angeles World Airports posted on RAMPLA.ORG on August 19, 2022.

10/18/2022
Date



Gary Abel
Operations & Maintenance Group
Los Angeles World Airports

CERTIFICATE BY RESPONDENT

I acknowledge receipt of this Addendum Number 6 for Request for Proposals for Conveyance Maintenance, Repair, Modernization, Materials and Related Services for Los Angeles World Airports posted on RAMPLA.ORG on August 19, 2022, and that the proposal is in accordance with the information, instructions and stipulations set forth herein.

By  _____
Company Otis Elevator Company
Phone (312) 852-6843

IMPORTANT: This **signed** addendum acknowledgment (page no. 1 only) must accompany your submittal.

ADDENDUM NUMBER 7
REQUEST FOR PROPOSALS
FOR CONVEYANCE MAINTENANCE, REPAIR,
MODERNIZATION, MATERIALS AND RELATED SERVICES
AT LAX AND VNY
POSTED ON WWW.RAMPLA.ORG: August 19, 2022

TO ALL PROSPECTIVE PROPOSERS:

This addendum revises the Request for Proposals for Conveyance Maintenance, Repair, Modernization, Materials and Related Services for Los Angeles World Airports posted on RAMPLA.ORG on August 19, 2022.

10/20/2022
Date



Gary Abel
Operations & Maintenance Group
Los Angeles World Airports

CERTIFICATE BY RESPONDENT

I acknowledge receipt of this Addendum Number 7 for Request for Proposals for Conveyance Maintenance, Repair, Modernization, Materials and Related Services for Los Angeles World Airports posted on RAMPLA.ORG on August 19, 2022, and that the proposal is in accordance with the information, instructions and stipulations set forth herein.

By  _____
Company Otis Elevator Company
Phone (312) 852-6843

IMPORTANT: This **signed** addendum acknowledgment (page no. 1 only) must accompany your submittal.



OTIS

Los Angeles World Airports

PART 3 – FINANCIAL CAPABILITY

**ELEVATOR, ESCALATOR & MOVING
WALKWAY MAINTENANCE**



OTIS


Otis Worldwide Corporation
Annual Report 2020

Giving people
freedom to

connect
and

thrive

in a taller, faster,
smarter world



Creating
lasting value

Moving
2B

people every day with local service,
delivery and support

Serving customer needs in more than
200

countries and territories

Maintaining
~2.1M

customer units

About the cover and inside front cover The Tianjin CTF Finance Centre tapers dramatically as it rises to its full height of 530 meters, an aerodynamic shape that minimizes the wind forces swirling around the tower. The gently undulating glass facade changes color in the sunlight, and at night the tower's crown glows like a diamond. Located in Tianjin's Binhai District, the mixed-use tower features 103 Otis elevators and escalators, including 20 high-speed elevators that operate at speeds up to 10 meters per second.

An essential and resilient force in the industry we created and lead, Otis is now also newly independent – free to invest directly in our people; in accelerating the innovation and digitalization of our products, services and way of doing business; and in every way elevating the passenger experience and furthering our unmatched scale and reach.

This is our story.



“This first year has shown what an independent Otis can do.”

Judy Marks
President & Chief Executive Officer

Dear Shareholders,

In this, our first year as a newly independent company, we delivered strong performance thanks to the focus, agility and resilience of our colleagues at every level of the organization. These are the same qualities that will keep us at the forefront of our industry and an essential part of people’s lives in the years ahead.

We successfully executed a complex separation, innovated quickly to meet the critical needs of our customers and passengers, and created significant value for you, our shareholders. All this during a pandemic that tested all of us.

I could not be prouder of our 69,000 Otis colleagues – or more appreciative of their passion and commitment to the safe, reliable and dependable movement of passengers.

FINANCIAL PERFORMANCE AND BUSINESS HIGHLIGHTS

Despite the disruptions of 2020, we demonstrated our ability to deliver on our near-term commitments while executing our long-term strategy as an independent, publicly traded company.

We continued to grow New Equipment share, expand Service margins, increase adjusted earnings and build backlog while generating strong free cash flow and paying healthy dividends to our shareholders. Net sales for the year were \$12.8 billion and adjusted earnings per share was \$2.52.¹

We also grew the Service portfolio by 2% to approximately 2.1 million customer units, roughly 25% larger than our closest competitor.² The

core of our business model, Service represents approximately 80% of our profit and provides a reliable source of recurring revenue. We remain intensely focused on growing the number of customers we serve, modernizing the world’s elevators and escalators, and delivering enhanced customer value.

New Equipment installations contribute to portfolio growth as they convert into maintenance contracts, and in 2020, we grew share by approximately 60 basis points, with share gain in all major regions.²

Our teams achieved these results while managing our separation after nearly a half-century as part of a corporate conglomerate – a massive undertaking under unprecedented conditions that required disentangling facilities; transferring knowledge; moving more than 1,500 total processes, contracts and systems; and standing up new functions, including Tax, Treasury, Investor Relations and Payroll.

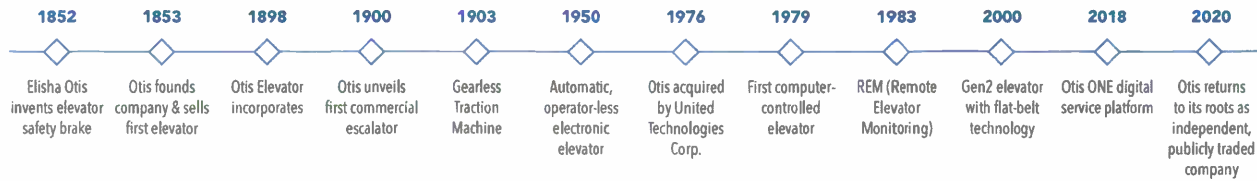
GLOBALLY LOCAL

In our industry scale and reach matter, and one of our greatest strengths is our ability to serve customers in more than 200 countries and territories. We have 33,000 experienced mechanics in the field, trained to service our own equipment and that of other manufacturers. Our local workforce can be found in major metropolitan areas as well as community neighborhoods. This presence makes us especially well-equipped to understand the distinct needs of our diverse customers the world over.

¹ Please refer to the Reconciliation of Non-GAAP Measures to Corresponding GAAP Measures in the financial section for additional information.

² Based on internal estimates.

Our History



For example, in 2020 we released our new Gen2® Prime elevator to address the entry-level, low-rise segment in India and other emerging markets. This elevator is the latest member of our iconic Gen2 family of elevators, which surpassed 1 million units sold in 2020, making the Gen2 our bestselling elevator ever.

Our global scale also allows us to leverage our production capacity, supply-chain resilience, buying power and back-office systems to improve productivity and benefit our customers. The advantages of scale were especially evident when the coronavirus brought many aspects of life to a standstill. We mobilized our global supply chain to ensure components reached and met global customer demand. Our field professionals and colleagues in Otis manufacturing facilities joined other essential workers across various industries to ensure that critical work was completed and vital services continued uninterrupted.

In China, our teams mobilized to support the emergency expansion of the Shanghai Public Health Clinical Center, installing the elevators for the new facility in a matter of days. In St. Petersburg, Russia, our engineers joined the factory assembly line, filling in for operators on sick leave to keep production going. Our customers let us know how much they appreciated the heroic efforts of all our team members to keep them safe and moving during the pandemic.

Being recognized as an essential service inspired a sense of unity. It empowered all of us. It also reaffirmed the strength of our entrepreneurial, people-first, ideas-can-come-from-anywhere culture. It is how we are fulfilling our mission as a world-class, customer-centric, service-oriented company.

RAPID, MEANINGFUL INNOVATION

We are living during a time when change is perpetual, pervasive and exponential. To stay ahead, we are accelerating the pace of our own innovation, focusing on areas like data analytics, machine learning and cloud computing to support the evolution of our products from mainly mechanical systems to systems that are more electronic, digitally native and connected.

Our investments in research and development, along with investments in digital and strategic initiatives, have increased by approximately 60% since 2015. Among our 1,300 R&D engineers around the world is a growing number of software engineers, data scientists and experts in the design of user interface (UI) and user experience (UX).

Otis ONE™, our digital service platform, is an exciting example of innovation that has emerged from these investments. Leveraging the Internet of Things, Otis ONE uses cloud-based algorithms to aggregate and analyze real-time performance data to help predict and prevent shutdowns. At the end of 2020, more than 100,000 customer units were equipped with Otis ONE, bringing our total connected units

to approximately 540,000. We expect adoption rates to accelerate over the next several years.

We are also upgrading our smart manufacturing capabilities. Our new escalator factory in Haining, China, incorporates the latest Industry 4.0 technologies to enhance product quality and operational efficiency.

Backed by a robust engineering organization, our teams were able to quickly innovate health solutions to support safe reopening strategies and operations in the coronavirus era. These included touchless elevator technologies, purification products and new traffic-flow solutions for social distancing. We also commissioned an academic study to investigate how elevator airflow affects potential exposure to COVID-19. Researchers found that the significant amount of air exchange present in most elevators, combined with simple mitigation strategies, puts an elevator ride on the lower end of the exposure spectrum.

ENVIRONMENTAL, SOCIAL AND GOVERNANCE

At Otis, financial performance and corporate responsibility go hand in hand. That is why, as a newly independent company, we continue to build out our Environmental, Social and Governance platform. We established an executive-level ESG Council and a cross-functional working group to drive our efforts forward. Given the dynamic and evolving global landscape in which we operate, we are engaging our stakeholders to prioritize and address our top material issues. This information will help us formulate meaningful, long-term goals and define actions that enable us to contribute to a taller, faster, smarter world.

DIVERSITY, EQUITY AND INCLUSION

Upon joining Otis, I was inspired to find a company long committed to diversity, equity and inclusion. Like The Otis Absolutes, our shared beliefs – *we are many voices, we are better together, we believe in us* – are more than just words. Yet the events of 2020 made us all realize that even here at Otis, there is still work to be done to become the company

we want to be. After careful deliberation by our leadership, we released Our Commitment to Change, publicly committing ourselves to specific actions to ensure Otis is a place where every voice feels safe, welcome and heard.

We recognized that this important work also demands that we reach beyond Otis. With our Made to Move Communities™ program, we aim to inspire student teams from around the world to apply creative, technology-based solutions to eliminate mobility challenges in underrepresented communities.

We are proud that Otis became the first company in our industry to join the Paradigm for Parity® coalition, pledging to achieve gender parity in our executive ranks globally by 2030.

OUR OUTLOOK

We see great things ahead for our company. In the face of one of the most challenging and unpredictable years imaginable, we laid the foundation for sustained, resilient future growth in the more than \$75 billion annual global elevator industry.

We are not just an essential business but an essential part of people's lives.

The future is ours now. In a time of smart cities and the innovators that make them possible, Otis moves forward as an agile, independent and focused enterprise – globally local as we pursue tremendous opportunity in an increasingly connected world.

Thank you for joining us on this journey and for your continuing support.

Sincerely,



Judy Marks

President & Chief Executive Officer



Message from the Executive Chairman

This is an exciting time to be part of Otis. Newly independent, we are bringing forward a rich legacy of innovation and service excellence. Taking a company with a storied history into a new phase can be difficult and exhilarating, but to do so in the face of the extraordinary challenges 2020 brought to the world, and do it well, is a remarkable achievement.

The management team and everyone who wears the Otis badge showed tremendous grit and resilience in our first year. It's a privilege to work alongside this team and the diverse, talented Board we assembled.

Otis is a standout among our global industrial peers. For example, nearly 75% of our sales come from outside the United States, and 60% of our team is based in the field, closest to our customers. The pace of innovation is astounding in terms of customer solutions and technology for our teams. But the real differentiator is how we embrace The Otis Absolutes. These core values guide us in all our decision making.

I believe wholeheartedly in the ability of Otis to drive sustainable value creation and look forward to every step of the journey ahead.

Christopher J. Kearney
Executive Chairman

The Otis **Absolutes**

We believe that being the industry leader demands that we hold ourselves to the highest standards of safety, ethics and quality. The Otis Absolutes are the core values that guide us in everything we do, every day, whatever our role.

Safety

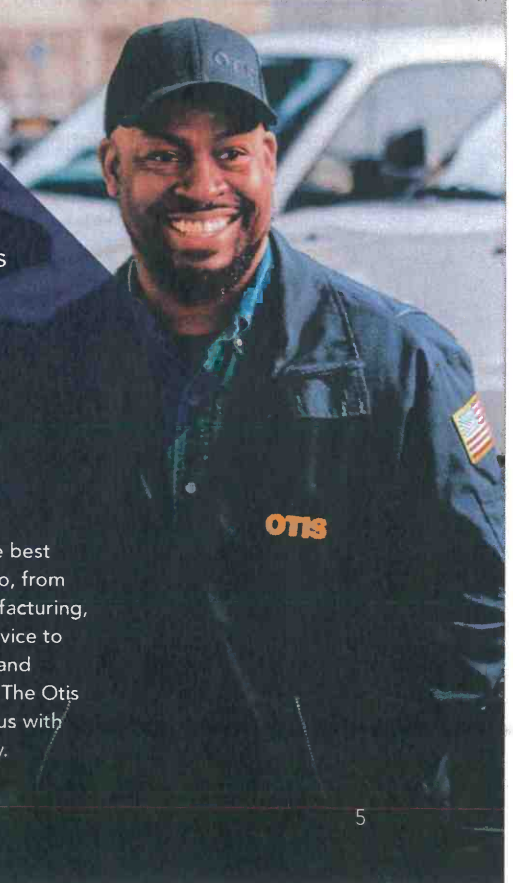
We are in the life-safety business – and never take shortcuts. The well-being of our colleagues, customers and the riding public is always our first priority.

Ethics

People trust us because they know we do business the right way. This spirit of integrity informs everything we do. It is simply who we are.

Quality

We strive to be the best in everything we do, from engineering, manufacturing, installation and service to selling, marketing and financial reporting. The Otis name is synonymous with outstanding quality.



Aligning our global reach

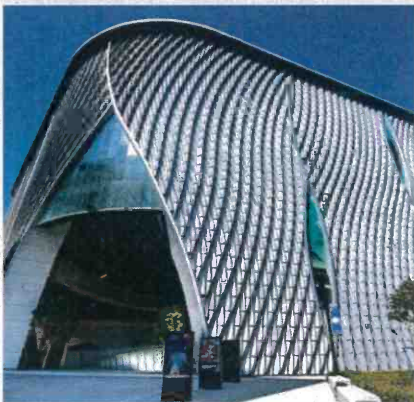
MOVING PEOPLE THE WORLD OVER

With customers in more than 200 countries and territories, we are globally recognized for our quality, safety and reliability. You will find us in the world's most iconic structures, as well as residential and commercial buildings, transportation hubs, and everywhere people are on the move. And whatever the post-pandemic world looks like, we embrace the view that diverse, resilient, livable cities remain our best hope for the future – as centers of community, innovation and economic opportunity.

with your local connections

A part of people's daily lives

We are local, everywhere. We operate through 1,400 branches and offices and maintain a local workforce in both metropolitan areas and community neighborhoods. We understand that trust is built on the knowledge and experience that can only be gained on the ground. Our 33,000 service mechanics are in the field talking with customers every day, making connections. We are their local elevator company.



Xiqu Centre: A stunning gateway into Hong Kong's new cultural district

With its dramatic curvilinear facade and reinterpretation of the Moon Gate found in traditional Chinese gardens, the Xiqu Centre serves as a stunning gateway to Hong Kong's West Kowloon Cultural District, the city's new precinct for arts and culture. In keeping with its green design, the building features a dozen energy-efficient Gen2 elevators from Otis. Gen2 systems with ReGen® drives are capable of reducing energy consumption by 75% under normal operating conditions compared to conventional systems without regenerative technology.

Photo courtesy of West Kowloon Cultural District Authority

4.4B
people living in cities*

6.7B
people projected to live
in cities by 2050*

85%
Otis colleagues located
outside U.S.

*United Nations World Urbanization Prospects 2018



Transforming daily life for urban commuters in Panama

The Panama Canal remains among the world's most impressive infrastructure achievements. Now Panama has another landmark project: Central America's first metro system, built to relieve traffic congestion in Panama City and the western part of the country. The transit authority tapped Otis to supply nearly 300 escalators and more than 120 elevators to ferry passengers from street level to the train platforms at 30 stations along Lines 1 & 2 of the new metro system. We developed a special interface to integrate the Otis EMS Panorama™ elevator management system with the metro's own monitoring and control system to provide a single view of all operating systems, including the elevators and escalators.

Driving remarkable results around the globe

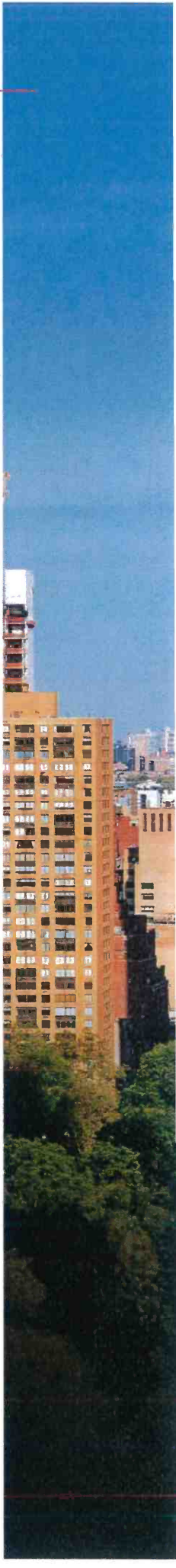
Across the commercial, residential and infrastructure segments, we understand the unique challenges of every project and are able to marshal our global resources and expertise to help ensure their success. Our Global Major Projects team manages the most complex projects, collaborating with architects, developers, general contractors and building owners to achieve their vision. Supporting them are 1,300 experienced Otis R&D engineers, experts in understanding and solving for site-specific challenges like building sway and stack effect. And we deploy our most seasoned field professionals, many with decades of hands-on experience, to oversee the most demanding installations.

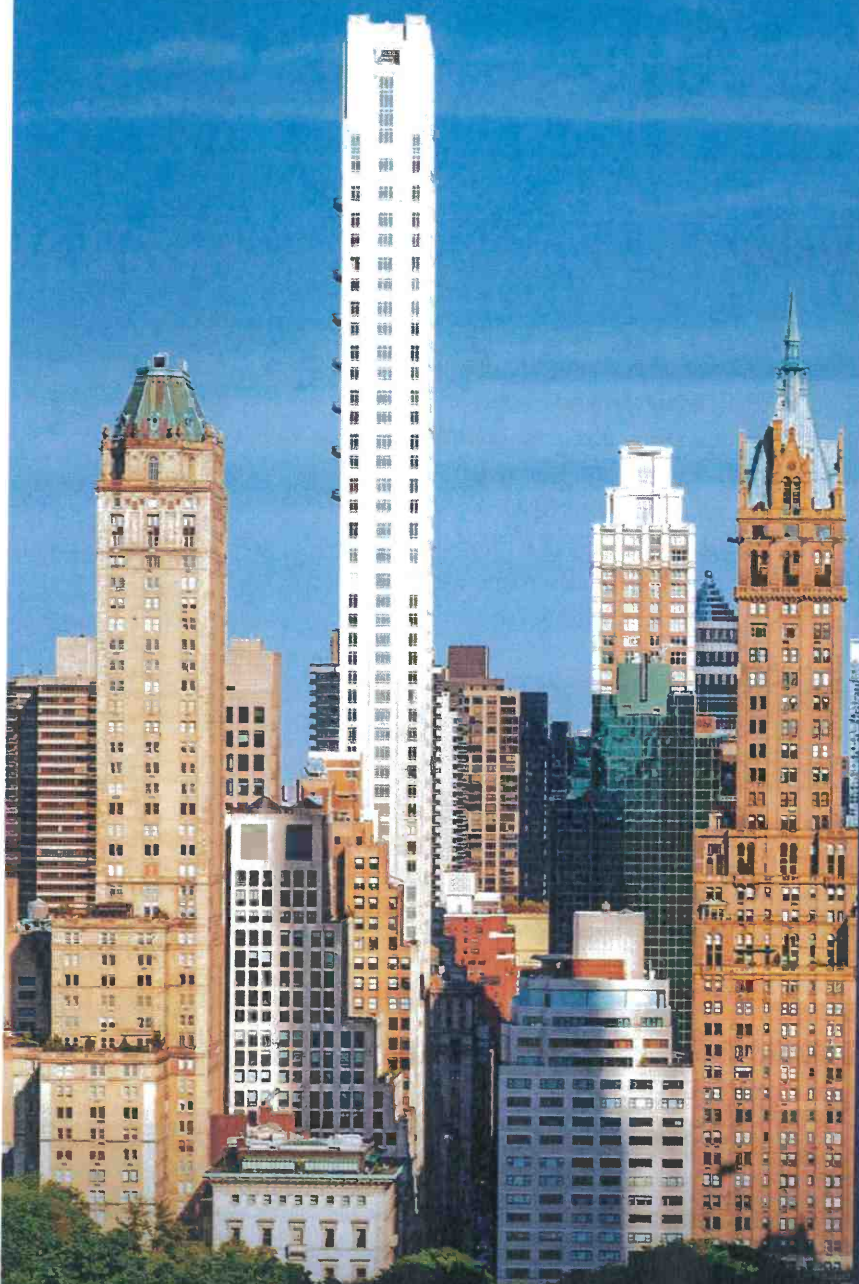
Otis sales by segment		Otis adjusted operating profit by segment*	
58%	42%	83%	17%
Service	New Equipment	Service	New Equipment

*Please refer to the Reconciliation of Non-GAAP Measures to Corresponding GAAP Measures in the financial section for additional information.

Alto Tower: 'Liberated architecture' transforms La Défense skyline

Located in La Défense business district in Paris, Alto Tower presents a daring silhouette as it rises 150 meters above street level, gradually flaring outward in graceful curves – from 600 square meters at its base to 1,800 square meters at the top. Its facade of glass scales adds to this sense of fluidity – what its architect calls “liberated architecture.” The contractor turned to Otis to custom engineer an elevator system best suited to the building’s unique shape. Our solution: eight double-deck SkyRise® elevators, configured to take passengers directly to their destination without stopping at a transfer floor. On entering the building, passengers log their destination using our Compass® 360 destination dispatch system, which assigns them to the elevator that will get them to their destination the fastest. The tower also includes two single SkyRise elevators, two Gen2 elevators and two Otis escalators – used to reach the upper cab of the double-deck units.





**The super-slim skyscrapers
redefining urban skylines**

New York City's 520 Park Avenue belongs to a new generation of super-slim skyscrapers that are transforming urban skylines around the world – from Moscow to London, from Melbourne to Bangkok and Hong Kong. A 64-story luxury residential tower clad in limestone, 520 Park Avenue features two custom-built Otis elevators. One is an elegantly outfitted passenger elevator paneled in French walnut. The other is a double-deck elevator – the lower cab reserved for passenger use, the upper cab programmed for service. Given the building's small footprint, a separate hoistway for a service elevator would have occupied too much precious space – a problem we solved with the unique double-deck configuration.

Our regions: Moving the world

Our portfolio mix differs by geography, reflecting the unique customer needs, infrastructure requirements and economic factors in each region. The more mature markets within Europe, the Middle East and Africa (EMEA), and the Americas account for the largest portion of our Service sales. New Equipment sales are higher in the rapidly urbanizing markets of Asia.



“Customers choose Otis for our quality, safety, reliability and unmatched expertise. We deliver a consistent customer experience across the world, whether you’re engaging Otis teams in New York, New Delhi or anywhere in between. It is what sets us apart.”

Robin Fiala
Vice President, Sales & Marketing

Linking our innovation

Smarter, faster, more connected

We are applying technology to help the world grow taller, faster and smarter. In doing so, we are connecting people not just physically – to one another and the places we go – but digitally as well. The data we gather connects to a building's digital ecosystem and enables us to move people seamlessly, conveniently and without interruption.

Our Compass 360 intelligent dispatching system knows where passengers are going before they step into the elevator. We can group passengers by their destinations and eliminate extra stops, making arrival times 50% faster during peak travel periods. Our eCall™ Plus smartphone app, with wireless technology, creates a fast and touchless passenger experience.

Our Otis ONE digital service platform automatically collects elevator data and uses artificial intelligence to help predict and prevent service disruptions and shutdowns – to keep everyone moving. This year we deployed and connected approximately 100,000 Otis ONE units, delivering real-time, actionable information used by our experts to drive future improvements.



“Our goal is to create smart elevators with a frictionless passenger experience – so intuitive you don’t need to think about it: elevators that recognize you, know where you are going, understand the changing traffic patterns in the building, and adjust how we assign and park elevators to provide zero wait time.”

Pooja Dewan
Vice President and Chief Data & Analytics Officer

with your freedom

INVENTING THE FUTURE, TODAY

Our industry continues to be defined by Otis-inspired innovations. Our investments in research and development, along with investments in digital and strategic initiatives, have increased by approximately 60% since 2015. And we count among our 1,300 R&D engineers a growing number of software engineers, data scientists and experts in user interface (UI) and user experience (UX) design.

In 2020, amid the COVID-19 pandemic, our engineers quickly developed and advanced solutions to help customers prepare for the safe reopening and maintenance of their buildings, including touchless elevator technologies, purification products, and traffic-flow analysis and solutions to support social distancing. We also commissioned an independent academic study on elevator airflow, how it affects the risk of coronavirus transmission among passengers and how to mitigate those risks with science-based safety protocols. The study concludes that a short elevator ride represents a relatively low risk of exposure compared to several everyday activities – less than outdoor dining and comparable to a trip to the supermarket – when simple mitigation strategies are in place, including all passengers properly wearing a surgical-style mask and the installation of a common type of air purification system. To learn more, visit www.otis.com/airflowstudy.

~60%
increase in R&D and
strategic investments
since 2015

4X
increase in U.S.
patents granted
in 2020 vs. 2015

>2X
more product
launches in
2020 vs. 2018

Foxwoods Resort Casino pilots elevator voice and gesturing technologies

Otis is partnering with key customers to pilot innovative touchless solutions. As part of its focus on a safe reopening plan, Connecticut's Foxwoods Resort Casino in the United States teamed with Otis to pilot the use of voice technology and gesturing to summon elevators and reduce guest touchpoints. Users can simply state their destination or wave their hand to call the elevator. Otis is also working with other customers to pilot and mature these technologies for use in apartment buildings, hospitals and other settings.



Applying the latest technologies in exciting new ways

Buildings today are sophisticated digital ecosystems, equipped with building management systems to control various functions, from lighting and HVAC systems to security access. Using cloud-based API (Application Programming Interface) technology, customers can now integrate our elevator service data into their building management system, giving facility managers a single, holistic view of all building information. Our customers are collaborating with us to use APIs in ways that benefit their tenants and guests, and make their buildings more efficient. Republic Plaza in Singapore recently integrated our eCall API with its smart building app to allow tenants to summon the elevator as they approach. This touchless solution lets passengers move safely and seamlessly through the building. Our new Otis Integrated Dispatch™ API allows autonomous service robots to use a building's elevators without interfering with passenger traffic – an ideal solution for hospitals, hotels and commercial buildings. As a subscription service, APIs also provide a new source of recurring revenue for Otis.



Industry 4.0 escalator factory opens in China

Our new factory in Haining, China, meets Industry 4.0 standards, incorporating intelligent manufacturing and advanced automation to produce high-performance escalators and moving walkways. Innovative digital technologies include 3D modeling, custom engineering and real-time quality management to enhance product quality and operational efficiency.

Apps that help our service mechanics excel

We have put the latest digital technology in the hands of our service mechanics to deliver an even higher level of personalized service while driving productivity and growth. Their iPhones are loaded with an expanding suite of Otis-built proprietary apps, giving them instant access to product data, maintenance history, diagnostic tools, even real-time help for solving difficult problems – everything they need to streamline administrative work, improve customer responsiveness and quickly get units back into service.



Otis ONE View
Enables remote access and real-time elevator service data



Upgrade App
Generates leads, provides on-the-spot quotes for small upgrades and repairs



Tune App
Measures noise and vibration for ride quality and adjustment



Virtual Expert App
Gets real-time expert help via video link



Parts App
Orders spare parts onsite for faster return to service



Survey App
Provides customers with detailed reports on their equipment



Support App
Offers instructional videos and guides for quick onsite fixes



Service App
Diagnoses equipment status wirelessly



“When an elevator goes down, that’s lost productivity for our customer. The apps help me get the unit up and running that much faster.”

Alex LeBlanc
Service Mechanic, Otis North America



Otis employees, including members of Elevar, the Employee Resource Group formed to support Otis Brazil's LGBTQ+ community, participated in São Paulo's annual Pride Parade.

Our people keep the world on the move

A PEOPLE-FIRST CULTURE

We are the company that made the modern vertical city possible and transformed how people live and work. Now we aspire to something bigger and bolder: to give people freedom to connect and thrive in a taller, faster, smarter world.

It takes a unique culture to become this kind of world-class, customer-centric, service-oriented company: a people-first culture that celebrates imagination, recognizes that we are better together and strives to be the best. We are also committed to the highest standards of safety, ethics and quality – the core values that guide us in all we do every day.

Our people define us. That is why we say with humble pride: We are Otis.



"The innovation culture here encourages new ideas and smart risk-taking. It's exciting."


Apple Guo
Senior Manager, Innovation and Research,
Shanghai Lead Design Center, Otis China

Better together: Employee Resource Groups at Otis

Our Employee Resource Groups (ERGs) are vital in helping us nurture a culture of diversity, equity and inclusion at Otis. These employee-led groups provide mentoring, career guidance and mutual support for colleagues who share the concerns and affinities of a common race, ethnicity, gender, gender identity, sexual orientation, disability, generation, veteran status and more.

FORWARD, our first global ERG, was created to advocate for women in our field operations. Momentum came together to support our Black and African American colleagues and to advance a diverse and inclusive workplace. Elevar represents Otis Brazil's LGBTQ community. Our ERGs also play an important role in our ability to attract, retain and develop diverse talent. Those mentioned here represent just a sampling of our ERGs around the world.

To learn more about diversity, equity and inclusion at Otis, visit www.otisworldwide.com/annualreport2020.



34% of our executives are women

26% of our executives are ethnically/racially diverse*

56% of the Board are women, ethnically/racially diverse or both

*Inclusive of U.S.-based executives only

Declaring Our Commitment to Change

The events of 2020 reminded us all that racism and social injustice remain among society's most urgent problems – and that even here at Otis, more needs to be done if we are to become the company we want to be: An equal-opportunity employer of choice for people of different perspectives and experiences, cultures, genders, races, and generations. A business whose workforce mirrors the diversity of our customers and the communities where we live and work. A place where every voice feels safe, welcome and heard.

With this in mind, our Executive Leadership Team came together to create Our Commitment to Change, a six-point framework to identify and prioritize the actions we need to take to ensure we live up to these ideals – and how we will measure our progress and hold ourselves accountable. These commitments require us to reach beyond Otis into the communities where we live and work.

We are amplifying our ongoing commitment to STEM and vocational education as we join with community and business partners to invest in and build a diverse talent pipeline. We are making social justice and racial equity an integral part of our community giving, volunteerism and external reporting programs. In 2020, we forged new, meaningful relationships with a diverse set of nonprofits and nongovernmental organizations, including the Thurgood Marshall Scholarship Fund, the Urban League, UNICEF, The Asia Foundation, the China Women's Development Foundation and Singapore's Serving People with Disabilities.

We are also accelerating anti-racism, unconscious bias and inclusion learning for our colleagues at all levels and throughout their Otis careers. And to better support our colleagues in these challenging times, we are promoting and expanding mental health and well-being benefits.

100%

gender parity in
our executive ranks
by 2030

50%

total global giving
to STEM programs
by 2025

>20%

U.S. supplier spend
awarded annually to
diverse suppliers



“Our employees can tap into expanded health insurance coverage, including emotional support services, but equally important, we must lead by example and create an open company culture. By revealing our own personal vulnerabilities, we send a clear signal to all employees that it is OK to talk about challenges and work on them as a team.”

Stéphane de Montlivault
President, Otis Asia Pacific

Creating a more sustainable business

while strengthening our communities

Solar panels at our factory in Florence, South Carolina, generate 1.8 million kilowatt hours of electricity annually, nearly 25% of the 500,000-square-foot facility's annual power requirements.

As a responsible business, we are assessing science-based sustainability targets that align with the Paris climate agreement and the U.N. Sustainable Development Goals that are most relevant to our business and our communities.

Connect and Thrive

We are setting our vision in motion, focusing on what matters most to our passengers, customers, colleagues and society. With foresight and purpose, we connect at a human level and allow people to thrive in a more sustainable and hopeful world that we build together. Our focus:

Environment & Impact

We constantly strive to reduce the environmental impact of our products, services and operations – improving the performance of our business as well as our customers' businesses.

Health & Safety

We prioritize the health and safety of our colleagues, contractors and the riding public – through the equipment and materials we use and the practices that guide us every day.

People & Communities

We foster a culture that embraces many voices and points of view, and we support our people with training and professional development. We proactively engage the communities around us by supporting causes and projects that make a tangible difference.

Governance & Accountability

We uphold the highest standards of ethics, conducting business with integrity and honoring our agreements. We ensure that our suppliers embrace these same principles.

>30%
reduction in factory
greenhouse gas
emissions since 2015

99+%
of all industrial
waste generated
by factory operations
currently recycled

>40%
water usage reduction
in our factories from
a 2015 baseline

50%
reduction of Scope 1
and Scope 2 greenhouse
gas emissions in
2030 vs. 2019

100%
of our factories to be
eligible for zero-waste-
to-landfill certification
by 2025

100%
of our factories certified
ISO 14001 by 2025

Safety rates

There is nothing more important to us than safety. While not the only measurement of program success, our total recordable incident rate (TRIR) and lost-time incident rate (LTIR) show continuing improvement and reflect what we believe are some of the best safety rates among peer companies.

TRIR down

13% 2015 – 2020

LTIR down

35% 2015 – 2020

Deep commitment to global citizenship

At Otis, we advocate on a range of social issues for inclusivity and sustainable mobility solutions in our communities, with a strong focus on social investments in STEM education. Our colleagues share a long history of supporting our local communities around the world, and we encourage and support their volunteerism. We look forward to doing our part to further shape the world for generations to come.

Made to Move Communities

Made to Move Communities is our new signature program that inspires student innovators to use STEM skills to propose solutions for real-world mobility and access challenges. Strengthened by connections with Otis mentors, students in the program's first year are focusing their research on inclusive mobility solutions and have taken on the roles of product engineers responsible for identifying and developing solutions to eliminate mobility barriers in communities most affected by the COVID-19 pandemic.

The 2020 – 2021 program is being conducted in 14 schools across nine countries. The program's goals align with Our Commitment to Change as we expand upon our ongoing commitment to STEM and collaborate with our business partners and educators to build a diverse talent pipeline.



Otis volunteers in St. Petersburg, Russia, gave students participating in the Made to Move Communities program a factory tour to help inspire the students to develop and think through new approaches to mobility solutions.



"I love that there is opportunity for us to learn from each other – that's what makes this program unique. Our volunteers share their knowledge and experience while the students bring their ideas and gain a practical understanding of what it means to be part of a project team at a global company."

Maria Khrustaleva

Program Lead and Manager, Corporate Branding & Social Media, Otis Russia



Stepping up during the pandemic

Otis contributed to the World Health Organization's COVID-19 Response Fund to support the critical work going on around the world to track the spread of the virus; to ensure that patients get the care they need and frontline workers get essential supplies; and to accelerate efforts to develop vaccines, tests and treatments. To learn more about how our colleagues around the world stepped up in exceptional and inspiring ways, visit www.otisworldwide.com/annualreport2020.

Financial results

20	Five-Year Summary
21	Management's Discussion and Analysis of Financial Condition and Results of Operations
42	Cautionary Note Concerning Factors That May Affect Future Results
44	Management's Report on Internal Control over Financial Reporting
45	Report of Independent Registered Public Accounting Firm
48	Consolidated Statements of Operations
49	Consolidated Statements of Comprehensive Income
50	Consolidated Balance Sheets
51	Consolidated Statements of Changes in Equity
52	Consolidated Statements of Cash Flows
53	Notes to Consolidated Financial Statements
100	Selected Quarterly Financial Data
101	Performance Graph
102	GAAP to Non-GAAP Reconciliations

Five-Year Summary

(dollars in millions, except per share amounts;
shares in millions)

	2020	2019	2018	2017	2016 (unaudited)
For The Year					
Net sales	\$ 12,756	\$ 13,118	\$ 12,915	\$ 12,323	\$ 11,886
Net income ¹	1,056	1,267	1,210	809	1,397
Net income attributable to common shareholders ¹	906	1,116	1,049	636	1,197
Basic earnings per share—Net income attributable to common shareholders ²	2.09	2.58	2.42	1.47	2.76
Diluted earnings per share—Net income attributable to common shareholders ²	2.08	2.58	2.42	1.47	2.76
Cash dividends per common share	0.60	—	—	—	—
At December 31,					
Total assets ³	\$ 10,710	\$ 9,687	\$ 9,135	\$ 9,089	\$ 8,584
Total debt ⁴	5,963	39	28	18	18

¹ 2020 amounts include the impact of interest expense on debt, incremental standalone public company costs and non-recurring Separation-related costs. 2019 reflects the absence of unfavorable tax charges incurred in 2018, offset by \$69 million of non-recurring costs associated with Otis' separation from UTC. 2018 amounts include a tax charge of \$143 million that will become due when previously reinvested earnings of certain international subsidiaries are remitted. 2017 amounts include a \$507 million tax charge, representing the U.S. Tax Cuts and Jobs Act ("TCJA") related adjustments. This amount relates to U.S. income tax attributable to previously undistributed earnings of Otis' international subsidiaries, equity investments and the revaluation of the U.S. deferred income taxes.

² On April 3, 2020, the date of consummation of the Separation, 433,079,455 shares of the Common Stock, were distributed to UTC shareholders of record as of March 19, 2020. This share amount is being utilized for the calculation of basic and diluted earnings per share for all periods presented prior to the Separation.

³ The increase in total assets as of December 31, 2020 primarily relates to the impact of foreign exchange rates on foreign-denominated assets and cash provided by operating activities in excess of cash used in investing and financing activities. The increase in total assets as of December 31, 2019 primarily relates to the adoption of Accounting Standards Update ("ASU") No. 2016-02—Leases (Topic 842), which Otis adopted as of January 1, 2019.

⁴ The increase in Total Debt as of December 31, 2020 primarily reflects the issuance of \$6.3 billion in debt during the year ended December 31, 2020.

Management's Discussion and Analysis of Financial Condition and Results of Operations

BUSINESS OVERVIEW

We are the world's leading elevator and escalator manufacturing, installation and service company. Our Company is organized into two segments, New Equipment and Service. Through our New Equipment segment, we design, manufacture, sell and install a wide range of passenger and freight elevators, as well as escalators and moving walkways for residential and commercial buildings and infrastructure projects. Our New Equipment customers include real-estate and building developers and general contractors who develop and/or design buildings for residential, commercial, retail or mixed-use activity. We sell our New Equipment directly to customers, as well as through agents and distributors.

Through our Service segment, we perform maintenance and repair services for both our own products and those of other manufacturers and provide modernization services to upgrade elevators and escalators. Maintenance services include inspections to ensure code compliance, preventive maintenance offerings and other customized maintenance offerings tailored to meet customer needs, as well as repair services to address equipment and component wear and tear and breakdowns. Modernization services enhance equipment operation and improve building functionality. Modernization offerings can range from relatively simple upgrades of interior finishes and aesthetics to complex upgrades of larger components and sub-systems. Our typical Service customers include building owners, facility managers, housing associations and government agencies that operate buildings where elevators and escalators are installed.

We serve our customers through a global network of approximately 69,000 employees. These include sales personnel, field technicians with separate skills in performing installation and service, as well as engineers driving our continued product development and innovation. We function under a centralized operating model whereby we pursue a global strategy set around New Equipment and Service because we seek to grow our maintenance portfolio, in part, through the conversion of new elevator and escalator installations into service contracts. Accordingly, we benefit from an integrated global strategy, which sets priorities and establishes accountability across the full product lifecycle.

For additional discussion, refer to the "Business Overview" section in our Form 10-K.

Separation from United Technologies Corporation

On April 3, 2020, the Separation of each of Otis and Carrier Global Corporation ("Carrier") from United Technologies Corporation, subsequently renamed Raytheon Technologies Corporation ("UTC" or "RTX", as applicable), into separate independent publicly-traded companies was completed through the distribution of 100% of the outstanding common stock of each of Otis and Carrier to holders of UTC common stock as of the close of business on the record date of March 19, 2020. UTC distributed 433,079,455 shares of Otis' common stock, par value \$0.01 per share ("Common Stock") in the Distribution, which was effective at 12:01 a.m. Eastern Time, on April 3, 2020. As a result of the Distribution, UTC shareholders of record received 0.5 shares of Common Stock for every share of UTC common stock. As a result of the Distribution, Otis became an independent, publicly-traded company and its Common Stock is listed under the symbol "OTIS" on the New York Stock Exchange ("NYSE").

Prior to the Separation on April 3, 2020, our historical financial statements were prepared on a standalone combined basis and were derived from the consolidated financial statements and accounting records of UTC. For the period subsequent to April 3, 2020, our financial statements are presented on a consolidated basis as the Company became a standalone public company. The Consolidated Financial Statements have

been prepared in accordance with accounting principles generally accepted in the United States of America.

As a result of the Separation during the year ended December 31, 2020 and our becoming an independent, publicly-traded company, we have incurred non-recurring Separation-related costs and ongoing costs consisting primarily of employee-related costs, costs to establish certain standalone functions and information technology systems, professional services fees, equity award conversions, tax-related items, transaction-related costs and other services. We believe our cash flows from operations will continue to be sufficient to fund any incremental corporate expenses.

We entered into a transition services agreement ("TSA") with our former parent UTC and Carrier on April 2, 2020, in connection with the Separation pursuant to which RTX provides us with certain services and we provide certain services to RTX for a limited time to help ensure an orderly transition following the Separation. We received and continue to receive services for information technology, technical and engineering support, application support for operations, general administrative services and other support services. Prior to the Separation, costs for these services were allocated from UTC and included in the Company's historical operating expenses and cash flow. For additional discussion, see Note 5 "Related Parties" to the Consolidated Financial Statements.

In connection with the Separation, we entered into a tax matters agreement ("TMA") with our former parent UTC and Carrier on April 2, 2020, that governs the parties' respective rights, responsibilities and obligations with respect to tax matters (including responsibility for taxes, entitlement to refunds, allocation of tax attributes, preparation of tax returns, control of tax contests and other tax matters).

Subject to certain exceptions set forth in the TMA, the Company generally is responsible for federal, state and foreign taxes imposed on a separate return basis on the Company (or any of its subsidiaries) with respect to taxable periods (or portions thereof) that ended on or prior to the date of the Distribution.

The TMA provides special rules that allocate responsibility for tax liabilities arising from a failure of the Separation and certain related transactions to qualify for tax-free treatment based on the reasons for such failure. The TMA also imposes restrictions on each of Otis and Carrier during the two-year period following the Distribution that are intended to prevent certain transactions from failing to qualify as transactions that are generally tax-free.

On December 22, 2017, the TCJA was enacted which significantly changed U.S. tax law. This new legislation imposed a one-time toll charge, paid in installments over an 8-year period, on deemed repatriated earnings of foreign subsidiaries as of December 31, 2017. Under the terms of the TMA, Otis is required to indemnify RTX for a percentage of the toll charge installment payments (and any adjustments to any prior toll charge installment payments) due after April 3, 2020. As a result, a portion of the future income tax obligations corresponding to the toll charge has been reclassified as a contractual indemnity obligation within Other long-term liabilities on the Consolidated Balance Sheet. For additional discussion, see Note 15 "Income Taxes" to the Consolidated Financial Statements.

In connection with the Separation, we entered into an Employee Matters Agreement ("EMA") and Intellectual Property Agreement with UTC and Carrier on April 2, 2020. These agreements are not expected to have a material impact on the financial results of Otis.

Impact of COVID-19 on our Company

The results of our operations and overall financial performance were impacted due to the COVID-19 pandemic during the year ended December 31, 2020. COVID-19 could have a negative impact to our business, including net sales and overall financial performance in 2021, as a result of the following:

- Customer liquidity constraints and related credit reserves
- Temporary closure or reduced capacity of our factory operations and those of our suppliers
- Limited new equipment job site closures
- Cancellations or delays of customer orders
- Challenges in accessing units to provide maintenance and repair services
- Customer demand impacting our new equipment, maintenance and repair, and modernization businesses

We currently do not expect any significant impact to our capital and financial resources, including our overall liquidity position based on our available cash and cash equivalents and our access to credit facilities and the capital markets, from the COVID-19 pandemic. We are focused on navigating these challenges presented by COVID-19 by continuing to preserve our liquidity and manage our cash flow by taking the necessary measures to meet our short-term liquidity needs. Our cost containment actions have included, and could include in the future, but are not limited to, reducing our discretionary spending, reducing payroll costs and restructuring.

See the Liquidity and Financial Condition section for further detail.

We have not experienced during the year-ended December 31, 2020 any material impairments to our goodwill, intangible asset and long-lived asset balances as a result of the COVID-19 pandemic and do not currently anticipate any as a result of the COVID-19 pandemic in the future.

Germany Fire

In the quarter ended June 30, 2020 there was a fire at the Company's manufacturing facility in Germany. As a result of the fire, the Company initially recognized immaterial losses related to the write-down of related fixed assets and facilities and incurred immaterial impacts to operating income due to business interruption during the year ended December 31, 2020. The Company has submitted an insurance claim related to the fire for both property damage and business interruption insurance.

Based on the developments of the insurance claim, the Company has recorded a gain on an expected insurance recovery relating to property damage of approximately \$17 million, that is recorded in Other (expense) income, net on the Consolidated Statement of Operations for the year ended December 31, 2020. The Company is continuing to work with insurers to determine the final amounts recoverable for both impacted assets and business interruption. We do not anticipate any additional material impact to our operations in the future from this event.

See Part I, Item 1A, "Risk Factors" in the Form 10-K for further discussion.

RESULTS OF OPERATIONS

Net Sales

<i>(dollars in millions)</i>	2020	2019	2018
Net sales	\$ 12,756	\$ 13,118	\$ 12,915
Percentage change year-over-year	(2.8)%	1.6%	4.8%

The factors contributing to the total percentage change year-over-year in total Net sales are as follows:

	2020	2019
Organic volume	(2.1)%	4.7%
Foreign currency translation	(0.4)%	(3.1)%
Acquisitions and divestitures, net	(0.2)%	(0.1)%
Other	(0.1)%	0.1%
Total % change	(2.8)%	1.6%

The Organic volume decrease of (2.1)% for 2020 was driven by decreases in organic sales of (4.0)% in the New Equipment segment and (0.7)% in the Service segment.

The Organic volume increase of 4.7% for 2019 was driven by increases in organic sales of 4.2% in the New Equipment segment and 5.1% in the Service segment.

See "Segment Review" below for a discussion of Net sales by segment.

Cost of Products and Services Sold

<i>(dollars in millions)</i>	2020	2019	2018
Cost of products and services sold	\$ 8,977	\$ 9,292	\$ 9,189
Percentage change year-over-year	(3.4)%	1.1%	6.6%

The factors contributing to the percentage change year-over-year in total cost of products and services sold are as follows:

	2020	2019
Organic volume	(2.7)%	4.6%
Foreign currency translation	(0.5)%	(3.3)%
Acquisitions and divestitures, net	(0.2)%	(0.1)%
Restructuring	—%	(0.1)%
Total % change	(3.4)%	1.1%

The organic volume decrease in total cost of products and services sold in 2020 was driven by the organic sales decrease noted above, productivity and cost containment actions.

The organic volume increase in cost of products and services sold in 2019 was primarily driven by the organic sales increase above.

Gross Margin

<i>(dollars in millions)</i>	2020	2019	2018
Gross margin	\$ 3,779	\$ 3,826	\$ 3,726
Gross margin percentage	29.6%	29.2%	28.9%

Gross margin increased 40 basis points in 2020 when compared to 2019, primarily driven by an increase in the Service margin rate and overall segment mix, partially offset by a decrease in the New Equipment margin rate.

Gross margin increased 30 basis points in 2019 when compared to 2018, primarily driven by an increase in the Service margin rate, partially offset by a decrease in the New Equipment margin rate.

See the Segment Review below for discussion of operating results by segment.

Research and Development

<i>(dollars in millions)</i>	2020	2019	2018
Research and development	\$ 152	\$ 163	\$ 181
Percentage of Net sales	1.2%	1.2%	1.4%

Research and development spending decreased approximately \$11 million, or (6.7)%, in 2020 compared to 2019 primarily as a result of cost containment actions taken in the current year. Research and development expenses remained relatively consistent as a percentage of Net sales. We continue to fund our strategic investment projects and focus on our commitment to Internet of Things technology developing the next generation of connected elevators and escalators.

Research and development in 2019 reflects the benefit of organizational optimization and lower cost allocations from UTC in 2019 compared to 2018.

Selling, General and Administrative

<i>(dollars in millions)</i>	2020	2019	2018
Selling, general and administrative	\$ 1,924	\$ 1,810	\$ 1,735
Percentage of Net sales	15.1%	13.8%	13.4%

Selling, general and administrative expenses increased approximately \$114 million, or 6.3%, in 2020, with lower employment costs and lower discretionary spending, including cost containment actions taken in response to COVID-19, and the absence of corporate allocations from UTC, being more than offset by non-recurring Separation-related costs and incremental standalone public company costs. Selling, general and administrative expenses increased as a percentage of Net sales in 2020, primarily driven by the increase in non-recurring Separation-related costs, incremental standalone public company costs and lower Net sales.

Selling, general and administrative expenses increased approximately \$75 million, or 4.3%, in 2019. Excluding the favorable impact of foreign exchange fluctuations (3%), the increase is primarily driven by costs in preparation of our Separation from UTC and higher employment and digital technology costs. See Note 5, "Related Parties" for further discussion on costs related to the Separation.

We are continuously evaluating our cost structure and have implemented restructuring actions as a method of keeping our cost structure competitive. For further discussion, see "Restructuring Costs" below and Note 16, "Restructuring Costs" to the Consolidated Financial Statements.

Restructuring Costs

(dollars in millions)	2020	2019	2018
Restructuring costs	\$ 77	\$ 54	\$ 69

We initiate restructuring actions to keep our cost structure competitive. Charges generally arise from severance related to workforce reductions, and to a lesser degree, facility exit and lease termination costs associated with the consolidation of field and manufacturing operations. We continue to closely monitor the economic environment, especially in light of the economic impact of COVID-19, and may undertake further restructuring actions to keep our cost structure aligned with the demands of the prevailing market conditions. Total 2020 restructuring costs include \$71 million of costs related to 2020 actions and \$6 million of costs related to 2019.

2020 Actions. During 2020, we recorded net pre-tax restructuring charges of \$71 million relating to cost reduction actions initiated in 2020. We are targeting to complete in 2021 the majority of the remaining workforce cost reduction actions initiated in 2020. Approximately 97% of the total expected pre-tax charges will require cash payments, which we have funded and expect to continue to fund with cash generated from operations. During 2020, we had cash outflows of approximately \$29 million related to the 2020 actions. We expect to incur additional restructuring charges of \$15 million to complete these actions. We expect recurring pre-tax savings in continuing operations to increase to approximately \$57 million annually over the two-year period subsequent to initiating the actions.

2019 Actions. During 2020 and 2019, we recorded net pre-tax restructuring charges of \$6 million and \$45 million, respectively, for actions initiated in 2019. Approximately 100% of the total pre-tax charge will require cash payments, which we have and expect to continue to fund with cash generated from operations. During 2020, we had cash outflows of approximately \$15 million related to the 2019 actions. We expect to incur additional restructuring charges of \$3 million to complete these actions. We expect recurring pre-tax savings to increase over the two-year period after initiating the actions to be approximately \$45 million annually, of which approximately \$35 million was realized during 2020, net of the current year charges.

In addition, we recorded net pre-tax restructuring costs totaling \$0 and \$9 million in 2020 and 2019, respectively, for restructuring actions initiated in 2018 and prior years. For additional discussion of restructuring, see Note 16, "Restructuring Costs" in the Consolidated Financial Statements.

Other Income (Expense), Net

(dollars in millions)	2020	2019	2018
Other income (expense), net	\$ (64)	\$ (39)	\$ 25

Other income (expense), net primarily includes the impact of changes in the fair value and settlement of embedded and foreign exchange derivatives, gains or losses on sale of businesses and fixed assets, earnings from equity method investments, fair value changes on equity securities, impairments, non-recurring Separation-related expenses, gains on expected insurance recoveries and certain other infrequent operating income and expense items.

The year-over-year increase in Other income (expense), net in 2020 when compared to 2019 is driven by current year fixed asset impairments of approximately \$(71) million and associated license costs of approximately \$(14) million and non-recurring Separation-related expenses. These were partially offset by

favorable mark-to-market adjustments on foreign currency derivatives of approximately \$46 million when compared to the prior year, the absence of the loss on the sale of a business of approximately \$19 million included in the 2019 results and a non-recurring gain of approximately \$17 million related to an expected insurance recovery recognized for property damage as a result of the fire in our manufacturing facility in Germany in the current year.

The year-over-year change in Other income (expense), net in 2019 when compared to 2018 is primarily due to an increase in unfavorable mark-to-market adjustments on foreign currency derivatives, non-recurring charges in 2019 related to our Separation from UTC and lower gains on sales of certain fixed assets.

See Note 5, "Related Parties" to the Consolidated Financial Statements for further discussion on costs related to the Separation.

Interest Expense (Income), Net

<i>(dollars in millions)</i>	2020	2019	2018
Interest expense (income), net	\$ 122	\$ (14)	\$ (14)

Interest expense (income), net primarily relates to interest expense on our external debt, offset by interest income earned on cash balances, short-term investments and related party activity between Otis and UTC in the prior years.

The increase in Interest expense (income), net in 2020 compared to 2019 was primarily driven by interest expense of \$124 million on our external debt for the year ended December 31, 2020 and debt issuance cost amortization of \$5 million. These expenses were offset by interest income on short-term investments. The average interest rate on our external long-term debt for 2020 is 2.3%.

Interest expense (income), net remained flat in 2019 in comparison to 2018.

For additional discussion of borrowings, see Note 10, "Borrowings and Lines of Credit" to the Consolidated Financial Statements.

Income Taxes

	2020	2019	2018
Effective tax rate	30.1%	31.9%	36.1%

The 2020 effective tax rate is higher than the statutory U.S. rate primarily due to higher international tax rates as compared to the lower U.S. federal statutory rate and foreign earnings subject to U.S. tax under the provisions of the TCJA.

The 2020 effective tax rate compared to the 2019 effective tax rate reflects a tax benefit of \$10 million related to our change in assertion of no longer intending to reinvest certain undistributed earnings made during the year as compared to the liability previously recorded by UTC, a decrease as a result of tax regulations related to the TCJA that were enacted during the year, as well as a recognition of a Separation-related foreign tax loss. These were partially offset by incremental withholding taxes in 2020.

The 2019 effective tax rate is higher than the statutory U.S. rate primarily due to higher international tax rates as compared to the lower U.S. federal statutory rate, and the full phase-in of the TCJA.

The 2019 effective tax rate compared to the 2018 effective tax rate reflects a decrease in the cost of U.S. and foreign tax on international activities primarily attributable to the absence of the net tax charge of \$143 million as a result of UTC's change of assertion of no longer intending to reinvest certain undistributed earnings of its international subsidiaries, offset by the full phase-in of the TCJA.

The 2018 effective tax rate is higher than the statutory U.S. rate as it reflects a net tax charge of \$143 million as a result of UTC's change of assertion of no longer intending to reinvest certain undistributed earnings of its international subsidiaries.

For additional discussion of income taxes and the effective income tax rate, see Note 15, "Income Taxes" to the Consolidated Financial Statements.

Noncontrolling Interest in Subsidiaries' Earnings

<i>(dollars in millions)</i>	2020	2019	2018
Noncontrolling interest in subsidiaries' earnings	\$ 150	\$ 151	\$ 161

Noncontrolling interest in subsidiaries' earnings remained consistent in 2020 in comparison to 2019.

Net income attributable to noncontrolling interest decreased in 2019 when compared with 2018 primarily due to a decrease in the net income of certain subsidiaries with noncontrolling interest.

Ownership interest in the underlying entities has remained generally consistent year-over-year.

Net Income Attributable to Common Shareholders

<i>(dollars in millions, except per share amounts)</i>	2020	2019	2018
Net income attributable to common shareholders	\$ 906	\$ 1,116	\$ 1,049
Diluted earnings per share from operations	\$ 2.08	\$ 2.58	\$ 2.42

Net income attributable to common shareholders for the year ended December 31, 2020 includes restructuring charges, net of taxes, of \$58 million (\$77 million pre-tax), as well as charges relating to significant non-operational and/or non-recurring items, net of taxes, of approximately \$132 million (\$203 million pre-tax) which include non-recurring Separation-related costs, fixed asset impairments, non-recurring Separation-related tax benefits and the impact of non-recurring tax items. These significant non-operational and/or non-recurring items, along with incremental standalone public company costs were the primary contributors to lower Net income attributable to common shareholders for the year ended December 31, 2020 when compared to the same period in 2019. The effects of the restructuring and the non-operational and non-recurring items above resulted in an impact of \$0.44 on diluted earnings per share for the year ended December 31, 2020.

Net income attributable to common shareholders for the year ended December 31, 2019 includes restructuring charges, net of tax benefit, of \$39 million (\$54 million pre-tax) as well as charges relating to significant non-operational and/or non-recurring items, net of taxes, of approximately \$51 million (\$69 million pre-tax), which primarily consist of employee-related costs, costs to establish certain standalone functions, information technology systems, professional services fees and other transaction-related costs for our transition to being a standalone public company, in addition to non-recurring losses on disposals of businesses.

Net income attributable to common shareholders for the year ended December 31, 2018 includes restructuring charges, net of tax benefit, of \$53 million (\$69 million pre-tax) as well as a net charge for certain non-operational and/or non-recurring items, primarily driven by a tax charge of \$143 million that will become due when previously reinvested earnings of certain international subsidiaries are remitted.

Segment Review

	Net Sales			Operating Profit			Operating Profit Margin		
(dollars in millions)	2020	2019	2018	2020	2019	2018	2020	2019	2018
New Equipment	\$ 5,371	\$ 5,648	\$ 5,596	\$ 318	\$ 393	\$ 390	5.9%	7.0%	7.0%
Service	7,385	7,470	7,319	1,611	1,603	1,516	21.8%	21.5%	20.7%
Total segment	12,756	13,118	12,915	1,929	1,996	1,906	15.1%	15.2%	14.8%
General corporate expenses and other	—	—	—	(290)	(182)	(71)	—	—	—
Total	\$ 12,756	\$ 13,118	\$ 12,915	\$ 1,639	\$ 1,814	\$ 1,835	12.8%	13.8%	14.2%

New Equipment

The New Equipment segment designs, manufactures, sells and installs a wide range of passenger and freight elevators, as well as escalators and moving walkways in residential and commercial buildings and infrastructure projects. Our New Equipment customers include real-estate and building developers and general contractors who develop and/or design buildings for residential, commercial, retail or mixed-use activity. We sell directly to customers as well as through agents and distributors.

(dollars in millions)	2020	2019	2018	Total Increase (Decrease) Year-Over-Year for:			
				2020 compared with 2019		2019 compared with 2018	
Net sales	\$ 5,371	\$ 5,648	\$ 5,596	\$ (277)	(4.9)%	\$ 52	0.9%
Cost of sales	4,439	4,640	4,586	(201)	(4.3)%	54	1.2%
	932	1,008	1,010	(76)	(7.5)%	(2)	(0.2)%
Operating expenses and other	614	615	620	(1)	(0.2)%	(5)	(0.8)%
Operating profit	\$ 318	\$ 393	\$ 390	\$ (75)	(19.1)%	\$ 3	0.8%

	2020			2019		
	Net Sales	Cost of Sales	Operating Profit	Net Sales	Cost of Sales	Operating Profit
Organic/Operational	(4.0)%	(3.7)%	(12.7)%	4.2%	4.8%	2.6%
Foreign currency translation	(0.8)%	(0.7)%	(2.3)%	(3.4)%	(3.6)%	(4.3)%
Acquisitions/Divestitures, net	—%	—%	—%	—%	—%	—%
Restructuring cost	—%	0.1%	(2.8)%	—%	—%	1.5%
Other	(0.1)%	—%	(1.3)%	0.1%	—%	1.0%
Total % change	(4.9)%	(4.3)%	(19.1)%	0.9%	1.2%	0.8%

2020 Compared with 2019

The organic sales decrease of (4.0)% was primarily driven by organic sales declines in all regions primarily due to impacts of the COVID-19 pandemic.

New Equipment operational profit decreased (12.7)%, as strong material productivity 15.8% and cost containment actions, were more than offset by the impact of lower volume (8.9)% and unfavorable rate drivers (25.1)% due to under-absorption, field inefficiencies, price and mix and higher bad debt expense. New Equipment operating profit was also impacted by foreign currency headwinds, higher restructuring costs and incremental public company standalone costs.

2019 Compared with 2018

The organic sales increase of 4.2% primarily reflects growth in Asia.

New Equipment operational profit increased 2.6% driven by higher volume 6.8% and lower research and development expenses 3.1%, partially offset by higher selling, general and administrative expenses (7.1)%.

Service

The Service segment performs maintenance and repair services for both our products and those of other manufacturers and provides modernization services to upgrade elevators and escalators. Maintenance services include inspections to ensure code compliance, preventive maintenance offerings and other customized maintenance offerings tailored to meet customer needs, as well as repair services that address equipment and component wear and tear, and breakdowns. Modernization services enhance equipment operation and improve building functionality. Modernization offerings can range from relatively simple upgrades of interior finishes and aesthetics, to complex upgrades of larger components and sub-systems. Our typical Service customers include building owners, facility managers, housing associations and government agencies that operate buildings where elevators and escalators are installed.

(dollars in millions)	2020	2019	2018	Total Increase (Decrease) Year-Over-Year for:			
				2020 compared with 2019		2019 compared with 2018	
Net sales	\$ 7,385	\$ 7,470	\$ 7,319	\$ (85)	(1.1)%	\$ 151	2.1%
Cost of sales	4,538	4,652	4,603	(114)	(2.5)%	49	1.1%
	2,847	2,818	2,716	29	1.0 %	102	3.8%
Operating expenses and other	1,236	1,215	1,200	21	1.7 %	15	1.3%
Operating profit	\$ 1,611	\$ 1,603	\$ 1,516	\$ 8	0.5 %	\$ 87	5.7%

	2020			2019		
	Net Sales	Cost of Sales	Operating Profit	Net Sales	Cost of Sales	Operating Profit
Organic/Operational	(0.7)%	(1.8)%	0.9%	5.1%	4.4%	8.3%
Foreign currency translation	(0.1)%	(0.1)%	0.2%	(3.0)%	(3.0)%	(3.4)%
Acquisitions/Divestitures, net	(0.3)%	(0.6)%	(0.1)%	—%	(0.2)%	(0.1)%
Restructuring cost	—%	(0.1)%	(0.7)%	—%	—%	0.6%
Other	—%	0.1%	0.2%	—%	(0.1)%	0.3%
Total % change	(1.1)%	(2.5)%	0.5%	2.1%	1.1%	5.7%

2020 Compared with 2019

Service sales declined (1.1)% with an organic sales decline of (0.7)% and the remaining decrease due to foreign currency headwinds and the net impact from acquisitions and divestitures. The organic sales decrease (0.7)% primarily consists of organic sales decrease in maintenance and repair of (0.9)%, with organic sales for modernization remaining flat.

Maintenance and repair net sales decreased (1.2)% year over year and was comprised of a (0.9)% organic sales decrease, foreign currency headwinds of (0.1)% and decreases related to net acquisitions and divestitures of (0.2)%.

Modernization net sales decreased (0.9)% year over year and was comprised of a 0.1% organic sales increase, foreign currency tailwinds of 0.1%, more than offset by decreases related to net acquisitions and divestitures (1.1)%.

Service operational profit increased 0.9% with the benefit of favorable productivity 4.2%, pricing and mix 2.3%, and cost containment actions, more than offsetting the combined impact of price concessions and lower volume (3.4)% and higher bad debt expense. Service operating profit was also favorably impacted by foreign currency, offset by higher restructuring costs and incremental public company standalone costs.

2019 Compared with 2018

The organic sales increase of 5.1% primarily consists of organic increases in maintenance and repair 4.9% and modernization 6.2%.

Maintenance and repair net sales increased 1.7% year over year and was comprised of a 4.9% organic sales increase, offset by foreign currency headwinds of (3.2)%.

Modernization net sales increased 3.6% year over year and was comprised of a 6.2% organic sales increase, offset by foreign currency headwinds of (2.2)% and decreases related to acquisitions and divestitures, net of (0.4)%.

Service operational profit increased 8.3%, driven by higher volume 7.8% and favorable price and mix 6.0%, partially offset by higher selling, general and administrative expenses (4.1)%.

General Corporate Expenses and Other

<i>(dollars in millions)</i>	2020	2019	2018
General corporate expenses and other	(290)	(182)	(71)

General corporate expenses and other increased approximately \$108 million in 2020 compared to the same period in 2019, primarily driven by current year fixed asset impairments of \$71 million and associated license costs of approximately \$14 million, non-recurring Separation-related costs of \$119 million in the current year and incremental standalone public company costs. These were partially offset by favorable mark-to-market adjustments on foreign currency derivatives of \$46 million when compared to the prior period, the absence of losses on the sale of a business of \$19 million that occurred during 2019 and a non-recurring gain of approximately \$17 million related to an expected insurance recovery for property damage as a result of the fire in our manufacturing facility in Germany recognized in the current year.

General corporate expenses and other increased approximately \$111 million in 2019 compared to the same period in 2018, primarily driven by non-recurring Separation costs and the changes in Other (expense) income, net previously discussed above.

LIQUIDITY AND FINANCIAL CONDITION

<i>(dollars in millions)</i>	December 31, 2020	December 31, 2019
Cash and cash equivalents	\$ 1,782	\$ 1,446
Total debt	5,963	39
Net debt (total debt less cash and cash equivalents)	4,181	(1,407)
Total equity	(3,284)	2,231
Total capitalization (total debt plus total equity)	2,679	2,270
Net capitalization (total debt plus total equity less cash and cash equivalents)	897	824
Total debt to total capitalization	223%	2%
Net debt to net capitalization	466%	(171)%

At December 31, 2020, we had cash and cash equivalents of approximately \$1.8 billion, of which approximately 88% was held by the Company's foreign subsidiaries. We manage our worldwide cash requirements by reviewing available funds among the many subsidiaries through which we conduct our business and the cost effectiveness with which those funds can be accessed. On occasion, we are required to maintain cash deposits with certain banks with respect to contractual obligations related to acquisitions and divestitures or other legal obligations. As of December 31, 2020 and 2019, the amount of such restricted cash was approximately \$19 million and \$13 million, respectively.

From time to time we may need to access the capital markets to obtain financing. We may incur indebtedness or issue equity as needed. Although we believe that the arrangements in place as of December 31, 2020 permit us to finance our operations on acceptable terms and conditions, our access to, and the availability of, financing on acceptable terms and conditions in the future could be impacted by many factors, including (1) our credit ratings or absence of a credit rating, (2) the liquidity of the overall capital markets and (3) the current state of the economy, including the impact of COVID-19. There can be no assurance that we will continue to have access to the capital markets on terms acceptable to us.

The following is a summary of the debt issuances in 2020:

<i>(dollars in millions)</i>		
Issuance Date	Description of Debt	Aggregate Principal Balance
03-27-2020	LIBOR plus 112.5 bps term loan due 2023	\$ 1,000
02-27-2020	LIBOR plus 45 bps floating rate notes due 2023	500
02-27-2020	2.056% notes due 2025	1,300
02-27-2020	2.293% notes due 2027	500
02-27-2020	2.565% notes due 2030	1,500
02-27-2020	3.112% notes due 2040	750
02-27-2020	3.362% notes due 2050	750

The following is a summary of the debt repayments in 2020:

(dollars in millions)

Payment Date	Description of Debt	Total Principal Payments	
09-28-2020	LIBOR plus 112.5 bps term loan due 2023	\$	750
11-20-2020	LIBOR plus 112.5 bps term loan due 2023	\$	250

In 2020 we repaid the \$1.0 billion term loan in full, using cash from operations and proceeds from the issuance of Euro-denominated and US dollar denominated commercial paper.

The net proceeds from the above February and March debt issuances totaling \$6.3 billion were used to distribute cash to UTC as part of the Separation in 2020.

For additional discussion of borrowings, see Note 10, "Borrowings and Lines of Credit" to the Consolidated Financial Statements.

Following the enactment of the TCJA, and after reassessing as part of the Separation, the Company determined that it no longer intends to reinvest certain undistributed earnings of our international subsidiaries that have been previously taxed in the U.S. For the remainder of the Company's undistributed international earnings, unless tax effective to repatriate, we will continue to permanently reinvest these earnings.

We expect to fund our ongoing operating, investing and financing requirements mainly through cash flows from operations, available liquidity through cash on hand and available bank lines of credit and access to the capital markets.

On April 27, 2020, our Board of Directors authorized a share repurchase program for up to \$1.0 billion of Common Stock. Under this program, shares may be purchased on the open market, in privately negotiated transactions, under accelerated share repurchase programs, or under plans complying with rules 10b5-1 and 10b-18 under the Securities Exchange Act of 1934, as amended. We expect to commence share repurchases under the program in 2021.

Cash Flow – Operating Activities

(dollars in millions)	2020	2019	2018
Net cash flows provided by operating activities	\$ 1,480	\$ 1,469	\$ 1,550

2020 Compared with 2019

Cash generated from operating activities in 2020 was \$11 million higher than 2019, primarily due to increased cash inflows related to current assets and current liabilities activity of \$109 million, as described below. There were also increased Other operating activities of \$106 million compared to the same period in 2019, primarily due to increased long-term accruals. These were partially offset by lower net income of \$211 million, which includes the impact of interest expense on debt, incremental standalone public company costs and non-recurring Separation-related costs in 2020.

2020 Changes in Working Capital

The 2020 cash inflows related to current assets and current liabilities operating activity were \$77 million.

These cash inflows were primarily driven by:

- Contract assets, current and Contract liabilities, current, net change of \$282 million, driven by the timing of billings on contracts compared to the progression on current contracts; and
- Accounts payable, which increased by \$20 million primarily due to the timing of payments to suppliers.

The cash inflows were partially offset by cash outflows related to:

- Inventories, net, which increased \$76 million, due to the impact of higher production inventory levels related to the timing of deliveries to construction sites; and
- Accounts receivable, net, which increased \$163 million due to slower collections and increased customer financing activity.

Additionally, Other current assets decreased by \$28 million due to the receipt of indemnification pursuant to the TMA in order to pay foreign tax obligations, partially offset by tax prepayments in certain tax jurisdictions, while Accrued liabilities decreased \$14 million largely due to the payment of foreign tax obligations pursuant to the TMA described above and income tax liabilities in certain tax jurisdictions, partially offset by accruals for interest in excess of interest payments. The receipt and payment of indemnification assets and foreign tax obligations resulted in no net cash flow for 2020. See Note 5, "Related Parties" to the Consolidated Financial Statements for further discussion on transactions with our former parent UTC.

2019 Compared with 2018

Cash generated from operating activities in 2019 was \$81 million lower than 2018, primarily due to higher income taxes settled with UTC. Cash outflows for working capital increased by \$24 million over the prior period to support higher organic sales.

2019 Changes in Working Capital

The 2019 cash outflows related to current assets and current liabilities operating activity were \$32 million.

These cash outflows were primarily driven by:

- Accounts receivable, net, which increased \$191 million due to increased sales volume and timing of receipts of payments;

The cash outflows were partially offset by cash inflows related to:

- Net change in Contract assets, current and Contract liabilities, current of \$97 million due to the timing of billings on contracts compared to the progression on current contracts; and
- Inventories, net, which decreased \$60 million due to lower production inventory.

Cash Flow – Investing Activities

<i>(dollars in millions)</i>	2020	2019	2018
Net cash flows used in investing activities	\$ (353)	\$ (203)	\$ (201)

Cash flows used in investing activities primarily reflect capital expenditures, investments in businesses and securities, proceeds received on the sale of fixed assets, and settlement of derivative contracts.

2020 compared to 2019*(dollars in millions)*

	2020	2019	Change
Investing Activities:			
Capital expenditures	\$ (183)	\$ (145)	\$ (38)
Investments in businesses, net of cash acquired	(53)	(47)	(6)
Investments in equity securities	(51)	—	(51)
Receipts (payments) on settlements of derivative contracts	(69)	(5)	(64)
Other investing activities, net	3	(6)	9
Net cash flows used in investing activities	\$ (353)	\$ (203)	\$ (150)

Cash flows used in investing activities in 2020 compared to 2019 increased \$150 million, including a \$64 million increase in payments on settlements of derivative contracts, a \$51 million investment in the current year related to equity securities, a \$38 million increase in capital expenditures, and a \$6 million increase in investments in businesses. Increases in our capital expenditures reflect investments in assets to support the Separation, as well as investments in software for internal use to support our digital and strategic initiatives.

As discussed in Note 17, "Financial Instruments" to the Consolidated Financial Statements, we enter into derivative instruments for risk management purposes. We operate internationally and, in the normal course of business, are exposed to fluctuations in interest rates and foreign exchange rates. These fluctuations can increase the costs of financing, investing and operating the business. We use derivative instruments, including forward contracts and options, to manage certain foreign currency exposures. The settlement of these derivative instruments resulted in a net cash outflow of \$69 million in 2020, which includes \$21 million of payments associated with the hedges of foreign-denominated TMA indemnification assets.

2019 compared to 2018

Cash flows used in investing activities in 2019 compared to 2018 remained relatively flat, primarily due to a \$27 million decrease in capital expenditures, offset by a \$15 million decrease in proceeds received on the sale of certain fixed assets and a \$15 million increase in short-term investing activity.

Cash Flow – Financing Activities*(dollars in millions)*

	2020	2019	2018
Net cash flows used in financing activities	\$ (844)	\$ (1,133)	\$ (1,497)

Financing activities primarily include issuance of long-term debt, increases (decreases) in short-term borrowings, dividends paid to common shareholders, dividends paid to noncontrolling interest and transfers to and from UTC, consisting of, among other things, cash transfers, distributions, cash investments and changes in receivables and payables between Otis and UTC. See Note 5, "Related Parties" to the Consolidated Financial Statements for further discussion on transactions with UTC.

2020 compared to 2019

Net cash used in financing activities decreased \$289 million in 2020 compared to 2019, primarily due to the issuance of long-term notes of \$5.3 billion, the draw of \$1.0 billion from the term loan, and an increase in short-term borrowings of \$641 million primarily from the issuance of commercial paper in 2020. These were

partially offset by a \$5.4 billion increase in net transfers to UTC related to the Separation, the full repayment of the \$1.0 billion term loan, a \$260 million increase in dividends paid on Common Stock, and \$43 million in payments of long-term debt issuance costs in 2020. See Note 10, "Borrowings and Lines of Credit" to the Consolidated Financial Statements for further discussion on borrowings.

2019 compared to 2018

Net cash used in financing activities decreased \$364 million in 2019 compared to 2018 primarily due to a decrease in Net transfers to UTC.

CRITICAL ACCOUNTING ESTIMATES

Preparation of the financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses. Note 2, "Summary of Significant Accounting Policies" to the Consolidated Financial Statements describes the significant accounting policies used in preparation of the Consolidated Financial Statements. Management believes the most complex and sensitive judgments, because of their significance to the Consolidated Financial Statements, result primarily from the need to make estimates about the effects of matters that are inherently uncertain. The most significant areas involving management judgments and estimates are described below. Actual results in these areas could differ from management's estimates.

Revenue Recognition from Contracts with Customers

Effective January 1, 2018, we adopted Accounting Standards Update ("ASU") 2014-09 and its related amendments (referred to as "ASC 606") and elected the modified retrospective approach. The impact of ASC 606 did not significantly change the revenue recognition model for us nor our policies and procedures. For new equipment and modernization contracts, equipment and installation are typically procured in a single contract providing the customer with a complete installed elevator or escalator unit. The combination of equipment and installation promises are typically a single performance obligation. For these performance obligations, revenue is typically recognized over time using costs incurred to date relative to total estimated costs at completion to measure progress. Contract costs are usually incurred over a period of time, which can be several years, and the estimation of these costs requires management's judgment. Contract costs included in the calculation are comprised of labor, materials, subcontractors' costs or other direct costs and indirect costs, which include indirect labor costs.

The long-term nature of the contracts, the complexity of the products and the scale of the projects can affect our ability to estimate costs precisely. We review cost estimates on significant new equipment and modernization contracts on a quarterly basis and, for others, no less frequently than annually or when circumstances change and warrant a modification to a previous estimate. We record changes in contract estimates using the cumulative catch-up method and we review changes in contract estimates for their impact on net sales or operating profit in the Consolidated Financial Statements. Modifications are recognized as a cumulative catch-up or treated as a separate accounting contract if the modification adds distinct goods or services and the modification is priced at its stand-alone selling price.

See Note 2, "Summary of Significant Accounting Policies" and Note 4, "Revenue Recognition" to the Consolidated Financial Statements for further discussion.

Income Taxes

The future tax benefit arising from deductible temporary differences and tax carryforwards was \$642 million at December 31, 2020 and \$619 million at December 31, 2019. Management estimates that our earnings during the periods when the temporary differences become deductible will be generally sufficient to realize the related future income tax benefits, which may be realized over an extended period of time. For those jurisdictions where the expiration date of tax carryforwards or the projected operating results indicate that realization is not likely, a valuation allowance is provided.

In assessing the need for a valuation allowance, we estimate future taxable income, considering the feasibility of ongoing tax planning strategies and the realizability of tax loss carryforwards. Valuation allowances related to deferred tax assets can be affected by changes to tax laws, changes to statutory tax rates and future taxable income levels. In the event we were to determine that we would not be able to realize all or a portion of our deferred tax assets in the future, we would reduce such amounts through an increase to tax expense in the period in which that determination is made or when tax law changes are enacted. Conversely, if we were to determine that we would be able to realize our deferred tax assets in the future in excess of the net carrying amounts, we would decrease the recorded valuation allowance through a decrease to tax expense in the period in which that determination is made.

In the ordinary course of business there is inherent uncertainty in quantifying our income tax positions. We assess our income tax positions and record tax benefits for all years subject to examination based upon management's evaluation of the facts, circumstances and information available at the reporting date. For those tax positions where it is more likely than not that a tax benefit will be sustained, we have recorded the largest amount of tax benefit with a greater than 50% likelihood of being realized upon ultimate settlement with a taxing authority that has full knowledge of all relevant information. For those income tax positions where it is not more likely than not that a tax benefit will be sustained, no tax benefit has been recognized in the Consolidated Financial Statements. See Notes 3, "Earnings Per Share" and 14, "Accumulated Other Comprehensive Income (Loss)" to the Consolidated Financial Statements for further discussion. Additionally, see Note 21, "Contingent Liabilities" to the Consolidated Financial Statements for discussion of administrative review proceedings with the German Tax Office.

Goodwill

We have generated goodwill as a result of our acquisitions. At the time of acquisition, we account for business acquisitions using the purchase method of accounting, in accordance with which assets acquired and liabilities assumed are recorded at their respective fair values at the acquisition date. The fair value of the consideration paid, including contingent consideration, is assigned to the assets acquired and liabilities assumed based on their respective fair values. Goodwill represents the excess of the purchase price over the estimated fair values of the assets acquired and liabilities assumed.

We review our goodwill for impairment on an annual basis at July 1 or more frequently if events or a change in circumstances indicate that the carrying amount may not be recoverable. We test goodwill for impairment at a level within the Company referred to as the reporting unit, which is one level below the business segment level. We have determined there to be three reporting units within each business segment.

In accordance with Accounting Standards Codification ("ASC") 350, Intangibles – Goodwill and Other, we initially perform a qualitative assessment (commonly known as "step zero") to determine whether further

impairment testing is necessary before performing the two-step test. The qualitative assessment requires judgments by management about economic conditions including the entity's operating environment, its industry and other market considerations, entity-specific events related to financial performance or loss of key personnel and other events that could impact the reporting unit. If management concludes, based on assessment of relevant events, facts and circumstances, that it is more likely than not that a reporting unit's fair value is greater than its carrying value, no further impairment testing is required. If we determine, based on this assessment, that it is more likely than not that the fair value of the reporting unit is less than its carrying value, we perform a quantitative goodwill impairment test by comparing the reporting unit's fair value with its carrying value. An impairment loss is recognized for the amount by which the reporting unit's carrying value exceeds its fair value, up to the total amount of goodwill allocated to the reporting unit. No impairment loss is recognized if the fair value of the reporting exceeds its carrying value.

We completed the annual goodwill impairment test for all of our reporting units as of July 1, 2020 and determined that no adjustment to goodwill was necessary as the fair value of each reporting unit was significantly in excess of the carrying value of each reporting unit.

Contingent Liabilities

Otis is party to litigation related to a number of matters as described in Note 21, "Contingent Liabilities" to the Consolidated Financial Statements. In particular, they may include risks associated with contractual, regulatory and other matters, which may arise in the ordinary course of business. The outcome of these matters may have a material effect on the financial position, results of operations or cash flows. Management regularly analyzes current information about these matters and accrues for contingent losses that are probable and reasonably estimable. To assess the exposure to potential liability, we consult with relevant internal and external counsel. In making the decision regarding the need for loss accruals, management considers the degree of probability of an unfavorable outcome and the ability to make a sufficiently reliable estimate of the amount of loss. See Part I, Item 1A, "Risk Factors" in the Form 10-K for further discussion.

Employee Benefit Plans

We sponsor domestic and international defined benefit pension and other postretirement plans. Major assumptions used in the accounting for these employee benefit plans include the discount rate, expected return on plan assets, rate of increase in employee compensation levels and mortality rates. Assumptions are determined based on company data and appropriate market indicators, and are evaluated each year at December 31. A change in any of these assumptions would have an effect on net periodic pension and postretirement benefit costs reported in the Consolidated Financial Statements.

In the following table, we show the sensitivity of our pension and other postretirement benefit plan liabilities and net periodic cost to a 25 basis point change in the discount rates for benefit obligations, as of December 31, 2020:

<i>(dollars in millions)</i>	Increase in Discount Rate of 25 bps	Decrease in Discount Rate of 25 bps
Pension plans		
Projected benefit obligation	\$ (33)	\$ 34
Net periodic pension (benefit) cost	(1)	2

The impact on the accumulated postretirement benefit obligation and on the net periodic postretirement (benefit) cost is less than \$1 million.

Pension expense is also sensitive to changes in the expected long-term rate of asset return. An increase or decrease of 25 basis points in the expected long-term rate of asset return would have decreased or increased 2020 pension expense by approximately \$2 million.

The weighted-average discount rates used to measure pension liabilities and costs utilize each plan's specific cash flows and are then compared to high-quality bond indices for reasonableness. Global market interest rates decreased in 2020 as compared with 2019, and, as a result, the weighted-average discount rate used to measure pension liabilities was 1.05% in 2020 and 1.50% in 2019.

See Note 13, "Employee Benefit Plans" to the Consolidated Financial Statements for further discussion.

Off-Balance Sheet Arrangements and Contractual Obligations

We extend a variety of financial guarantees to third parties in support of our business. We also have obligations arising from environmental, health and safety, tax and employment matters. Circumstances that could cause the contingent obligations and liabilities arising from these arrangements to come to fruition include changes in the underlying transaction, non-performance under a contract or deterioration in the financial condition of the guaranteed party.

Below is a summary of our contractual obligations and commitments as of December 31, 2020:

(dollars in millions)	Total	Payments Due by Period			
		2021	2022-2023	2024-2025	Thereafter
Long-term debt - principal	\$ 5,305	\$ —	\$ 503	\$ 1,302	\$ 3,500
Long-term debt - future interest	1,770	130	256	237	1,147
Purchase obligations	1,194	935	181	67	11
Other long-term liabilities	406	81	70	131	124
Total contractual obligations	\$ 8,675	\$ 1,146	\$ 1,010	\$ 1,737	\$ 4,782

Purchase obligations include amounts committed for the purchase of goods and services under legally enforceable contracts or purchase orders. Where it is not practically feasible to determine the legally enforceable portion of our obligation under certain of our long-term purchase agreements, we include additional expected purchase obligations beyond what may be legally enforceable. In connection with the Separation and transition to a standalone public company, we entered into contractual purchase commitments with suppliers, service vendors, and various transition services agreements to support our information technology that are either necessary to operate as a standalone business or are resulting from implementing strategic initiatives.

Other long-term liabilities primarily include amounts on our December 31, 2020 Consolidated Balance Sheet representing obligations under product service and warranty policies, estimated remediation costs, expected contributions under employee benefit programs and \$239 million of payables to RTX for reimbursement of tax payments RTX is responsible to pay after the Separation pursuant to the TMA. The timing of expected cash flows associated with these obligations is based upon management's estimates over the terms of these agreements and is largely based upon historical experience.

The above table excludes unrecognized tax benefits of \$397 million, the timing of which is uncertain to become payable. See Note 15, "Income Taxes" to the Consolidated Financial Statements for additional discussion on unrecognized tax benefits.

Market Risk and Risk Management

We are exposed to fluctuations in foreign currency exchange rates and commodity prices. To manage certain of those exposures, we use derivative instruments, including forward contracts. Derivative instruments utilized by us in our hedging activities are viewed as risk management tools, involve relatively little complexity and are not used for trading or speculative purposes. We diversify the counterparties used and monitor the concentration of risk to limit our counterparty exposure.

We have evaluated our exposure to changes in foreign currency exchange rates and interest rates in our market risk sensitive instruments, which are primarily cash, debt and derivative instruments, using a value at risk analysis. Based on a 95% confidence level and one-day holding period, at December 31, 2020, the potential loss in fair value on our market risk sensitive instruments was not material in relation to our financial position, results of operations or cash flows. Our calculated value at risk exposure represents an estimate of reasonably possible net losses based on volatilities and correlations, and is not necessarily indicative of actual results. Additionally, any losses or gains on derivative instruments would be mostly offset by corresponding gains or losses in the remeasurement of the underlying transactions being hedged.

Refer to Note 2, "Summary of Significant Accounting Policies", Note 10, "Borrowings and Lines of Credit" and Note 17, "Financial Instruments" to the Consolidated Financial Statements for additional discussion of foreign currency exchange, interest rates and financial instruments, including the aggregate notional amount of our outstanding foreign currency hedges.

Foreign Currency Exposures

The value of certain foreign currencies as compared to the US dollar may impact Otis' financial results. We have a high volume of foreign currency exposures that result from our international sales, purchases, investments and other international transactions. International sales were approximately \$9.3 billion, \$9.5 billion and \$9.5 billion in 2020, 2019 and 2018, respectively. We manage foreign currency exposures that are associated with committed foreign currency purchases and sales as well as foreign currency denominated assets and liabilities that are created in the ordinary course of business. More than insignificant exposures, that cannot be naturally offset, are generally hedged with foreign currency derivatives.

For our non-U.S. based entities, a substantial portion of revenues are generated and costs are incurred in local currencies. We transact business in various foreign currencies, which exposes our cash flows and earnings to changes in foreign currency exchange rates. We periodically enter into sales contracts denominated in currencies other than the functional currency of the parties to the transaction, which can create foreign exchange exposure. While the objective of the hedging program is to minimize the foreign currency exchange impact on operating results, there are typically variances between the hedging gains or losses and the translational impact due to the length of hedging contracts, changes in the sales profile, volatility in the exchange rates and other such operational considerations. Otis does not enter into hedging contracts for speculative purposes.

As discussed in Note 17, "Financial Instruments" to the Consolidated Financial Statements as of December 31, 2020, we have €420 million of Euro-denominated commercial paper, which qualifies as a net investment hedge against our investments in European businesses. As of December 31, 2020, the net investment hedge is deemed to be effective.

Interest Rate Risk

Our long-term debt portfolio primarily consists of fixed-rate instruments. For any variable rate debt, interest rate changes in the London Interbank Offered Rate ("LIBOR") will impact future earnings and cash flows. From time to time, we may hedge floating rates using interest rate swaps. The hedges would be designated as fair value hedges and the gains and losses on the swaps would be reported in interest expense, reflecting that portion of interest expense at a variable rate.

Cautionary Note Concerning Factors That May Affect Future Results

This 2020 Annual Report to Shareholders (2020 Annual Report) contains statements which, to the extent they are not statements of historical or present fact, constitute “forward-looking statements” under the securities laws. From time to time, oral or written forward-looking statements may also be included in other information released to the public. These forward-looking statements are intended to provide management’s current expectations or plans for Otis’ future operating and financial performance, based on assumptions currently believed to be valid. Forward-looking statements can be identified by the use of words such as “believe,” “expect,” “expectations,” “plans,” “strategy,” “prospects,” “estimate,” “project,” “target,” “anticipate,” “will,” “should,” “see,” “guidance,” “outlook,” “confident” and other words of similar meaning in connection with a discussion of future operating or financial performance or the Separation. Forward-looking statements may include, among other things, statements relating to future sales, earnings, cash flow, results of operations, uses of cash, dividends, share repurchases, tax rates and other measures of financial performance or potential future plans, strategies or transactions of Otis following the Separation, including the estimated costs associated with the Separation and other statements that are not historical facts. All forward-looking statements involve risks, uncertainties and other factors that may cause actual results to differ materially from those expressed or implied in the forward-looking statements. For those statements, Otis claims the protection of the safe harbor for forward-looking statements contained in the U.S. Private Securities Litigation Reform Act of 1995. Such risks, uncertainties and other factors include, without limitation:

- the effect of economic conditions in the industries and markets in which Otis and its businesses operate in the U.S. and globally and any changes therein, including financial market conditions, fluctuations in commodity prices, interest rates and foreign currency exchange rates, levels of end market demand in construction, the impact of weather conditions, pandemic health issues (including COVID-19 and its effects, among other things, on global supply, demand, and distribution disruptions as the coronavirus outbreak continues and results in an increasingly prolonged period of travel, commercial and/or other similar restrictions and limitations), natural disasters and the financial condition of Otis’ customers and suppliers;
- challenges in the development, production, delivery, support, performance and realization of the anticipated benefits of advanced technologies and new products and services;
- future levels of indebtedness, capital spending and research and development spending;
- future availability of credit and factors that may affect such availability, including credit market conditions and Otis’ capital structure;
- the timing and scope of future repurchases of Otis’ common stock (“Common Stock”), which, if commenced, may be suspended at any time due to various factors, including market conditions and the level of other investing activities and uses of cash;
- delays and disruption in delivery of materials and services from suppliers;
- cost reduction or containment actions, restructuring costs and related savings and other consequences thereof;
- new business and investment opportunities;
- the anticipated benefits of moving away from diversification and balance of operations across product lines, regions and industries;
- the outcome of legal proceedings, investigations and other contingencies;
- pension plan assumptions and future contributions;
- the impact of the negotiation of collective bargaining agreements and labor disputes;

- the effect of changes in political conditions in the U.S., including the new U.S. Administration, and other countries in which Otis and its businesses operate, including the United Kingdom's recent withdrawal from the European Union, on general market conditions, global trade policies and currency exchange rates in the near term and beyond;
- the effect of changes in tax, environmental, regulatory (including among other things import/export) and other laws and regulations in the U.S. and other countries in which Otis and its businesses operate, including changes as a result of the new U.S. Administration;
- the ability of Otis to retain and hire key personnel;
- the scope, nature, impact or timing of acquisition and divestiture activity, including among other things integration of acquired businesses into existing businesses and realization of synergies and opportunities for growth and innovation and incurrence of related costs;
- the expected benefits of the Separation and the timing thereof;
- a determination by the Internal Revenue Service and other tax authorities that the distribution or certain related transactions should be treated as taxable transactions;
- risks associated with indebtedness incurred as a result of financing transactions undertaken in connection with the Separation;
- the risk that dis-synergy costs, costs of restructuring transactions and other costs incurred in connection with the Separation will exceed Otis' estimates; and
- the impact of the Separation on Otis' businesses, resources, systems, procedures and controls, diversion of management's attention and the impact on relationships with customers, suppliers, employees and other business counterparties.

In addition, this 2020 Annual Report includes important information as to risks, uncertainties and other factors that may cause actual results to differ materially from those expressed or implied in the forward-looking statements. See the "Notes to Consolidated Financial Statements" under the heading "Note 1: Description of Business" and "Note 22: Segment Financial Data" and the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" under the headings "Business Overview," "Results of Operations," "Liquidity and Financial Condition," and "Critical Accounting Estimates." Our Annual Report on Form 10-K for 2020 also includes important information as to these factors in "Item 1. Business" under the headings "General," "Description of Business by Segment" and "Other Matters Relating to Our Business as a Whole," and in "Item 1A. Risk Factors". We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law. Additional information as to factors that may cause actual results to differ materially from those expressed or implied in the forward-looking statements is disclosed from time to time in our other filings with the SEC.

Management's Report on Internal Control over Financial Reporting

The management of Otis is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with accounting principles generally accepted in the United States of America. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements.

Management has assessed the effectiveness of Otis' internal control over financial reporting as of December 31, 2020. In making its assessment, management has utilized the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control - Integrated Framework (2013). Management concluded that based on its assessment, Otis' internal control over financial reporting was effective as of December 31, 2020. The effectiveness of Otis' internal control over financial reporting, as of December 31, 2020, has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included herein.

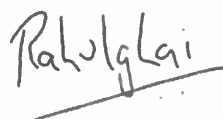
OTIS WORLDWIDE CORPORATION

(Registrant)



Judith F. Marks

President and Chief Executive Officer



Rahul Ghai

Executive Vice President and Chief Financial Officer



Michael P. Ryan

Vice President and Chief Accounting Officer

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Otis Worldwide Corporation

OPINIONS ON THE FINANCIAL STATEMENTS AND INTERNAL CONTROL OVER FINANCIAL REPORTING

We have audited the accompanying consolidated balance sheets of Otis Worldwide Corporation and its subsidiaries (the "Company") as of December 31, 2020 and 2019, and the related consolidated statements of operations, of comprehensive income, of changes in equity and of cash flows for each of the three years in the period ended December 31, 2020, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

BASIS FOR OPINIONS

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating

effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

DEFINITION AND LIMITATIONS OF INTERNAL CONTROL OVER FINANCIAL REPORTING

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

CRITICAL AUDIT MATTERS

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

REVENUE RECOGNITION - ESTIMATED COSTS AT COMPLETION FOR NEW EQUIPMENT CONTRACTS

As described in Notes 2 and 22, to the consolidated financial statements, the Company recognized \$5.4 billion of revenue from new equipment contracts for the year ended December 31, 2020. For new equipment contracts, equipment and installation are typically procured in a single contract providing the customer with a complete installed elevator or escalator unit. The combination of equipment and installation promises are typically a single performance obligation. For these performance obligations, revenue is typically recognized over time using costs incurred to date relative to total estimated costs at completion to measure progress. As disclosed by management, contract costs are usually incurred over a period of time, which can be several years, and the estimation of these costs requires management's

judgment. The long-term nature of the contracts, the complexity of the products and the scale of the projects can affect management's ability to estimate costs precisely. Management reviews cost estimates on significant new equipment contracts on a quarterly basis and, for others, no less frequently than annually or when circumstances change and warrant a modification to a previous estimate. Management records changes in contract estimates using the cumulative catch-up method and reviews changes in contract estimates for their impact on net sales or operating profit in the consolidated financial statements. Contract costs included in the calculation are comprised of labor, materials, subcontractors' costs or other direct costs and indirect costs, which include indirect labor costs.

The principal considerations for our determination that performing procedures relating to revenue recognition - estimated costs at completion for new equipment contracts is a critical audit matter are the significant judgment by management to determine the estimated costs at contract completion, which in turn led to significant auditor judgment, subjectivity and effort in performing procedures and evaluating audit evidence related to the estimated expected labor and indirect labor costs used in the development of estimated costs at contract completion.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the revenue recognition process, including controls over the determination of the estimated costs at contract completion and development of the significant assumptions related to the estimated expected labor and indirect labor costs. These procedures also included, among others, evaluating and testing management's process for developing and modifying estimated costs at contract completion for a sample of contracts, which included evaluating the reasonableness of significant assumptions related to the estimated expected labor and indirect labor costs considered by management specific to each contract. Evaluating the reasonableness of the estimated expected labor and indirect labor costs involved assessing management's ability to reasonably estimate costs at completion by (i) testing costs incurred to date and obtaining a sample of executed contracts and related change orders, (ii) performing a comparison of the originally estimated and actual costs incurred on similar completed equipment contracts, and (iii) evaluating the timely identification of circumstances that may warrant a modification to estimated total cost to complete.

PricewaterhouseCoopers LLP

Hartford, Connecticut

February 5, 2021

We have served as the Company's auditor since 2019.

Consolidated Statements of Operations

(dollars in millions, except per share amounts)

	2020	2019	2018
Net sales:			
Product sales	\$ 5,371	\$ 5,648	\$ 5,596
Service sales	7,385	7,470	7,319
	12,756	13,118	12,915
Costs and expenses:			
Cost of products sold	4,439	4,640	4,586
Cost of services sold	4,538	4,652	4,603
Research and development	152	163	181
Selling, general and administrative	1,924	1,810	1,735
	11,053	11,265	11,105
Other income (expense), net	(64)	(39)	25
Operating profit	1,639	1,814	1,835
Non-service pension cost (benefit)	6	(33)	(44)
Interest expense (income), net	122	(14)	(14)
Net income before income taxes	1,511	1,861	1,893
Income tax expense	455	594	683
Net income	1,056	1,267	1,210
Less: Noncontrolling interest in subsidiaries' earnings	150	151	161
Net income attributable to common shareholders	\$ 906	\$ 1,116	\$ 1,049
Earnings per share (Note 3):			
Basic	\$ 2.09	\$ 2.58	\$ 2.42
Diluted	\$ 2.08	\$ 2.58	\$ 2.42
Weighted average number of shares outstanding			
Basic shares	433.2	433.1	433.1
Diluted shares	434.6	433.1	433.1

See accompanying Notes to Consolidated Financial Statements

Consolidated Statements of Comprehensive Income

<i>(dollars in millions)</i>	2020	2019	2018
Net income	\$ 1,056	\$ 1,267	\$ 1,210
Other comprehensive income (loss):			
Foreign currency translation adjustments, net of tax	8	(26)	(126)
Pension and postretirement benefit plan adjustments:			
Net actuarial gain (loss)	(43)	(28)	(37)
Prior service credit	—	—	1
Amortization of actuarial loss and prior service credit	15	9	11
Other	(19)	(22)	5
	(47)	(41)	(20)
Tax benefit (expense)	11	9	4
Pension and postretirement benefit plan adjustments, net of tax	(36)	(32)	(16)
Change in unrealized cash flow hedging:			
Unrealized cash flow hedging gain (loss)	10	(3)	—
Adjustment for net (gain) loss realized and included in net income	(3)	—	—
Change in unrealized cash flow hedging, net of tax	7	(3)	—
Other comprehensive income (loss), net of tax	(21)	(61)	(142)
Comprehensive income	1,035	1,206	1,068
Less: Comprehensive income attributable to noncontrolling interest	(186)	(140)	(140)
Comprehensive income attributable to common shareholders	\$ 849	\$ 1,066	\$ 928

See accompanying Notes to Consolidated Financial Statements

Consolidated Balance Sheets

(amounts in millions, except par value)

	2020	2019
Assets		
Cash and cash equivalents	\$ 1,782	\$ 1,446
Accounts receivable (net of allowance for expected credit losses of \$161 and \$83)	3,148	2,861
Contract assets	458	529
Inventories, net	659	571
Other current assets	446	251
Total Current Assets	6,493	5,658
Future income tax benefits	334	373
Fixed assets, net	774	721
Operating lease right-of-use assets	542	535
Intangible assets, net	484	490
Goodwill	1,773	1,647
Other assets	310	263
Total Assets	\$ 10,710	\$ 9,687
Liabilities and (Deficit) Equity		
Short-term borrowings	\$ 701	\$ 34
Accounts payable	1,453	1,331
Accrued liabilities	1,977	1,739
Contract liabilities	2,542	2,270
Total Current Liabilities	6,673	5,374
Long-term debt	5,262	5
Future pension and postretirement benefit obligations	654	590
Operating lease liabilities	367	386
Future income tax obligations	321	695
Other long-term liabilities	634	311
Total Liabilities	13,911	7,361
Commitments and contingent liabilities (Note 21)		
Redeemable noncontrolling interest	83	95
Shareholders' (Deficit) Equity:		
Preferred Stock, \$0.01 par value, 125 shares authorized; None issued or outstanding	—	—
Common Stock and additional paid-in capital, \$0.01 par value, 2,000 shares authorized; 433.4 shares issued and outstanding	59	—
Accumulated deficit	(3,076)	—
UTC Net Investment	—	2,458
Accumulated other comprehensive income (loss)	(815)	(758)
Total Shareholders' (Deficit) Equity	(3,832)	1,700
Noncontrolling interest	548	531
Total (Deficit) Equity	(3,284)	2,231
Total Liabilities and (Deficit) Equity	\$ 10,710	\$ 9,687

See accompanying Notes to Consolidated Financial Statements

Consolidated Statements of Changes in Equity

(dollars in millions, except per share amounts)

	2020	2019	2018
Total (Deficit) Equity at January 1	\$ 2,231	\$ 2,106	\$ 2,532
Common Stock and Additional Paid-In Capital			
Balance at January 1	—	—	—
Issuance of common stock ^a	4	—	—
Stock-based compensation	52	—	—
Common Stock issued under employee plans	3	—	—
Balance at December 31	59	—	—
Accumulated Deficit			
Balance at January 1	—	—	—
Reclassification of UTC Net Investment (Deficit) ^a	(3,556)	—	—
Net income	741	—	—
Cash dividends declared (\$0.60, \$0.00 and \$0.00 per common share)	(260)	—	—
Acquisitions, disposals and other changes in noncontrolling interest	4	—	—
Other	(5)	—	—
Balance at December 31	(3,076)	—	—
UTC Net Investment (Deficit)			
Balance at January 1	2,458	2,277	2,552
Net transfers (to) from UTC and Separation-related transactions	(6,150)	(935)	(1,274)
Net income	165	1,116	1,049
Acquisitions, disposals and other changes in noncontrolling interest	—	—	(1)
Adoption of credit loss standard, net of tax (Note 6)	(25)	—	—
Adoption of revenue standard, net of tax (Note 2)	—	—	(49)
Issuance of common stock and reclassification of UTC Net Investment (Deficit) ^a	3,552	—	—
Balance at December 31	—	2,458	2,277
Accumulated Other Comprehensive Income (Loss)			
Balance at January 1	(758)	(708)	(587)
Other comprehensive income (loss), net of tax	(57)	(50)	(121)
Balance at December 31	(815)	(758)	(708)
Noncontrolling Interest			
Balance at January 1	531	537	567
Net income	150	151	161
Other comprehensive income (loss), net of tax	38	(8)	(13)
Dividends attributable to noncontrolling interest	(147)	(163)	(173)
Acquisitions, disposals and other changes in noncontrolling interest	(23)	7	(1)
Redeemable noncontrolling interest in subsidiaries earnings	(1)	7	(4)
Balance at December 31	548	531	537
Total (Deficit) Equity at December 31	\$ (3,284)	\$ 2,231	\$ 2,106
Redeemable Noncontrolling Interest			
Balance at January 1	\$ 95	\$109	\$ 131
Redeemable noncontrolling interest in subsidiaries' earnings	1	(7)	4
Other comprehensive income (loss), net of tax	(2)	(3)	(8)
Acquisitions, disposals and other changes in redeemable noncontrolling interest	(13)	—	(11)
Changes in redeemable noncontrolling interest redemption value	2	(4)	(7)
Balance at December 31	\$ 83	\$ 95	\$ 109

^a Upon Separation from UTC

See accompanying Notes to Consolidated Financial Statements

Consolidated Statements of Cash Flows

<i>(dollars in millions)</i>	2020	2019	2018
Operating Activities:			
Net income	\$ 1,056	\$ 1,267	\$ 1,210
Adjustments to reconcile net income to net cash flows provided by operating activities, net of acquisitions:			
Depreciation and amortization	191	180	190
Deferred income tax benefit	(51)	(8)	127
Stock compensation cost	63	37	38
Loss on fixed asset impairment	71	—	—
Loss on disposal of business	—	26	—
Change in:			
Accounts receivable, net	(163)	(191)	(196)
Contract assets and liabilities, current	282	97	9
Inventories, net	(76)	60	24
Other current assets	28	30	(11)
Accounts payable	20	6	124
Accrued liabilities	(14)	(34)	42
Pension contributions	(64)	(32)	(34)
Other operating activities, net	137	31	27
Net cash flows provided by operating activities	1,480	1,469	1,550
Investing Activities:			
Capital expenditures	(183)	(145)	(172)
Investments in businesses, net of cash acquired (Note 9)	(53)	(47)	(50)
Investments in equity securities	(51)	—	—
Receipts (payments) on settlements of derivative contracts	(69)	(5)	3
Other investing activities, net	3	(6)	18
Net cash flows used in investing activities	(353)	(203)	(201)
Financing Activities:			
Proceeds from issuance of long-term debt	6,300	—	—
Payment of long-term debt issuance costs	(43)	—	—
Repayment of long-term debt	(1,000)	—	—
Increase in short-term borrowings, net	647	6	11
Net transfers to UTC	(6,330)	(972)	(1,312)
Dividends paid on Common Stock	(260)	—	—
Dividends paid to noncontrolling interest	(149)	(163)	(173)
Other financing activities, net	(9)	(4)	(23)
Net cash flows used in financing activities	(844)	(1,133)	(1,497)
Effect of foreign exchange rate changes on cash and cash equivalents	59	(20)	(77)
Net increase in cash and cash equivalents	342	113	(225)
Cash, cash equivalents and restricted cash, beginning of year	1,459	1,346	1,571
Cash, cash equivalents and restricted cash, end of year	1,801	1,459	1,346
Less: Restricted cash	19	13	17
Cash and cash equivalents, end of period	\$ 1,782	\$ 1,446	\$ 1,329
Supplemental cash flow information:			
Interest paid (including related party of \$0, \$18 and \$20)	\$ 81	\$ 18	\$ 20
Income taxes paid, net of (refunds) (including related party of \$(15), \$255 and \$186)	561	632	607

See accompanying Notes to Consolidated Financial Statements

Notes to Consolidated Financial Statements

NOTE 1: BUSINESS OVERVIEW AND SEPARATION FROM UNITED TECHNOLOGIES CORPORATION

Otis (as defined below) is the world's largest elevator and escalator manufacturing, installation and service company. Our operations are classified into two segments: New Equipment and Service. Through the New Equipment segment, we design, manufacture, sell and install a wide range of passenger and freight elevators, as well as escalators and moving walkways, for residential and commercial building and infrastructure projects. The Service segment provides maintenance and repair services for both our products and those of other manufacturers, and provides modernization services to upgrade elevators and escalators.

On November 26, 2018, United Technologies Corporation, subsequently renamed to Raytheon Technologies Corporation on April 3, 2020 ("UTC" or "RTX", as applicable), announced its intention to spin-off its Otis reportable segment and its Carrier reportable segment into two separate publicly-traded companies (the "Separation"). On April 3, 2020, the Company became an independent publicly-traded company through a pro-rata distribution of 0.5 shares of Common Stock for every share of UTC common stock held at the close of business on the record date of March 19, 2020 ("Distribution"). Otis began to trade as a separate public company (New York Stock Exchange ("NYSE"): OTIS) on April 3, 2020.

Unless the context otherwise requires, references to "Otis", "we", "us", "our" and "the Company" refer to (i) Otis Worldwide Corporation's business ("Business") prior to the Separation and (ii) Otis Worldwide Corporation and its subsidiaries following the Separation, as applicable. References to "UTC" relate to pre-Separation matters, and references to "RTX" relate to post-Separation matters.

The Separation was completed pursuant to a Separation and Distribution Agreement ("Separation Agreement") and other agreements with UTC related to the Separation, including but not limited to a transition services agreement (the "Transition Services Agreement" or "TSA"), a tax matters agreement (the "Tax Matters Agreement" or "TMA"), an employee matters agreement (the "Employee Matters Agreement" or "EMA") and an intellectual property agreement (the "Intellectual Property Agreement"). For further discussion on these agreements, see Note 5, "Related Parties".

NOTE 2: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Principles of Consolidation and Basis of Presentation. Prior to the Separation on April 3, 2020, our historical financial statements were prepared on a standalone combined basis and were derived from the consolidated financial statements and accounting records of UTC. For the period subsequent to April 3, 2020, our financial statements are presented on a consolidated basis as the Company became a standalone public company (collectively, the financial statements for all periods presented, including the historical results of the Company prior to April 3, 2020, are now referred to as "Consolidated Financial Statements" to reflect this change). They have been prepared in accordance with the instructions to Form 10-K.

Prior to the Separation on April 3, 2020, the Consolidated Statements of Operations included all revenues and costs directly attributable to Otis, including costs for facilities, functions and services used by Otis. Costs for certain functions and services performed by centralized UTC organizations were directly charged to Otis based on specific identification when possible or based on a reasonable allocation driver such as net sales, headcount, usage or other allocation methods. All charges and allocations for facilities, functions and

services performed by UTC organizations have been deemed settled in cash by Otis to UTC in the period in which the cost was recorded on the Consolidated Statements of Operations. Current and deferred income taxes were determined based on the standalone results of Otis. However, because the Company was included in our former parent UTC's tax group in certain jurisdictions, the Company's actual tax balances may differ from those reported. The Company's portion of its domestic income taxes and certain income taxes for jurisdictions outside the U.S. are deemed to have been settled in the period the related tax expense was recorded prior to the Separation.

The Consolidated Financial Statements include the accounts of Otis and its controlled subsidiaries, as well as entities where Otis has a variable interest and is the primary beneficiary as defined by Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 810, *Consolidation*. The factors we use to determine the primary beneficiary of a variable interest entity ("VIE") may include decision authority, control over management of day-to-day operations and the amount of our equity investments in relation to others' investments.

All significant intracompany accounts and transactions within the Company have been eliminated in the preparation of the Consolidated Financial Statements. Prior to the Separation, the Consolidated Financial Statements of the Company include assets and liabilities that have been determined to be specifically or otherwise attributable to the Company.

Certain amounts for prior years have been reclassified to conform to the current year presentation, which are immaterial.

Use of Estimates. The preparation of the Consolidated Financial Statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities. In addition, estimates and assumptions may impact the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

We assessed certain accounting matters that generally require consideration of forecasted financial information in the context of the information reasonably available to us and the unknown future impacts of coronavirus ("COVID-19") at December 31, 2020 and through the date of this report. The accounting matters assessed included, but were not limited to, our allowance for credit losses, the carrying value of our goodwill and other long-lived assets, financial assets and revenue recognition. While there was not a material impact to our Consolidated Financial Statements as of and for the year ended December 31, 2020 resulting from our assessments of these matters, future assessment of our current expectations at that time of the magnitude and duration of COVID-19, as well as other factors, could result in material impacts to our Consolidated Financial Statements in future reporting periods.

Risks and Uncertainties. In March 2020, the World Health Organization declared the outbreak of the novel strain of COVID-19, a global pandemic and recommended a number of restrictive measures to contain the spread, which were implemented to different degrees by governments across the world. As the global pandemic continues, the Company continues to closely monitor and manage the impact of the COVID-19 pandemic on its business globally. It is difficult to estimate at this time the duration and extent of the continued impact of the pandemic on the Company's business, financial position, cash flow and results of operations. The results of our operations and overall financial performance were impacted during the year ended December 31, 2020.

Due to existing conditions and uncertainty, COVID-19 could have an impact on our business, cash flow and results of operations into 2021. The extent of the impact will depend largely on future developments, which are highly uncertain, including the emergence of additional information concerning the severity of the outbreak, timing, efficacy, availability and distribution of vaccines, actions taken by government authorities to further contain the outbreak or address its impact and its longer-term impacts on the global economy, among other factors.

Cash and Cash Equivalents. Cash and cash equivalents includes cash on hand, demand deposits and short-term cash investments that are highly liquid in nature and have original maturities of three months or less. Prior to the Separation, the Company participated in UTC's centralized cash management and financing programs. See Note 5, "Related Parties" for additional information.

On occasion, we are required to maintain cash deposits with certain banks with respect to contractual or other legal obligations. Included in Other current assets and Other assets on the Consolidated Balance Sheets is approximately \$19 million and \$13 million of such restricted cash as of December 31, 2020 and 2019, respectively.

Accounts Receivable. The Company records accounts receivables when the right to consideration becomes unconditional. We regularly evaluate the collectability of our accounts receivable and maintain reserves for expected credit losses. See Note 6, "Accounts Receivable, Net" for additional information on the Company's policy for evaluation of expected credit losses. We do not believe that accounts receivable represent significant concentrations of credit risk because of the diversified portfolio of individual customers and geographic areas.

Retainage and Unbilled Receivables. Current and long-term accounts receivable as of December 31, 2020 and 2019 include retainage of \$61 million and \$59 million, respectively, and unbilled receivables of \$104 million and \$108 million, respectively. Retainage represents amounts that, pursuant to the applicable contract, are not due until after project completion and acceptance by the customer. Unbilled receivables represent revenues that are earned but not currently billable to the customer under the terms of the contract. These items are expected to be billed and collected in the ordinary course of business. Unbilled receivables where we have an unconditional right to payment are included in Accounts receivable, net as of December 31, 2020 and 2019.

Customer Financing Notes Receivable. Through financing arrangements with our customers, we extend payment terms, which are generally not more than one year in duration. See Note 6, "Accounts Receivable, Net" for additional information.

Factoring. The Company may sell certain trade accounts and notes receivable to lending institutions to manage credit risk. Financial assets sold under these arrangements are excluded from Accounts receivable, net in the Company's Consolidated Balance Sheets at the time of sale if the Company has surrendered control over the related assets. Whether control has been relinquished requires, among other things, an evaluation of relevant legal considerations and an assessment of the nature and extent of the Company's continuing involvement with the assets transferred. Gains and losses stemming from transfers reported as sales are included in Interest expense (income), net in the accompanying Consolidated Statements of Operations.

Contract Assets and Liabilities. Contract assets and liabilities represent the difference in the timing of revenue recognition from receipt of cash from our customers and billings. Contract assets reflect revenue

recognized and performance obligations satisfied in advance of customer billing. Performance obligations partially satisfied in advance of customer billings are included in Contract assets, current.

Contract liabilities relate to payments received in advance of the satisfaction of performance under the contract. We receive payments from customers based on the terms established in our contracts. See Note 4, "Revenue Recognition" for further discussion of contract assets and liabilities.

Inventories. Inventories are stated at the lower of cost or estimated realizable value and are primarily based on a first-in, first-out ("FIFO") method. Valuation reserves for excess, obsolete and slow-moving inventory are estimated by comparing the inventory levels of individual parts to both future sales forecasts or production requirements and historical usage rates in order to identify inventory where the resale value or replacement value is less than inventoriable cost.

Fixed Assets. Fixed assets, including software capitalized for internal-use, are recorded at cost. Depreciation of fixed assets is computed over the fixed assets' useful lives on a straight-line basis, unless another systematic and rational basis is more representative of the fixed asset's pattern of use. See Note 8, "Fixed Assets" for further details of useful lives.

Internal-use software. The Company capitalizes direct costs of services used in the development of, and external software acquired for use as, internal-use software. Amounts capitalized are amortized over a period ranging from three to five years, on a straight-line basis, unless another systematic and rational basis is more representative of the software's use. Amounts are reported as a component of Machinery and equipment.

Asset Retirement Obligations. The Company records the fair value of legal obligations associated with the retirement of tangible long-lived assets in the period in which the legal obligations are determined to exist. Upon initial recognition of a liability, the Company capitalizes the cost of the asset retirement obligation by increasing the carrying amount of the related long-lived asset. Over time, the liability is adjusted for changes in its present value and the capitalized cost is depreciated over the useful life of the related asset.

Fair Value of Financial Instruments. The fair value hierarchy is based on inputs to valuation techniques that are used to measure fair value that are either observable or unobservable. Observable inputs reflect assumptions market participants would use in pricing an asset or liability based on market data obtained from independent sources, while unobservable inputs reflect a reporting entity's pricing based upon their own market assumptions. The fair value hierarchy consists of the following three levels:

Level I – Quoted prices for identical instruments in active markets.

Level II – Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations whose inputs are observable or whose significant value drivers are observable.

Level III – Instruments whose significant value drivers are unobservable.

The carrying amount of current trade receivables, accounts payable and accrued expenses approximates fair value due to the short maturity (less than one year) of the instruments.

Equity Method Investments. Investments in which we have the ability to exercise significant influence, but do not control, are accounted for under the equity method of accounting and are included in Other

assets on the Consolidated Balance Sheets. Under this method of accounting, our share of the net earnings or losses of the investee is included in Other income (expense), net in the Consolidated Statements of Operations since the activities of the investee are closely aligned with the operations of the Company. We evaluate our equity method investments whenever events or changes in circumstance indicate that the carrying amounts of such investments may be impaired. If a decline in the value of an equity method investment is determined to be other than temporary, a loss is recorded in earnings in the current period.

Business Combinations. We account for transactions that are classified as business combinations in accordance with the FASB ASC Topic 805: *Business Combinations*. Once a business is acquired, the fair values of the identifiable assets acquired and liabilities assumed are determined with the excess cost recorded to goodwill. As required, preliminary fair values are determined once a business is acquired, with the final determination of the fair values being completed within the one-year measurement period from the date of acquisition.

Goodwill, Intangible Assets and Long-Lived Assets. Goodwill represents costs in excess of fair values assigned to the underlying net assets of acquired businesses. Intangible assets consist of service portfolios, patents, trademarks/trade names, customer relationships and other intangible assets. Acquired intangible assets are recognized at fair value during acquisition accounting and then amortized to Cost of products and services sold and Selling, general and administrative over the applicable useful lives.

Goodwill and Indefinite-Lived Intangible Assets. Goodwill and intangible assets deemed to have indefinite lives are not amortized. Goodwill and indefinite-lived intangible assets are subject to impairment testing annually or when a triggering event occurs using the guidance and criteria described in FASB ASC Topic 350: *Intangibles – Goodwill and Other*. This testing compares carrying values to fair values and, when appropriate, the carrying value of these assets is reduced to fair value.

We test goodwill for impairment at a level within the Company referred to as the reporting unit, which is one level below the business segment level. When testing goodwill for impairment, the Company may first assess qualitative factors. If an initial qualitative assessment identified that it is more likely than not that the fair value of a reporting unit is less than its carrying value, additional quantitative testing is performed. The Company may also elect to skip the qualitative testing and proceed directly to the quantitative testing. If the quantitative testing indicates that goodwill is impaired, an impairment charge is recognized based on the difference between the reporting unit's carrying value and its fair value. When it is determined that a quantitative analysis is required, the Company primarily utilizes a discounted cash flow methodology to calculate the fair value of its reporting units. The Company completed its most recent annual impairment testing as of July 1, 2020, and determined that no adjustment to goodwill was necessary since the fair value of each reporting unit was significantly in excess of its respective carrying value.

Finite-Lived Intangible Assets and Long-Lived Assets. Useful lives of finite-lived intangible assets are estimated based upon the nature of the intangible asset. These intangible assets are amortized based on the pattern in which the economic benefits of the intangible assets are consumed or if straight-line amortization approximates the pattern of economic benefit, a straight-line amortization method may be used. The range of estimated useful lives is as follows:

Purchased service portfolios	5 to 25 years
Patents, trademarks/trade names	4 to 40 years
Customer relationships and other	1 to 20 years

The Company evaluates the potential impairment of long-lived assets, including finite-lived intangible assets whenever events or changes in circumstances indicate that the related carrying amounts may not be recoverable. If the carrying value of other long-lived assets held and used exceeds the sum of the undiscounted expected future cash flows, the carrying value is written down to fair value. See Note 8, "Fixed Assets" and Note 9, "Business Acquisitions, Goodwill and Intangible Assets" for additional information regarding intangible assets and other long-lived assets.

Income Taxes. Income taxes as presented in the Consolidated Financial Statements of the Company for periods prior to the Separation attribute current and deferred income taxes of UTC to the Company's stand-alone financial statements in a manner that is systematic, rational and consistent with the asset and liability method prescribed by FASB ASC Topic 740: *Income Taxes* ("ASC 740"). Accordingly, the Company's income tax provision for periods prior to the Separation was prepared following the separate return method. The separate return method applies ASC 740 to the stand-alone financial statements of each member of the consolidated group as if the group members were a separate taxpayer and a stand-alone enterprise. The calculation of our income taxes on a separate return basis requires a considerable amount of judgment and use of both estimates and allocations. As a result, actual transactions included in the consolidated financial statements of UTC may not be included in the Consolidated Financial Statements of the Company. Similarly, the tax treatment of certain items reflected in the Consolidated Financial Statements of the Company may not be reflected in the consolidated financial statements and tax returns of UTC. Therefore, such items as net operating losses, credit carry-forwards and valuation allowances may exist in the stand-alone financial statements that may or may not exist in UTC's consolidated financial statements. As such, the income taxes of the Company as presented in the Consolidated Financial Statements prior to the Separation may not be indicative of the income taxes that the Company will report in the future.

Certain operations of the Company have historically been included in a combined return with other UTC entities before the Separation. Current obligations for taxes in certain jurisdictions, where the Company files a combined tax return with UTC, are deemed settled with UTC for purposes of the Consolidated Financial Statements for periods prior to the Separation. Current obligations for tax in jurisdictions where the Company does not file a combined return with UTC, including certain foreign jurisdictions and certain U.S. states, are recorded within Accrued liabilities on the Consolidated Balance Sheets. On December 22, 2017, the U.S. Tax Cuts and Jobs Act ("TCJA") was enacted. As a result, income tax attributable to previously undistributed earnings of the Company's international subsidiaries recognized in 2017 is recorded within Accrued liabilities and Future income tax obligations on the Consolidated Balance Sheets pursuant to UTC's election to pay the tax over time, for which Otis will settle with UTC (or RTX). Additionally, under the terms of the TMA, Otis will indemnify RTX for a percentage of the toll charge installment payments due after the Separation. As a result, a portion of Otis' Future income tax obligations corresponding to the toll charge has been reclassified as a contractual indemnity obligation within Other long-term liabilities on the Consolidated Balance Sheet as of December 31, 2020. See Note 5, "Related Parties" and Note 15, "Income Taxes" for additional information.

In the ordinary course of business, there is inherent uncertainty in quantifying our income tax positions. We assess our income tax positions and record tax benefits for all years subject to examination based upon management's evaluation of the facts, circumstances and information available at the reporting date. For those tax positions where it is more-likely-than-not that a tax benefit will be sustained, we have recorded the largest amount of tax benefit with a greater than 50% likelihood of being realized upon

ultimate settlement with a taxing authority that has full knowledge of all relevant information. For those income tax positions where it is not more-likely-than-not that a tax benefit will be sustained, no tax benefit has been recognized in the financial statements. Where applicable, associated interest expense has also been recognized. We recognize accrued interest related to unrecognized tax benefits in Interest expense (income), net. Penalties, if incurred, would be recognized as a component of Income tax expense.

The TCJA contains a new law that subjects the Company to a tax on Global Intangible Low-Taxed Income ("GILTI"), beginning in 2018. GILTI is a tax on foreign income in excess of a deemed return on tangible assets of foreign corporations. The FASB has provided that companies subject to GILTI have the option to account for the GILTI tax as a period cost if and when incurred, or to recognize deferred taxes for temporary differences, including outside basis differences, expected to reverse as GILTI. We have elected to account for GILTI as a period cost as incurred.

Revenue Recognition. We adopted the FASB ASC Topic 606: *Revenue from Contracts with Customers* and its related amendments, (referred to, collectively, as "ASC 606") effective January 1, 2018, and elected the modified retrospective approach. The results for periods before 2018 were not adjusted for the new standard and the cumulative effect of the change in accounting was recognized through UTC Net Investment at the date of adoption.

The Company's revenue streams include new equipment, maintenance and repair, and modernization. New equipment, modernization and repair services revenue are typically recognized over time as we are enhancing an asset the customer controls. Maintenance revenue is recognized on a straight-line basis over the life of the maintenance contract.

New Equipment, Modernization and Repair services. For new equipment and modernization transactions, equipment and installation are typically procured in a single contract providing the customer with a complete installed elevator or escalator unit. The combination of equipment and installation promises are typically a single performance obligation. For repair services, the customer typically contracts for specific short-term services which form a single performance obligation.

For these performance obligations, revenue is recognized over time using costs incurred to date relative to total estimated costs at completion to measure progress. Incurred costs represent work performed, which corresponds with and best depicts transfer of control or the enhancement of the customer's assets. Contract costs included in the calculation are comprised of labor, materials, subcontractors' costs or other direct costs and indirect costs, which include indirect labor costs. Specific to new equipment and modernization arrangements, the Company, based on project progression, reviews cost estimates on significant contracts on a quarterly basis, and for others, no less frequently than annually or when circumstances change and warrant a modification to a previous estimate. These estimates form the basis for the amount of revenue to be recognized and include the latest updated total transaction price, costs and risks for each contract. These estimates for our ongoing contracts may materially change due to the change and completions of the contract scopes, cost estimates and customers' plans, among other factors.

For performance obligations recognized under the cost to cost method, we record changes in contract estimates using the cumulative catch-up method. Modifications are recognized as a cumulative catch-up or treated as a separate accounting contract if the modification adds distinct goods or services and the modification is priced at its stand-alone selling price.

Maintenance. Our customers purchase maintenance contracts which include services such as required periodic maintenance procedures, preventive services and stand ready obligations to remediate issues with the elevator/escalator when and if they arise. Given the continuous nature of these services throughout the year, we recognize revenue on maintenance contracts on a straight-line basis which aligns with the cost profile of these services. Contractual changes are typically recognized prospectively as most modifications are extensions of the existing arrangement.

Transaction Price Considerations. Our contracts typically include fixed payments which are generally received as we progress under our contracts. As a result, we have not identified any significant financing elements in our contract, and our contracts do not have significant estimates related to variable consideration except in the case of a project having an underlying performance issue, which is rare. In situations where multiple performance obligations in a single contract (e.g., new equipment and maintenance) exist, the transaction price is allocated to each performance obligation in proportion to their stand-alone selling prices. Estimates are made to account for changes in transaction prices attributable to pricing disputes that occur subsequent to the inception of contracts, based upon historical experience and the status of contracts.

Certain costs to obtain or fulfill contracts. Certain costs to obtain or fulfill a contract with a customer must be capitalized, to the extent recoverable from the associated contract margin, and subsequently amortized as the products or services are delivered to the customer. Sales commissions related to new equipment, modernization and maintenance contracts, excluding renewals, are capitalized as contract fulfillment costs and are amortized consistent with the pattern of transfer of the goods or services. Customer contract costs, which do not qualify for capitalization as contract fulfillment costs, are expensed as incurred.

Loss Contracts. Loss provisions on contracts are recognized to the extent that estimated contract costs exceed the estimated consideration from the products contemplated under the contractual arrangement. For new commitments, we generally record loss provisions at contract signing. For existing commitments, anticipated losses on contractual arrangements are recognized in the period in which losses become probable.

Self-Insurance. The Company is primarily self-insured for a number of risks including, but not limited to, workers' compensation, general liability, automobile liability, property and employee-related healthcare benefits. The Company has obtained insurance coverage for amounts exceeding individual and aggregate loss limits. The Company accrues for known future claims and incurred but not reported losses within Accrued liabilities and Other long-term liabilities on the Consolidated Balance Sheets, totaling \$299 million and \$269 million as of December 31, 2020 and 2019, respectively.

Derivatives and Hedging Activity. We have used derivative instruments, principally forward contracts, to help manage certain foreign currency exposures. Derivative instruments are viewed as risk management tools by us and are not used for trading or speculative purposes. By their nature, all financial instruments involve market and credit risks. We enter into derivative and other financial instruments with major investment grade financial institutions and have policies to monitor the credit risk of those counterparties. We limit counterparty exposure and concentration of risk by diversifying counterparties. While there can be no assurance, we do not anticipate any material non-performance by any of these counterparties.

Derivatives used for hedging purposes may be designated and effective as a hedge of the identified risk exposure at the inception of the contract. All derivative instruments are recorded on the Consolidated Balance Sheets at fair value. Derivatives used to hedge foreign currency denominated balance sheet items

are reported directly in earnings along with offsetting transaction gains and losses on the items being hedged. Derivatives used to hedge forecasted cash flows associated with foreign currency commitments or forecasted commodity purchases may be accounted for as cash flow hedges, as deemed appropriate. Gains and losses on derivatives designated as cash flow hedges are recorded in other comprehensive income (loss), net of tax and reclassified to earnings as a component of product sales or expenses, as applicable, when the hedged transaction occurs. Gains and losses on derivatives designated as cash flow hedges are recorded in Other operating activities, net within the Consolidated Statement of Cash Flows. To the extent that a previously designated hedging transaction is no longer an effective hedge, any ineffectiveness measured in the hedging relationship is recorded currently in earnings in the period it occurs.

As discussed in Note 17, "Financial Instruments" to the Consolidated Financial Statements as of December 31, 2020 we have €420 million of Euro-denominated commercial paper, which qualifies as a net investment hedge against our investments in European businesses. We evaluate the effectiveness of the net investment hedge each quarter, and as of December 31, 2020, the net investment hedge is deemed to be effective.

In addition, the Company periodically enters into sales contracts denominated in currencies other than the functional currency of the parties to the transaction. The Company accounts for these transactions separately valuing the embedded derivative component of these contracts. The changes in the fair value of these embedded derivatives are recorded in Other income (expense), net in the Consolidated Statements of Operations. For the years ended December 31, 2020, 2019 and 2018, Other income (expense), net included a loss of \$3 million, a loss of \$27 million and a gain of \$12 million, respectively, related to the changes in fair value of embedded derivatives.

To the extent the hedge accounting criteria are not met, the foreign currency forward contracts are utilized as economic hedges and changes in the fair value of these contracts are recorded currently in earnings in the period in which they occur. Additional information pertaining to foreign currency forward contracts and net investment hedging is included in Note 17, "Financial Instruments".

Environmental. Environmental investigatory, remediation, operating and maintenance costs are accrued when it is probable that a liability has been incurred and the amount can be reasonably estimated. The most likely cost to be incurred is accrued based on an evaluation of currently available facts with respect to each individual site, including current laws, regulations and prior remediation experience. Where no amount within a range of estimates is more likely, the minimum is accrued. Liabilities with fixed or reliably determinable future cash payments are discounted. Accrued environmental liabilities are not reduced by potential insurance reimbursements. See Note 21, "Contingent Liabilities" for additional details on the environmental remediation activities.

Research and Development. These costs are expensed in the period incurred and are shown on a separate line of the Consolidated Statements of Operations. Research and development expenses, covering research and the advancement of potential new and improved products and their uses, primarily include salaries and other employment costs.

Other Income (Expense), Net. Other income (expense), net includes the impact of changes in the fair value and settlement of embedded and foreign exchange derivatives, gains or losses on sale of businesses and fixed assets, earnings from equity method investments, fair value changes on equity securities, impairments, non-recurring Separation-related expenses, gains on insurance recoveries and certain other infrequent operating income and expense items.

Foreign Exchange. We conduct business in many different currencies and, accordingly, are subject to the inherent risks associated with foreign exchange rate movements. The financial position and results of operations of substantially all of our foreign subsidiaries are measured using the local currency as the functional currency. Foreign currency denominated assets and liabilities are translated into US dollars at the exchange rates existing at the respective balance sheet dates, and income and expense items are translated at the average exchange rates during the respective periods. The aggregate effects of translating the balance sheets of these subsidiaries are deferred within Accumulated other comprehensive income (loss).

Pension and Postretirement Obligations. Guidance under FASB ASC Topic 715: *Compensation – Retirement Benefits* requires balance sheet recognition of the overfunded or underfunded status of pension and postretirement benefit plans. Under this guidance, actuarial gains and losses, prior service costs or credits and any remaining transition assets or obligations that have not been recognized under previous accounting standards must be recognized in other comprehensive income (loss), net of tax effects, until they are amortized as a component of net periodic benefit cost. Pension and postretirement obligation balances and related costs reflected within the Consolidated Financial Statements include both costs directly attributable to plans dedicated to Otis, as well as an allocation of costs for Otis employees' participation in UTC's plans prior to Separation. See Note 13, "Employee Benefit Plans" for additional information.

Noncontrolling Interest. Ownership interest in the Company's subsidiaries held by parties other than the Company are presented separately from Shareholders' (Deficit) Equity as "Noncontrolling interest" within equity on the Consolidated Balance Sheets. The amount of net income attributable to common shareholders and the noncontrolling interest are both presented on the Consolidated Statements of Operations.

All noncontrolling interest with redemption features, such as put options, that are not solely within our control (redeemable noncontrolling interest) are reported in the mezzanine section of the Consolidated Balance Sheets, between Liabilities and equity (deficit), at the greater of redemption value or initial carrying value.

The activity attributable to noncontrolling interest and redeemable noncontrolling interest for the years ended December 31, 2020, 2019 and 2018 are presented in the Consolidated Statements of Changes in Equity.

UTC Net Investment. For periods prior to the Separation, UTC's Net Investment in the Company is presented as "UTC Net Investment" on the Consolidated Balance Sheets. The Consolidated Statements of Changes in Equity include corporate allocations, net cash transfers and other property transfers between our former parent UTC and the Company, as well as related party receivables, payables and long-term debt between the Company and other UTC affiliates that were settled on a current basis. Prior to the Separation, UTC performed cash management and other treasury-related functions on a centralized basis for nearly all of its legal entities, which includes the Company, and, consequently, the net cash generated by the Company in legal entities that participated in UTC's centralized cash management and financing programs was transferred to UTC through the related party accounts. See Note 5, "Related Parties" for additional information.

Recent Accounting Pronouncements

In June 2016, the FASB issued ASU 2016-13, Financial Instruments - Credit Losses (Topic 326): *Measurement of Credit Losses on Financial Instruments*. We adopted this standard effective January 1, 2020 utilizing a modified retrospective approach, resulting in recording a cumulative-effect non-cash after-tax adjustment to retained earnings as of January 1, 2020, as discussed further in Note 6, "Accounts Receivable, Net."

In August 2018, the FASB issued ASU 2018-13, Fair Value Measurement (Topic 820): *Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement*. The new standard removes the disclosure requirements for the amount of and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy. The provisions of this ASU are effective for years beginning after December 15, 2019, with early adoption permitted. The Company adopted this standard effective January 1, 2020. The adoption of this ASU did not have a material impact on our Consolidated Financial Statements.

In August 2018, the FASB issued ASU 2018-15, Intangibles—Goodwill and Other—Internal-Use Software (Subtopic 350-40): *Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract*. The new standard provides updated guidance surrounding implementation costs associated with cloud computing arrangements that are service contracts. The provisions of this ASU are effective for years beginning after December 15, 2019. The Company adopted this standard prospectively effective January 1, 2020. The adoption of this ASU did not have a material impact on our Consolidated Financial Statements.

In February 2018, the FASB issued ASU 2018-02, *Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income (Topic 220)*. The new standard allows companies to reclassify to retained earnings the stranded tax effects in Accumulated other comprehensive income from the then-newly-enacted TCJA. The new standard is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years, with early adoption permitted. The Company adopted the standard and elected to reclassify the income tax effects of the TCJA from Accumulated other comprehensive (loss) to UTC Net Investment effective January 1, 2019. The adoption of this standard did not have a material impact on our Consolidated Financial Statements.

In August 2018, the FASB issued ASU 2018-14, Compensation—Retirement Benefits—Defined Benefit Plans - *General (Subtopic 715-20): Disclosure Framework—Changes to the Disclosure Requirements for Defined Benefit Plans*. The new standard includes updates to the disclosure requirements for defined benefit plans including several additions, deletions and modifications to the disclosure requirements. The provisions of this ASU are effective for years ending after December 15, 2020, with early adoption permitted. The Company adopted this standard effective January 1, 2020. The adoption of this ASU did not have a material impact on our Consolidated Financial Statements.

Future Accounting Pronouncements

In December 2019, the FASB issued ASU 2019-12, Income Taxes (Topic 740): *Simplifying the Accounting for Income Taxes*. The amendments in this update remove certain exceptions of Topic 740 including: exception to the incremental approach for intraperiod tax allocation when there is a loss from continuing operations and income or gain from other items; exception to the requirement to recognize a deferred tax liability for equity method investments when a foreign subsidiary becomes an equity method investment; exception to the ability not to recognize a deferred tax liability for a foreign subsidiary when a foreign equity method

investment becomes a subsidiary; exception to the general methodology for calculating income taxes in an interim period when a year-to-date loss exceeds the anticipated loss for the year. There are also additional areas of guidance in regards to: franchise and other taxes partially based on income and the interim recognition of enactment of tax laws and rate changes. The provisions of this ASU are effective for years beginning after December 15, 2020, with early adoption permitted. We do not expect this standard to have a material impact on our Consolidated Financial Statements.

In March 2020, the FASB issued ASU 2020-04, Reference Rate Reform (Topic 848): *Facilitation of the Effects of Reference Rate Reform on Financial Reporting* ("ASU 2020-04"), which provides temporary optional expedients and exceptions for applying generally accepted accounting principles to contracts, hedging relationships and other transactions affected by reference rate reform if certain criteria are met. The amendments in ASU 2020-04 apply only to contracts, hedging relationships, and other transactions that reference LIBOR or another reference rate expected to be discontinued because of reference rate reform. ASU 2020-04 is currently effective and upon adoption may be applied prospectively to contract modifications made on or before December 31, 2022. We are currently evaluating the impact of adopting this standard but do not expect it to have a material impact on our Consolidated Financial Statements.

NOTE 3: EARNINGS PER SHARE

On April 3, 2020, the date of consummation of the Separation, 433,079,455 shares of the Common Stock, par value \$0.01 per share, were distributed to UTC shareholders of record as of March 19, 2020. This share amount is being utilized for the calculation of basic and diluted earnings per share for all periods presented prior to the Separation as all shares were owned by UTC prior to the Separation. For the 2019 and 2018 calculations, these shares are treated as issued and outstanding at January 1, 2019 and 2018 for purposes of calculating historical basic and diluted earnings per share.

Prior to the Separation, Otis employees participated in UTC's equity incentive plans, pursuant to which they were granted stock options, stock appreciation rights, restricted stock units, and performance-based restricted stock units. All awards granted under these plans were related to UTC common shares. Upon Separation, outstanding awards held by Otis employees under UTC's equity incentive plans were converted in accordance with the EMA using the conversion ratios set forth in the EMA. Depending on whether the awards held on the Separation date were in an unvested or vested status, Otis employees either received converted awards solely in Otis based shares (unvested status) or a combination of Otis, UTC and Carrier share-based awards (vested status). Former Otis employees, and current and former legacy UTC and Carrier employees, who on the Separation date were holding outstanding UTC awards in a vested status also received a combination of Otis, UTC and Carrier awards post-spin. The conversion methodology used was calculated in accordance with the EMA and with the purpose of maintaining the aggregate intrinsic value of the award immediately after the Separation when compared to the aggregate intrinsic value immediately prior to the Separation. See Note 13, "Employee Benefit Plans" for further detail.

For the purpose of the below diluted earnings per share computation, we only included the units associated with the converted Otis share-based awards. These awards were assumed to be outstanding beginning from the Separation date.

<i>(dollars in millions, except per share amounts; shares in millions)</i>	2020	2019	2018
Net income attributable to common shareholders	\$ 906	\$ 1,116	\$ 1,049
Basic weighted average number of shares outstanding	433.2	433.1	433.1
Stock awards and equity units (share equivalent)	1.4	—	—
Diluted weighted average number of shares outstanding	434.6	433.1	433.1

Earnings Per Share of Common Stock:

Basic	\$ 2.09	\$ 2.58	\$ 2.42
Diluted	\$ 2.08	\$ 2.58	\$ 2.42

The computation of diluted earnings per share excludes the effect of the potential exercise of stock awards, including stock appreciation rights and stock options, when the average market price of the Common Stock is lower than the exercise price of the related stock awards during the period because the effect would be anti-dilutive. In addition, the computation of diluted earnings per share excludes the effect of the potential exercise of stock awards when the awards assumed proceeds exceed the average market price of the common shares during the period. For 2020, there were 4.6 million of anti-dilutive stock awards excluded from the computation.

NOTE 4: REVENUE RECOGNITION

We account for revenue in accordance with ASC 606. In addition to the following disclosures, Note 22, "Segment Financial Data" provides additional disclosures required by ASC 606, including disaggregation of revenue into categories that depict how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors.

Contract Assets and Liabilities. Contract assets reflect revenue recognized in advance of customer billing. Contract liabilities are recognized when a customer pays consideration, or we have a right to receive an amount of unconditional consideration, in advance of the satisfaction of performance obligations under the contract. We typically receive progress payments from our customers as we perform our work over time.

Total Contract assets and Contract liabilities at December 31, 2020 and 2019 are as follows:

<i>(dollars in millions)</i>	2020	2019
Contract assets, current	\$ 458	\$ 529
Total contract assets	458	529
Contract liabilities, current	2,542	2,270
Contract liabilities, noncurrent (included within Other long-term liabilities)	44	18
Total contract liabilities	2,586	2,288
Net contract liabilities	\$ 2,128	\$ 1,759

Contract assets decreased by \$71 million during the year ended December 31, 2020 as a result of the progression of current contracts and timing of billing on customer contracts. Contract liabilities increased by \$298 million during the year ended December 31, 2020 primarily due to contract billings in excess of revenue earned. During the year ended December 31, 2020 and 2019, we recognized revenue of \$1.6 billion and \$1.7 billion related to the contract liabilities as of January 1, 2020 and as of January 1, 2019, respectively.

Remaining Performance Obligations ("RPO"). RPO represents the aggregate amount of total contract transaction price that is unsatisfied or partially unsatisfied. As of December 31, 2020, our total RPO was approximately \$17.2 billion. Of the total RPO as of December 31, 2020, we expect approximately 90% will be recognized as sales over the following 24 months. On December 31, 2019, we had approximately \$16.4 billion of remaining performance obligations, at which time we expected to recognize approximately 91% of these remaining performance obligations as sales in the next 24 months.

NOTE 5: RELATED PARTIES

In connection with the Separation as further described in Note 1, "Description of Business and Separation from United Technologies Corporation", the Company entered into several agreements with our former parent UTC and Carrier. These agreements include a separation and distribution agreement that sets forth certain agreements with UTC and Carrier regarding the principal actions to be taken in connection with the Separation, including identifying the assets transferred, the liabilities assumed and the contracts transferred to each of UTC, Carrier and Otis as part of the Separation, and when and how these transfers and assumptions occurred. Other agreements that we entered into that govern aspects of our relationship with RTX and Carrier following the Separation include:

- **TSA.** We entered into the TSA under which RTX provides the Company with certain services and we provide certain services to RTX for a limited time to help ensure an orderly transition following the Separation.
- **TMA.** We entered into the TMA with our former parent UTC and Carrier that governs the parties' respective rights, responsibilities and obligations with respect to tax matters (including responsibility for taxes, entitlement to refunds, allocation of tax attributes, preparation of tax returns, control of tax contests and other tax matters). Subject to certain exceptions set forth in the TMA, Otis generally is responsible for federal, state and foreign taxes imposed on a separate return basis on Otis (or any of its subsidiaries) with respect to taxable periods (or portions thereof) that ended on or prior to the date of the Distribution. The TMA provides special rules that allocate responsibility for tax liabilities arising from a failure of the Separation transactions to qualify for tax-free treatment based on the reasons for such failure. The TMA also imposes restrictions on Otis during the two-year period following the Distribution that are intended to prevent certain transactions from failing to qualify as transactions that are generally tax-free.
- **EMA and Intellectual Property Agreement.** We also entered into the EMA, which allocated among Otis, UTC and Carrier the liabilities and responsibilities relating to employment matters, employee compensation and benefit plans, benefit programs and other related matters, as well as an intellectual property agreement with UTC and Carrier in connection with the Separation.

Net Transfers from (to) UTC and Separation Transactions. In connection with the Separation, certain assets and liabilities were contributed to the Company by our former parent UTC leading up to and at

the time of the Separation. During 2020 and prior to the Separation, net liabilities of \$43 million were contributed to the Company by UTC, primarily consisting of deferred tax assets and liabilities and fixed assets. Prior to the Separation, these non-cash contributions were recorded as Net transfers (to) from UTC on the Consolidated Statements of Changes in Equity through UTC Net Investment.

Upon Separation, the following were recorded as Net transfers (to) from UTC and Separation-related transactions on the Consolidated Statements of Changes in Equity through UTC Net Investment:

(dollars in millions)

Cash and cash equivalents	\$	220
Taxes and other		187
Total	\$	407

Prior to the Separation, UTC paid Otis Cash and cash equivalents of \$190 million in connection with the Separation Agreement, and approximately \$30 million as settlement of related party receivables due from UTC to Otis as a result of a cash overdraft as of March 31, 2020.

Additionally, the TCJA imposed a non-recurring toll charge, to be paid in installments over an 8-year period, on deemed repatriated earnings of foreign subsidiaries as of December 31, 2017. Under the terms of the TMA, Otis will indemnify RTX for a percentage of the toll charge installment payments due after April 3, 2020. As a result, a portion of Otis' Future income tax obligations corresponding to the toll charge has been reclassified as a contractual indemnity obligation within Other long-term liabilities on the Consolidated Balance Sheets. The TMA also provides for RTX to indemnify Otis for certain foreign tax obligations as a result of Otis' inclusion in certain foreign consolidated tax returns prior to the Separation. As a result, Otis has reflected this contractual indemnification asset within Other current assets and the related tax obligations within Accrued liabilities on the Consolidated Balance Sheets. As a result of the Separation and the provisions of the TMA, Otis' total net tax-related liabilities on April 3, 2020 were reduced by \$191 million, comprising the following impacts to the Consolidated Balance Sheets:

(dollars in millions)

	Increase (Decrease)
Assets	
Other current assets	\$ 167
Total Current Assets	167
Future income tax benefits	(4)
Total Assets	\$ 163
Liabilities and (Deficit) Equity	
Accrued liabilities	\$ 110
Total Current Liabilities	110
Future income tax obligations	(377)
Other long-term liabilities	239
Total Liabilities	(28)
Total Shareholders' (Deficit) Equity	191
Total (Deficit) Equity	191
Total Liabilities and (Deficit) Equity	\$ 163

There were also \$4 million of Other long-term liabilities recorded upon Separation on the Consolidated Balance Sheet.

In addition to Income taxes paid, net of (refunds) on the Consolidated Statements of Cash Flows, as a result of the TMA the Company made a payment of \$86 million for foreign tax obligations that was reimbursed by RTX in 2020.

Shared Costs. The Consolidated Financial Statements have been prepared on a standalone basis for the periods prior to the Separation on April 3, 2020, and for those periods are derived from the consolidated financial statements and accounting records of UTC. Prior to the Separation, the Company had been managed and operated in the normal course of business with other affiliates of UTC. Accordingly, for periods prior to the Separation on April 3, 2020, certain shared costs were allocated to the Company and reflected as expenses in these Consolidated Financial Statements.

Allocated centralized costs were incurred as follows:

<i>(dollars in millions)</i>	2020	2019	2018
Allocated centralized costs	\$ 16	\$ 80	\$ 90

Prior to the Separation, UTC incurred significant corporate costs such as treasury, tax, accounting, human resources, audit, legal, purchasing, information technology and other such services. The costs associated with these services generally included all payroll and benefit costs, as well as overhead costs related to certain functions. All such amounts have been deemed to have been incurred and settled by the Company in the period in which the costs were recorded. These expenses are primarily included in Selling, general and administrative expense on the Consolidated Statements of Operations. The future results of operations, financial position and cash flows could differ materially from the historical results presented herein. There were no allocated centralized costs for the periods after the Separation.

Separation Costs. In connection with the Separation as further described in Note 1, "Description of Business and Separation from United Technologies Corporation", we incurred Separation costs as follows:

<i>(dollars in millions)</i>	2020	2019	2018
Separation costs	\$ 119	\$ 43	\$ —

We incurred non-recurring Separation-related costs of \$119 million and \$43 million in 2020 and 2019, respectively, of which \$106 million and \$43 million, respectively, are recorded in Selling, general and administrative expense and the remaining costs are recorded in Other income (expense), net on the Consolidated Statements of Operations. The Selling, general and administrative expenses primarily consist of employee-related costs, costs to establish certain standalone functions and information technology systems, professional services fees, costs to exit from certain services previously provided under the TSA, equity-based awards and other transaction-related costs to transition to being a standalone public company. The costs recorded in Other income (expense), net primarily consist of the finalization of tax returns and tax payments made after the Separation, partially offset in the tax provision, due to differences between the estimated indemnity recorded upon spin and final indemnity payment received relative to the overall tax liability and payments previously submitted.

Cash Management and Financing. Prior to the Separation, the Company participated in UTC's centralized cash management and financing programs. Disbursements were made through centralized accounts

payable systems which were operated by UTC. Cash receipts were transferred to centralized accounts, which were also maintained by UTC. As cash was received and disbursed by UTC, it was accounted for by the Company through UTC Net Investment. All short and long-term debt was financed by UTC prior to the issuance of the notes and the term loan in connection with the Separation, and the financing decisions for wholly and majority owned subsidiaries were determined by UTC. The cash reflected on the Consolidated Balance Sheets as of December 31, 2019 represents cash on hand at certain foreign entities that did not participate in the centralized cash management program and were specifically identifiable to the Company.

Long-Term Debt, Accounts Receivable and Accounts Payable. Certain related party transactions between the Company and our former parent UTC have been included within UTC Net Investment on the Consolidated Balance Sheets in the historical periods presented prior to the Separation. The UTC Net Investment includes related party receivables due from UTC and its affiliates of \$7.7 billion as of December 31, 2019. The UTC Net Investment includes related party payables due to UTC and its affiliates of \$750 million as of December 31, 2019, which primarily related to centralized cash management and financing programs. The UTC Net Investment includes related party debt due to UTC and its affiliates of \$100 million as of December 31, 2019. The interest income and expense related to the activity with UTC that was included in Otis' results is presented on a net basis in the Consolidated Statements of Operations as this is settled in cash. Interest income on the activity with our former parent UTC was \$23 million and \$25 million in 2019 and 2018, respectively. Interest expense on the activity with our former parent UTC was \$18 million and \$20 million in 2019 and 2018, respectively. There was no interest income or interest expense activity with our former parent UTC in 2020. The total effect of the settlement of these related party transactions is reflected as a financing activity on the Consolidated Statements of Cash Flows for the historical periods presented.

Additionally, prior to the Separation, certain related party trade transactions between Otis and UTC and affiliate businesses were cash-settled on a current basis, and therefore, are reflected in the Consolidated Balance Sheets as Accounts payable and amounted to \$11 million as of December 31, 2019.

Guarantees. Prior to the Separation, UTC and its affiliates issued parent company guarantees to certain customers or other third parties regarding the product performance obligations of Otis under certain installation and long-term maintenance contracts, as well as parent guarantees on behalf of Otis to guarantee ordinary course of business performance obligations as required by certain Otis customers and banks to support credit facilities to Otis' affiliates. Typically, contract performance guarantees provided to Otis customers are in amounts equal to a portion or the entire value of the awarded contract and remain in place through the completion of a contract or warranty period. At December 31, 2019, the total outstanding parent guarantees were approximately \$1.8 billion, and all such parent guarantees were terminated in connection with the Separation.

There were no costs charged to Otis by our former parent UTC related to these guarantees. Payouts under these guarantees were not significant for 2020, 2019 and 2018.

UTC also provided parent guarantees of Otis' long-term debt, which terminated upon Separation.

NOTE 6: ACCOUNTS RECEIVABLE, NET**Adoption of Credit Loss Standard**

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*. This ASU and its related amendments (collectively, the "Credit Loss Standard") modifies the impairment model to utilize an expected loss methodology in place of the incurred loss methodology for financial instruments including trade receivables, contract assets, long term receivables and off-balance sheet credit exposures. The Credit Loss Standard requires consideration of a broader range of information to estimate expected credit losses, including historical information and current conditions through a reasonable forecast period. The Credit Loss Standard requires that the income statement reflect the measurement of credit losses for newly recognized financial assets as well as the expected increase or decrease of expected credit losses that have taken place during the period, which may result in earlier recognition of certain losses. We adopted this standard effective January 1, 2020 utilizing a modified retrospective approach. A cumulative-effect non-cash after-tax adjustment to retained earnings as of January 1, 2020 was recorded in the amount of approximately \$25 million.

We are exposed to credit losses primarily through our net sales of products and services to our customers which are recorded as Accounts Receivable, net on the Consolidated Balance Sheets. We evaluate each customer's ability to pay through assessing customer creditworthiness, historical experience and current economic conditions through a reasonable forecast period. Factors considered in our evaluation of assessing collectability and risk include: underlying value of any collateral or security interests, significant past due balances, historical losses and existing economic conditions including country and political risk. There can be no assurance that actual results will not differ from estimates or that consideration of these factors in the future will not result in an increase or decrease to the allowance for credit losses. We may require collateral or prepayment to mitigate credit risk.

We estimate expected credit losses of financial assets with similar risk characteristics. We determine an asset is impaired when our assessment identifies there is a risk that we will be unable to collect amounts due according to the contractual terms of the agreement. We monitor our ongoing credit exposure through reviews of customer balances against contract terms and due dates, current economic conditions and dispute resolution. Estimated credit losses are written off in the period in which the financial asset is no longer collectible.

Accounts receivable, net consisted of the following as of December 31:

<i>(dollars in millions)</i>	2020	2019
Trade receivables	\$ 2,987	\$ 2,671
Customer financing notes receivable	130	52
Unbilled receivables	104	108
Miscellaneous receivables	88	113
	3,309	2,944
Less: allowance for expected credit losses ¹	161	83
Balance	\$ 3,148	\$ 2,861

¹ Prior to January 1, 2020 allowances for doubtful accounts were recorded when accounts receivable were determined to be uncollectible.

The changes in allowance for credit losses related to Accounts receivable, net for the year ended December 31, 2020 is as follows:

<i>(dollars in millions)</i>		2020
Balance as of January 1	\$	83
Impact of credit standard adoption		28
Current period provision for expected credit losses		40
Write-offs charged against the allowance for expected credit losses		(20)
Other		30
Balance as of December 31	\$	161

During 2020, there was approximately \$26 million of previously reserved balances moved into allowance for credit losses. As a result of this activity, there was no impact to the Consolidated Statements of Operations for 2020.

NOTE 7: INVENTORIES, NET

<i>(dollars in millions)</i>	2020	2019
Raw materials and work-in-process	\$ 113	\$ 103
Finished goods	546	468
Total	\$ 659	\$ 571

Raw materials and work-in-process and Finished goods are net of valuation reserves of \$112 million and \$103 million as of December 31, 2020 and 2019, respectively.

NOTE 8: FIXED ASSETS

<i>(dollars in millions)</i>	Estimated Useful Lives	2020	2019
Land		\$ 48	\$ 45
Buildings and improvements	20 - 40 Years	616	574
Machinery and equipment	3 - 12 Years	1,175	1,043
Assets under construction		132	141
		1,971	1,803
Less: Accumulated depreciation		(1,197)	(1,082)
		\$ 774	\$ 721

Depreciation expense was \$100 million, \$85 million and \$86 million in 2020, 2019 and 2018, respectively.

In 2020, as a result of reviewing our technology strategies following the Separation, the Company recorded a pre-tax loss for the write-off of Assets under construction of approximately \$71 million within Other income (expense), net in the Consolidated Statements of Operations.

Non-cash investing activities involving fixed assets resulted in a net increase to Accounts payable of \$7 million and \$4 million during 2020 and 2019, respectively.

NOTE 9: BUSINESS ACQUISITIONS, GOODWILL AND INTANGIBLE ASSETS

Business Acquisitions. Our investments in businesses, net of cash acquired, totaled \$55 million (including debt assumed), \$47 million and \$50 million in 2020, 2019 and 2018, respectively. The acquisitions in each year consisted of a number of immaterial acquisitions in our Service segment. Transaction costs incurred were not considered significant.

In 2019, the Company recorded a pre-tax loss on the sale of a business of \$19 million within Other income (expense), net on the Consolidated Statement of Operations. There were no significant disposals of businesses for the years ended December 31, 2020 or 2018.

Goodwill. Changes in our Goodwill balances in 2020 were as follows:

(dollars in millions)	Balance as of January 1, 2020	Goodwill Resulting From Business Combinations	Foreign Currency Translation and Other	Balance as of December 31, 2020
New Equipment	\$ 337	\$ —	\$ 20	\$ 357
Service	1,310	30	76	1,416
Total	\$ 1,647	\$ 30	\$ 96	\$ 1,773

Changes in our Goodwill balances in 2019 were as follows:

(dollars in millions)	Balance as of January 1, 2019	Goodwill Resulting From Business Combinations	Business Disposals	Foreign Currency Translation and Other	Balance at December 31, 2019
New Equipment	\$ 345	\$ —	\$ —	\$ (8)	\$ 337
Service	1,343	16	(16)	(33)	1,310
Total	\$ 1,688	\$ 16	\$ (16)	\$ (41)	\$ 1,647

Intangible Assets. Identifiable intangible assets are comprised of the following:

(dollars in millions)	2020		2019	
	Gross Amount	Accumulated Amortization	Gross Amount	Accumulated Amortization
Amortized:				
Purchased service portfolios	\$ 2,123	\$ (1,661)	\$ 2,069	\$ (1,598)
Patents, trademarks/trade names	22	(16)	21	(15)
Customer relationships and other	54	(45)	46	(40)
	2,199	(1,722)	2,136	(1,653)
Unamortized:				
Trademarks and other	7	—	7	—
Total	\$ 2,206	\$ (1,722)	\$ 2,143	\$ (1,653)

Fully amortized service portfolios of \$117 million were written off during 2020.

Amortization expense of intangible assets was \$91 million, \$95 million and \$104 million for the years ended December 31, 2020, 2019 and 2018, respectively. The estimated future amortization of intangible assets is as follows:

<i>(dollars in millions)</i>	2021	2022	2023	2024	2025
Future amortization	\$ 83	\$ 71	\$ 61	\$ 53	\$ 47

NOTE 10: BORROWINGS AND LINES OF CREDIT

<i>(dollars in millions)</i>	2020	2019
Commercial paper	\$ 664	\$ —
Other borrowings	37	34
Total short-term borrowings	\$ 701	\$ 34

As of December 31, 2020, we had an aggregate of \$1.5 billion unsecured, unsubordinated commercial paper programs in place. We use our commercial paper borrowings for general corporate purposes including to finance acquisitions, pay dividends and for debt refinancing. The need for commercial paper borrowings may arise if the use of domestic cash for general corporate purposes exceeds the sum of domestic cash generation and foreign cash repatriated to the U.S. In September 2020, we issued €420 million of Euro-denominated commercial paper. The Company used the proceeds from the commercial paper issuance to pay down a portion of the principal balance of the term loan described below. The Euro-denominated commercial paper qualifies as a net investment hedge against our investments in European businesses. As of December 31, 2020, the net investment hedge is deemed to be effective. In November 2020, we issued \$150 million of US dollar commercial paper to pay down the remaining balance of the term loan described below.

As of December 31, 2020, we had a credit agreement, as amended, with various banks providing for a \$1.5 billion unsecured, unsubordinated 5-year revolving credit facility, effective as of April 3, 2020, with an interest rate of LIBOR plus 125 basis points and a commitment fee rate of 12.5 basis points. As of December 31, 2020, there were no borrowings under the revolving credit facility. The undrawn portion of the revolving credit facility serves as a backstop for the issuance of commercial paper.

On February 10, 2020, the Company entered into a term loan credit agreement, as amended, providing for a \$1.0 billion unsecured, unsubordinated 3-year term loan credit facility (the "term loan"). On March 27, 2020, the Company drew on the full amount of the term loan. On September 28, 2020, we made a \$750 million prepayment of our term loan and paid the remaining balance of approximately \$250 million on November 20, 2020, resulting in the payment in full and termination of the term loan credit agreement.

Additionally, on February 27, 2020, we issued \$5.3 billion unsecured, unsubordinated notes.

The net proceeds of the term loan and the notes described above of approximately \$6.3 billion in the aggregate were distributed to UTC prior to the Separation.

The revolving credit agreement, term loan credit agreement and indenture contain affirmative and negative covenants customary for financings of these types that, among other things, limit the Company's and its subsidiaries' ability to incur additional liens, to make certain fundamental changes and to enter into sale and leaseback transactions. In addition, the revolving credit agreement and the term loan credit agreement require that we maintain a maximum consolidated leverage ratio as defined in the agreements, commencing with the test period ending September 30, 2020. The revolving credit agreement, term loan credit agreement and indenture also contain events of default customary for financings of these types. The Company was in compliance with all covenants in 2020.

Long-term debt consisted of the following as of December 31:

<i>(dollars in millions)</i>	2020	2019
LIBOR plus 45 bps floating rate notes due 2023 ^{1,2}	\$ 500	\$ —
2.056% notes due 2025 ²	1,300	—
2.293% notes due 2027 ²	500	—
2.565% notes due 2030 ²	1,500	—
3.112% notes due 2040 ²	750	—
3.362% notes due 2050 ²	750	—
Other (including finance leases)	5	5
Total principal long-term debt	5,305	5
Other (discounts and debt issuance costs)	(43)	—
Total long-term debt	5,262	5
Less: current portion	—	—
Long-term debt, net of current portion	\$ 5,262	\$ 5

¹ The three-month LIBOR rate at December 31, 2020 was approximately 0.24%.

² On February 27, 2020, we issued \$5.3 billion of unsecured, unsubordinated notes. We may redeem these notes at our option pursuant to certain terms.

Debt issuance costs are presented as a reduction of debt on the Consolidated Balance Sheets and are amortized as a component of interest expense over the term of the related debt using the effective interest method. Debt issuance costs amortization reflected in the Statements of Operations for the year ended December 31, 2020 is \$5 million, and the total interest expense recorded on our external debt for the year ended December 31, 2020 was \$124 million. The unamortized debt issuance costs at December 31, 2020 is approximately \$43 million.

The average maturity of our long-term debt at December 31, 2020 is approximately 11.2 years. The average interest rate on our debt for 2020 is as follows:

<i>(dollars in millions)</i>	2020
Average interest rate - average outstanding borrowings during the year:	
Short-term borrowings	(0.2)%
Total long-term debt	2.3%
Average interest rate - average outstanding borrowings as of December 31:	
Short-term borrowings	(0.2)%
Total long-term debt	2.4%

The schedule of principal payments required on long-term debt for the next five years and thereafter is:

(dollars in millions)

2021	\$	—
2022		3
2023		500
2024		—
2025		1,302
Thereafter		3,500
Total	\$	5,305

NOTE 11: ACCRUED LIABILITIES

(dollars in millions)

	2020	2019
Accrued salaries, wages and employee benefits	\$ 556	\$ 516
Accrued interest	223	165
Accrued income taxes payable	182	157
Operating lease liabilities	167	140
VAT and other non-income tax payables	102	116
Other liabilities	747	645
Total	\$ 1,977	\$ 1,739

Accrued interest primarily consists of interest accrued for uncertain tax positions and the German tax litigation as described in Note 21, "Contingent Liabilities", as well as \$45 million of interest accrued for borrowings as described in Note 10, "Borrowings and Lines of Credit".

NOTE 12: OTHER LONG-TERM LIABILITIES

(dollars in millions)

	2020	2019
Contractual indemnity obligation	\$ 239	\$ —
General, product and auto liability	152	145
Employee benefits	113	97
Other liabilities	130	69
Total	\$ 634	\$ 311

The Contractual indemnity obligation consists of a payable to RTX, resulting from the TMA. See Note 5, "Related Parties" for further details.

NOTE 13: EMPLOYEE BENEFIT PLANS

The Company sponsors numerous single-employer domestic and international employee benefit plans and, prior to the Separation, certain of our employees participated in employee benefit plans ("Shared Plans") sponsored by UTC that included participants of the other UTC businesses. We have accounted for our participation in the Shared Plans prior to the Separation as multiemployer benefit plans, as discussed below.

Employee Savings Plans. We sponsor various employee savings plans. Prior to the Separation, UTC also sponsored and contributed to defined contribution employee savings plans. Prior to the Separation, certain employees of Otis participated in these plans. Our contributions to employer-sponsored defined contribution plans were \$54 million, \$41 million and \$38 million for 2020, 2019, and 2018, respectively.

Pension Plans. We sponsor both funded and unfunded domestic and international defined benefit pension plans that cover a large number of our employees. Our plans use a December 31 measurement date consistent with our fiscal year.

<i>(dollars in millions)</i>	2020	2019
Change in benefit obligation:		
Beginning balance	\$ 1,092	\$ 869
Service cost	40	33
Interest cost	16	21
Actuarial (gain) loss	40	81
Benefits paid	(28)	(30)
Net settlement, curtailment and special termination benefits	(26)	(23)
Other	91	141
Ending balance	\$ 1,225	\$ 1,092
Change in plan assets:		
Beginning balance	\$ 622	\$ 444
Actual return on plan assets	24	76
Employer contributions	64	32
Benefits paid	(28)	(30)
Settlements	(26)	(23)
Other	47	123
Ending balance	\$ 703	\$ 622
Funded status:		
Fair value of plan assets	\$ 703	\$ 622
Benefit obligations	(1,225)	(1,092)
Funded status of plan	\$ (522)	\$ (470)
Amounts recognized in the Consolidated Balance Sheets consist of:		
Noncurrent assets	\$ 87	\$ 83
Current liability	(21)	(20)
Noncurrent liability	(588)	(533)
Net amount recognized	\$ (522)	\$ (470)
Amounts recognized in Accumulated other comprehensive loss consist of:		
Net actuarial loss	\$ 280	\$ 236
Prior service credit	(1)	(2)
Net amount recognized	\$ 279	\$ 234

The amounts included in "actuarial loss" in the above table primarily are due to changes in discount rate assumptions driven by decreases in corporate bond yields. The amounts included in "Other" in the above table primarily reflect the impact of foreign exchange translation, primarily for plans in Australia, Canada, Germany, Spain and Switzerland, and in 2019 an additional foreign defined benefit plan. Domestic pension plans provide retirement benefits to certain employees and are not a material component of the projected benefit obligation.

In 2020, 2019 and 2018 we made cash contributions to our defined benefit pension plans of \$64 million, \$32 million and \$34 million, respectively.

Information for pension plans with accumulated benefit obligations in excess of plan assets:

<i>(dollars in millions)</i>	2020	2019
Projected benefit obligation	\$ 787	\$ 697
Accumulated benefit obligation	685	609
Fair value of plan assets	205	157

Information for pension plans with projected benefit obligations in excess of plan assets:

<i>(dollars in millions)</i>	2020	2019
Projected benefit obligation	\$ 991	\$ 966
Accumulated benefit obligation	846	846
Fair value of plan assets	383	413

The accumulated benefit obligation for all defined benefit pension plans was \$1.1 billion and \$1.0 billion at December 31, 2020 and 2019, respectively.

The components of the net periodic pension cost are as follows:

<i>(dollars in millions)</i>	2020	2019	2018
Pension benefits:			
Service cost	\$ 40	\$ 33	\$ 33
Interest cost	16	21	21
Expected return on plan assets	(25)	(24)	(23)
Amortization of prior service credit	(1)	(1)	(1)
Recognized actuarial net loss	16	10	12
Net settlement, curtailment and special termination benefits loss (gain)	5	2	(3)
Net periodic pension cost – employer	\$ 51	\$ 41	\$ 39

Other changes in plan assets and benefit obligations recognized in other comprehensive loss are as follows:

<i>(dollars in millions)</i>	2020	2019	2018
Current year actuarial loss	\$ 41	\$ 28	\$ 37
Prior service credit arising during period	—	—	(1)
Amortization of actuarial loss	(16)	(10)	(12)
Amortization of prior service credit	1	1	1
Net settlement and curtailment (loss) gain	(5)	(2)	3
Other	24	27	(8)
Total recognized in other comprehensive loss	\$ 45	\$ 44	\$ 20
Net recognized in net periodic pension cost and other comprehensive loss	\$ 96	\$ 85	\$ 59

The amounts included in "Other" in the above table primarily reflect the impact of foreign exchange translation, primarily for plans in Australia, Germany, Canada and Switzerland, and in 2019, an additional foreign defined benefit plan.

Major assumptions used in determining the benefit obligation and net cost for pension plans are presented in the following table as weighted-averages:

	Benefit Obligation		Net Cost		
	2020	2019	2020	2019	2018
Discount rate:					
Projected benefit obligation	1.1%	1.5%	1.5%	2.5%	2.4%
Salary scale	3.0%	3.1%	3.1%	3.3%	3.3%
Expected return on plan assets	—	—	4.5%	5.2%	5.2%
Interest crediting rate	0.6%	0.7%	0.7%	1.5%	1.5%

The weighted-average discount rates used to measure pension benefit obligations and net costs are set by reference to specific analyses using each plan's specific cash flows and are then comparing them to high-quality bond indices for reasonableness.

In determining the expected return on plan assets, we consider the relative weighting of plan assets, the historical performance of total plan assets and individual asset classes, and economic and other indicators of future performance. In addition, we may consult with, and consider the opinions of, financial and other professionals in developing appropriate capital market assumptions. Return projections are also validated using a simulation model that incorporates yield curves, credit spreads and risk premiums to project long-term prospective returns.

The plans' investment management objectives include providing the liquidity and asset levels needed to meet current and future benefit payments, while maintaining a prudent degree of portfolio diversification considering interest rate risk and market volatility. Globally, investment strategies target a mix of approximately 50% of growth-seeking assets and 50% of income-generating and hedging assets using a wide diversification of asset types, fund strategies and investment managers. The growth seeking allocation consists of global public equities in developed and emerging countries, and alternative-asset class strategies. Within the income-generating assets, the fixed income portfolio consists of mainly government and broadly diversified high-quality corporate bonds.

The fair values of pension plan assets at December 31, 2020 and 2019 by asset category are as follows:

<i>(dollars in 'millions)</i>	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Not Subject to Leveling	Total
Asset category					
Public equities:					
Global Equity Commingled Funds ¹	\$ 52	\$ 39	\$ —	\$ —	\$ 91
Global Equity Funds at net asset value ⁵	—	—	—	154	154
Fixed income securities:					
Governments	20	41	—	—	61
Corporate Bonds	49	4	—	—	53
Fixed income securities at net asset value ⁵	—	—	—	90	90
Real estate ^{2,5}	12	6	—	12	30
Other ^{3,5}	2	129	—	25	156
Cash and cash equivalents ^{4,5}	6	1	—	41	48
Total	\$ 141	\$ 220	\$ —	\$ 322	\$ 683
Other assets and liabilities ⁶					20
Total at December 31, 2020				\$	703

(dollars in millions)	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Not Subject to Leveling	Total
Asset category					
Public equities:					
Global Equity Commingled Funds ¹	\$ —	\$ 183	\$ —	\$ —	\$ 183
Global Equity Funds at net asset value ⁵	—	—	—	78	78
Fixed income securities:					
Governments	—	54	—	—	54
Corporate Bonds	—	87	—	—	87
Fixed income securities at net asset value ⁵	—	—	—	47	47
Real estate ^{2,5}	—	26	—	1	27
Other ³	—	138	—	—	138
Cash and cash equivalents ^{4,5}	—	8	—	—	8
Total at December 31, 2019	\$ —	\$ 496	\$ —	\$ 126	\$ 622

¹ Represents investments in mutual funds and investments in commingled funds that invest primarily in common stocks.

² Represents investments in real estate including commingled funds and directly-held properties.

³ Represents insurance contracts and global-balanced-risk commingled funds consisting mainly of equity, bonds and some commodities.

⁴ Represents short-term commercial paper, bonds and other cash or cash-like instruments.

⁵ In accordance with FASB ASU 2015-07, *Fair Value Measurement* (Topic 820), certain investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented for the total pension benefits plan assets.

⁶ Represents trust receivables and payables that are not leveled.

Quoted market prices are used to value investments when available. Investments in securities traded on exchanges, including listed futures and options, are valued at the last reported sale prices on the last business day of the year or, if not available, the last reported bid prices. Fixed income securities are primarily measured using a market approach pricing methodology, where observable prices are obtained by market transactions involving identical or comparable securities of issuers with similar credit ratings. Over-the-counter securities and government obligations are valued at the bid prices or the average of the bid and ask prices on the last business day of the year from published sources or, if not available, from other sources considered reliable, generally broker quotes. Temporary cash investments are stated at cost, which approximates fair value.

We expect to make total contributions of approximately \$30 million to our global defined benefit pension plans in 2021, including benefit payments to be paid directly from corporate assets.

Benefit payments, including amounts to be paid from corporate assets, and reflecting expected future service, as appropriate, are expected to be paid as follows: \$56 million in 2021, \$59 million in 2022, \$62 million in 2023, \$59 million in 2024, \$61 million in 2025, and \$353 million from 2026 through 2030.

Postretirement Benefit Plans. We sponsor postretirement benefit plans that provide health and life benefits to eligible retirees. The postretirement plans are unfunded. The benefit obligation was \$11 million

and \$9 million at December 31, 2020, and 2019, respectively. The net periodic cost was \$1 million for 2020, 2019 and 2018, respectively. Other comprehensive loss of \$2 million was recognized during 2020 related to changes in benefit obligations.

The projected benefit obligation discount rate was 4.3% and 4.7% at December 31, 2020 and 2019, respectively. The Net Cost discount rate was 4.7%, 5.3% and 5.3% for 2020, 2019 and 2018, respectively.

Benefit payments, including amounts to be paid from corporate assets, and reflecting expected future service, as appropriate, are expected to be paid as follows: \$1 million each year from 2021 through 2025, and \$3 million from 2026 through 2030.

Multiemployer Benefit Plans. We contribute to various domestic and international multiemployer defined benefit pension plans. The risks of participating in these multiemployer plans are different from single-employer plans in that assets contributed are pooled and may be used to provide benefits to employees of other participating employers. If a participating employer stops contributing to the plan, the unfunded obligations of the plan may be borne by the remaining participating employers. Lastly, if we choose to stop participating in some of our multiemployer plans, we may be required to pay those plans a withdrawal liability based on the underfunded status of the plan.

Our participation in these plans for the annual periods ended December 31 is outlined in the table below. Unless otherwise noted, the most recent Pension Protection Act ("PPA") zone status available in 2020 and 2019 is for the plan's year-end at June 30, 2019 and June 30, 2018, respectively. The zone status is based on information that we received from the plan and is certified by the plan's actuary. Our significant plan is in the green zone which represents a plan that is at least 80% funded and does not require a financial improvement plan ("FIP") or a rehabilitation plan ("RP"). An extended amortization provision of ten years was utilized to recognize investment gains or losses for our significant plan through June 30, 2019.

(dollars in millions)		PPA Zone Status		FIP/RP Status	Contributions			Surcharge Imposed	Expiration Date of Collective-Bargaining Agreement
Pension Fund	EIN/Pension Plan Number	2020	2019	Pending/ Implemented	2020	2019	2018		
National Elevator Industry Pension	23-2694291	Green	Green	No	\$ 131	\$ 127	\$ 120	No	7/8/2022
Other funds					7	9	8		
					\$ 138	\$ 136	\$ 128		

For the plan years ended June 30, 2019 and 2018, respectively, we were listed in the National Elevator Industry Pension Plan's Forms 5500 as providing more than 5% of the total contributions for the plan. At the date these financial statements were issued, the Form 5500 was not available for the plan year ending June 30, 2020.

In addition, we participate in multiemployer arrangements that provide postretirement benefits other than pensions, with the National Elevator Industry Health Benefit Plan being the most significant. These arrangements generally provide medical and life benefits for eligible active employees and retirees and their dependents. Contributions to multiemployer plans that provide postretirement benefits other than pensions were \$20 million, \$21 million and \$20 million for 2020, 2019 and 2018, respectively.

UTC Sponsored Defined Benefit Plans. Defined benefit pension and postretirement benefit plans that were sponsored by our former parent UTC have been accounted for as multiemployer plans in these Consolidated Financial Statements pre-Separation, in accordance with FASB ASC Topic 715-30: *Defined Benefit Plans – Pension* and FASB ASC Topic 715-60: *Defined Benefit Plans – Other Postretirement*. FASB ASC Topic 715: *Compensation-Retirement Benefits* provides that an employer that participates in a multiemployer defined benefit plan is not required to report a liability beyond the contributions currently due and unpaid to the plan. Therefore, no assets or liabilities related to these plans have been included on the Consolidated Balance Sheets.

These pension and post retirement expenses were allocated to the Company and reported in Cost of products and services sold, Selling, general and administrative and Non-service pension cost (benefit) on the Consolidated Statements of Operations. The Company's participation in the defined pension and postretirement benefit plans sponsored by our former parent UTC concluded upon the completion of the Separation on April 3, 2020. The amounts for pension and postretirement expenses for the years ended December 31 were as follows:

<i>(dollars in millions)</i>	2020	2019	2018
Service cost	\$ 1	\$ 15	\$ 18
Non-service pension benefit	(5)	(42)	(49)
	\$ (4)	\$ (27)	\$ (31)

Stock-based Compensation. Prior to the Separation, certain of the Company's employees participated in stock-based compensation plans sponsored by our former parent UTC. The UTC stock-based compensation plans included various types of market and performance-based incentive awards, including stock options, stock appreciation rights, restricted stock units, and performance-based share units. All awards granted under the plans were based on UTC common shares, and only the activity attributable to Otis employees from these awards is reflected in the accompanying Consolidated Financial Statements for the year ended December 31, 2020.

In connection with the Separation, the Company adopted the 2020 Long-Term Incentive Plan (the "Plan"). The Plan became effective on April 3, 2020. A total of 45 million shares of common stock are authorized under the Plan. The Plan provides for the grant of various types of awards including restricted share unit awards, stock appreciation rights, stock options, and performance-based awards. Under the Plan, the exercise price of awards, if any, is set on the grant date and may not be less than the fair market value per share on that date. Generally, stock appreciation rights and stock options have a term of ten years and a three-year vesting period, subject to limited exceptions. In the event of retirement, annual stock appreciation rights, stock options, and restricted share units held for more than one year may become vested and exercisable (if applicable), subject to certain terms and conditions. Awards with performance-based vesting generally have a minimum three-year vesting period and vest based on actual performance against pre-established metrics. In the event of retirement, performance-based awards held for more

than one year remain eligible to vest based on actual performance relative to target metrics. We currently intend to issue new shares for share option exercises and conversions under our equity compensation arrangements, and will continue to evaluate this policy in connection with our share repurchase program.

In connection with the Separation, and in accordance with the EMA, the Company's employees with outstanding former UTC stock-based awards received replacement stock-based awards under the Plan at Separation. The value of the replaced stock-based awards was designed to preserve the aggregate intrinsic value of the award immediately after the Separation when compared to the aggregate intrinsic value of the award immediately prior to Separation. The incremental expense incurred by the Company was not material. As of December 31, 2020, approximately 28 million shares remain available for awards under the 2020 Plan.

Stock-based Compensation Expense

We measure the cost of all share-based payments, including stock options, at fair value on the grant date and recognize this cost in the Consolidated Statements of Operations. A forfeiture rate assumption is applied on grant date to adjust the expense recognition for awards that are not expected to vest. For periods prior to the Separation, stock-based compensation expense includes expense attributable to Otis, and the fair value assumptions are based on the awards and terms previously granted under the UTC incentive compensation plan to Otis employees. Accordingly, the amounts presented for the years ended December 31, 2020, 2019 and 2018 are not necessarily indicative of future awards and do not necessarily reflect the results that Otis would have experienced as an independent publicly-traded company.

Stock-based compensation expense and the resulting tax benefits were as follows:

<i>(dollars in millions)</i>	2020	2019	2018
Stock-based compensation expense (Share-based)	\$ 63	\$ 37	\$ 38
Stock-based compensation expense (Cash-based)	(4)	10	(1)
Total gross stock-based compensation expense	59	47	37
Less: future tax benefit	7	5	4
Stock-based compensation expense, net of tax	\$ 52	\$ 42	\$ 33

For the years ended December 31, 2020, 2019 and 2018, the amount of cash received from the exercise of stock options was \$3 million, \$10 million and \$25 million, respectively, with an associated tax benefit realized of \$2 million, \$6 million and \$5 million, respectively. In addition, for the years ended December 31, 2020, 2019 and 2018, the associated tax benefit realized from the vesting of performance share units and other restricted awards was \$1 million, \$4 million and \$1 million, respectively. The 2020 amount was computed using current U.S. federal and state tax rates.

As of December 31, 2020, there was approximately \$60 million of total unrecognized compensation cost related to non-vested equity awards granted under the Plan. This cost is expected to be recognized ratably over a weighted-average period of 2.3 years.

A summary of the transactions under the new Otis Plan for the year ended December 31, 2020 follows:

	Stock Appreciation Rights		Restricted Share Units		Performance Share Units		Stock Options	
(shares in thousands)	Shares	Average Price*	Shares	Average Price**	Shares	Average Price**	Shares	Average Price**
Outstanding at:								
December 31, 2019	—	\$ —	—	\$ —	—	\$ —	—	\$ —
Converted from UTC ¹	12,782	60.16	1,376	68.14	38	67.53	520	53.99
Granted ²	179	53.25	607	54.21	5	65.45	—	—
Exercised / Earned ²	(609)	45.19	(201)	61.89	(43)	67.29	(57)	45.39
Cancelled	(175)	72.82	(72)	67.56	—	69.79	(9)	41.42
December 31, 2020	12,177	\$ 60.63	1,710	\$ 63.94	—	\$ —	454	\$ 55.31

* Weighted-average grant price.

** Weighted-average grant fair value.

¹ Converted shares as of April 3, 2020 include Carrier and Legacy UTC employees receiving Otis awards on Separation.

² Includes annual retainer awards issued to the Board of Directors.

The weighted-average grant date fair value of stock options and stock appreciation rights granted by Otis and UTC during 2020, 2019 and 2018 was \$10.38, \$20.92 and \$20.18, respectively. The weighted-average grant date fair value of performance share units, which vest upon achieving certain performance metrics, and other restricted stock awards granted by Otis and UTC during 2020, 2019 and 2018 was \$54.29, \$109.17 and \$131.47, respectively. The total intrinsic value (which is the amount by which the stock price exceeded the exercise price on the date of exercise) of stock options and stock appreciation rights exercised during 2020, 2019 and 2018 was \$13 million, \$53 million and \$36 million, respectively. The total fair value (which is the stock price at vesting) of performance share units and other restricted awards vested was \$10 million, \$33 million and \$11 million during the years ended December 31, 2020, 2019 and 2018, respectively.

The following table summarizes information about equity awards outstanding that are vested and expected to vest and equity awards outstanding that are exercisable at December 31, 2020:

(shares in thousands; aggregate intrinsic value in millions)	Equity Awards Vested and Expected to Vest				Equity Awards That Are Exercisable			
	Awards	Average Price*	Aggregate Intrinsic Value	Remaining Term**	Awards	Average Price*	Aggregate Intrinsic Value	Remaining Term**
Stock Options/Stock Appreciation Rights	12,506	\$ 60.30	\$ 115	5.6 years	7,964	\$ 54.16	\$ 107	4.1 years
Performance Share Units/Restricted Stock	1,639	\$ —	\$ 111	1.7 years				

* Weighted-average grant price per share.

** Weighted-average contractual remaining term in years.

The fair value of each option award is estimated on the date of grant using a binomial lattice model. The following table indicates the assumptions used in estimating fair value for the years ended December 31, 2020, 2019 and 2018. For periods prior to the Separation, these assumptions represent those utilized by UTC and are not necessarily indicative of assumptions that would be used by Otis as a standalone company. Lattice-based option models incorporate ranges of assumptions for inputs; those ranges are as follows:

	2020	2019	2018
Expected volatility	25.5%	18.8% - 19.7%	17.5% - 21.1%
Weighted-average volatility	25.5%	19.5%	18.0%
Expected term (in years)	6.8	6.5 - 6.6	6.5 - 6.6
Expected dividend yield	1.8%	2.4%	2.2%
Risk-free rate	0.5%	2.3% - 2.7%	1.3% - 2.7%

Due to the lack of trading history of Otis' stock at the time of valuation efforts, the expected volatility for Otis was calculated based on the average of the volatility of the peer group within the industry. UTC's historical data for Otis employees was used to estimate equity award exercise and employee termination behavior within the valuation model. The expected term represents an estimate of the period of time equity awards are expected to remain outstanding. The risk-free rate is based on the term structure of interest rates at the time of equity award grant.

NOTE 14: ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

A summary of the changes in each component of Accumulated other comprehensive income (loss), net of tax for the years ended December 31, 2020, 2019 and 2018 is provided below:

(dollars in millions)	Foreign Currency Translation	Defined Benefit Pension and Postretirement Plans	Unrealized Hedging Gains (Losses)	Accumulated Other Comprehensive Income (Loss)
Balance at December 31, 2017	\$ (468)	\$ (119)	\$ —	\$ (587)
Other comprehensive income (loss) before reclassifications, net	(105)	(31)	—	(136)
Amounts reclassified, pre-tax	—	11	—	11
Tax expense reclassified	—	4	—	4
Balance at December 31, 2018	\$ (573)	\$ (135)	\$ —	\$ (708)
Other comprehensive income (loss) before reclassifications, net	(15)	(50)	(3)	(68)
Amounts reclassified, pre-tax	—	9	—	9
Tax expense reclassified	—	9	—	9
Balance at December 31, 2019	\$ (588)	\$ (167)	\$ (3)	\$ (758)
Other comprehensive income (loss) before reclassifications, net	(28)	(47)	10	(65)
Amounts reclassified, pre-tax	—	15	(3)	12
Tax benefit reclassified	—	(4)	—	(4)
Balance at December 31, 2020	\$ (616)	\$ (203)	\$ 4	\$ (815)

Amounts reclassified that relate to defined benefit pension and postretirement plans include amortization of prior service costs and actuarial net losses recognized during each period presented. These costs are recorded as components of net periodic pension cost for each period presented. See Note 13, "Employee Benefit Plans" for additional information.

NOTE 15: INCOME TAXES

Income Before Income Taxes. The sources of income from operations before income taxes are:

<i>(dollars in millions)</i>	2020	2019	2018
United States	\$ 105	\$ 470	\$ 504
Foreign	1,406	1,391	1,389
	\$ 1,511	\$ 1,861	\$ 1,893

Following enactment of the TCJA, and as part of the historical UTC assertion, the Company determined that it no longer intends to reinvest certain undistributed earnings of its international subsidiaries that have been previously taxed in the U.S. As such, in 2018 Otis recorded the international taxes associated with the future remittance of these earnings. As part of the Separation process, the Company re-assessed this position as a standalone company. The Company no longer intends to reinvest certain undistributed earnings of its international subsidiaries that have been previously taxed in the U.S. The international taxes recorded relative to this assertion differ from those recorded in 2018. As a result of the change in assertion, the Company recognized a one-time tax benefit of \$10 million during the year resulting from an overall reduction in the liability previously recorded by UTC. For the remainder of the Company's undistributed international earnings, unless tax effective to repatriate, Otis will continue to permanently reinvest these earnings. As of December 31, 2020, such undistributed earnings were approximately \$3.5 billion, excluding other comprehensive income amounts. It is not practicable to estimate the amount of tax that might be payable on the remaining amounts.

Provision for Income Taxes. The income tax expense (benefit) for the years ended December 31, 2020, 2019 and 2018 consisted of the following components:

<i>(dollars in millions)</i>	2020	2019	2018
Current:			
United States:			
Federal	\$ 42	\$ 103	\$ 59
State	26	38	38
Foreign	438	461	459
	506	602	556
Future:			
United States:			
Federal	8	11	(11)
State	(8)	—	7
Foreign	(51)	(19)	131
	(51)	(8)	127
Income tax expense	\$ 455	\$ 594	\$ 683
Attributable to items (charged) credited to (deficit) equity	\$ (6)	\$ (14)	\$ (4)

Reconciliation of Effective Income Tax Rate. Differences between effective income tax rates and the statutory U.S. federal income tax rate are as follows:

	2020	2019	2018
Statutory U.S. federal income tax rate	21.0%	21.0%	21.0%
State income taxes	0.9%	1.7%	1.6%
Tax on international activities	4.4%	6.5%	14.0%
U.S. tax effect of foreign earnings	3.4%	2.9%	(0.1)%
Other	0.4%	(0.2)%	(0.4)%
Effective income tax rate	30.1%	31.9%	36.1%

The 2020 effective tax rate is higher than the statutory U.S. rate primarily due to higher international tax rates as compared to the lower U.S. federal statutory rate and foreign earnings subject to U.S. tax under the provisions of the TCJA.

The 2020 effective tax rate compared to the 2019 effective tax rate reflects a tax benefit of \$10 million related to our change in assertion of no longer intending to reinvest certain undistributed earnings of our international subsidiaries made during the year as compared to the liability previously recorded by UTC, a decrease as a result of tax regulations related to the TCJA that were enacted during the year, as well as a recognition of a Separation-related foreign tax loss. These were partially offset by incremental withholding taxes in 2020.

The 2019 effective tax rate is higher than the statutory U.S. rate primarily due to higher international tax rates as compared to the lower U.S. federal statutory rate, and the full phase-in of the TCJA.

The 2019 effective tax rate compared to the 2018 effective tax rate reflects a decrease in the cost of U.S. and foreign tax on international activities primarily attributable to the absence of the net tax charge of \$143 million as a result of UTC's change of assertion of no longer intending to reinvest certain undistributed earnings of its international subsidiaries, offset by the full phase-in of the TCJA.

The 2018 effective tax rate is higher than the statutory U.S. rate as it reflects a net tax charge of \$143 million as a result of UTC's change of assertion of no longer intending to reinvest certain undistributed earnings of its international subsidiaries.

Deferred Tax Assets and Liabilities. Future income taxes represent the tax effects of transactions which are reported in different periods for tax and financial reporting purposes. These amounts consist of the tax effects of temporary differences between the tax and financial reporting balance sheets and tax carryforwards. Future income tax benefits and payables within the same tax paying component of a particular jurisdiction are offset for presentation in the Consolidated Balance Sheets.

The tax effects of temporary differences and tax carryforwards which gave rise to future income tax benefits and payables as of December 31, 2020 and 2019 are as follows:

<i>(dollars in millions)</i>	2020	2019
Future income tax benefits:		
Insurance and employee benefits	\$ 201	\$ 159
Other asset basis differences	149	121
Other liability basis differences	299	335
Tax loss carryforwards	197	45
Tax credit carryforwards	38	14
Valuation allowances	(242)	(55)
	\$ 642	\$ 619
Future income taxes payable:		
Intangible assets	\$ 182	\$ 174
Other assets basis differences	335	298
	\$ 517	\$ 472

Valuation allowances have been established primarily for tax credit carryforwards, tax loss carryforwards, and certain foreign temporary differences to reduce the future income tax benefits to expected realizable amounts. The table above includes impacts recorded as part of the Separation.

Tax Credit and Loss Carryforwards. As of December 31, 2020, tax credit carryforwards, principally state and foreign, and tax loss carryforwards, principally state and foreign, were as follows:

<i>(dollars in millions)</i>	Tax Credit Carryforwards	Tax Loss Carryforwards
Expiration period:		
2021-2025	\$ —	\$ 39
2026-2030	7	33
2031-2040	1	22
Indefinite	30	720
	\$ 38	\$ 814

Unrecognized Tax Benefits. As of December 31, 2020, the Company had gross tax-effected unrecognized tax benefits of \$397 million, all of which, if recognized, would impact the effective tax rate. A reconciliation of the beginning and ending amounts of unrecognized tax benefits and interest expense related to unrecognized tax benefits for the years ended December 31, 2020, 2019 and 2018 is as follows:

<i>(dollars in millions)</i>	2020	2019	2018
Balance at January 1	\$ 379	\$ 380	\$ 392
Additions for tax positions related to the current year	16	18	3
Additions for tax positions of prior years	41	15	1
Reductions for tax positions of prior years	(31)	(15)	(16)
Settlements	(8)	(19)	—
Balance at December 31	\$ 397	\$ 379	\$ 380
Gross interest expense related to unrecognized tax benefits	\$ 10	\$ 8	\$ 10
Total accrued interest balance at December 31	\$ 153	\$ 141	\$ 136

Otis conducts business globally and, as a result, Otis or one or more of its subsidiaries files income tax returns in the U.S. federal jurisdiction and various state and foreign jurisdictions.

In the ordinary course of business, Otis could be subject to examination by taxing authorities throughout the world, including such major jurisdictions as Austria, Belgium, Brazil, Canada, China, France, Germany, Hong Kong, India, Italy, Japan, Mexico, Netherlands, Portugal, Russia, South Korea, Spain, Switzerland, the United Kingdom and the U.S. With few exceptions, Otis is no longer subject to U.S. federal, state and local, or non-U.S. income tax examinations for years before 2010.

A subsidiary of Otis engaged in litigation in Belgium received a favorable appellate court decision in 2018. The Belgian Tax Authorities appealed the decision to the Court of Cassation (the equivalent of Supreme Court in Belgium). On December 4, 2020, the Court of Cassation overturned the decision of the appellate court and remanded the case to the appellate court for reconsideration. It is not known how much time will elapse prior to the issuance of the appellate court's decision. The associated tax and interest have been fully reserved.

In the ordinary course of business, there is inherent uncertainty in quantifying our income tax positions. We assess our income tax positions and record tax benefits for all years subject to examination based upon management's evaluation of the facts, circumstances, and information available at the reporting date. It is reasonably possible that a range of a \$10 million increase to a \$380 million reduction of unrecognized tax benefits and a range of a \$10 million increase to a \$150 million reduction in associated interest may occur within the next 12 months as a result of additional worldwide uncertain tax positions, the closure of tax statutes, or the revaluation of current uncertain tax positions arising from the issuance of legislation, regulatory or other guidance or developments in examinations, in appeals or in the courts.

See Note 21, "Contingent Liabilities" for discussion regarding uncertain tax positions, included in the above range, related to pending litigation with respect to certain deductions claimed in Germany.

NOTE 16: RESTRUCTURING COSTS

During the years ended December 31, 2020, 2019 and 2018, we recorded pre-tax restructuring costs totaling \$77 million, \$54 million and \$69 million, respectively, for new and ongoing restructuring actions. We recorded restructuring charges in our operating segments as follows:

(dollars in millions)	2020	2019	2018
New Equipment	\$ 30	\$ 19	\$ 25
Service	47	35	44
Total	\$ 77	\$ 54	\$ 69

Restructuring charges incurred in the years ended December 31, 2020, 2019 and 2018 primarily relate to actions initiated during 2020, 2019 and 2018, and were recorded as follows:

(dollars in millions)	2020	2019	2018
Cost of products and services sold	\$ 22	\$ 19	\$ 23
Selling, general and administrative	55	35	48
Non-service pension (benefit)	—	—	(2)
Total	\$ 77	\$ 54	\$ 69

2020 and 2019 Actions. During 2020, we recorded net pre-tax restructuring costs of \$71 million for restructuring actions initiated in 2020, consisting of \$21 million in Cost of products and services sold and \$50 million in Selling, general and administrative expenses. During 2020, we recorded net pre-tax restructuring costs totaling \$6 million for restructuring actions initiated in 2019, primarily included in Selling, general and administrative expenses. The 2020 and 2019 actions relate to ongoing cost reduction efforts, including workforce reductions.

We are targeting to complete in 2021 the majority of remaining restructuring actions initiated in 2020 and 2019. The following table summarizes the accrual balance and utilization for the 2020 and 2019 restructuring actions, which are primarily for severance costs:

(dollars in millions)	2020 Actions	2019 Actions
Restructuring accruals at January 1, 2020	\$ —	\$ 16
Net pre-tax restructuring costs	71	6
Utilization, foreign exchange and other costs	(29)	(14)
Balance at December 31, 2020	\$ 42	\$ 8

The following table summarizes expected, incurred and remaining costs for the 2020 and 2019 restructuring actions by segment:

(dollars in millions)	Expected Costs	Cost Incurred During 2019	Costs Incurred During 2020	Remaining Costs at December 31, 2020
New Equipment	\$ 33	\$ —	\$ (29)	\$ 4
Service	53	—	(42)	11
Total 2020 Actions	\$ 86	\$ —	\$ (71)	\$ 15
New Equipment	\$ 20	\$ (17)	\$ (2)	\$ 1
Service	37	(28)	(4)	5
Total 2019 Actions	\$ 57	\$ (45)	\$ (6)	\$ 6

2018 and Prior Actions. During 2020, no pre-tax restructuring costs were recorded for restructuring actions initiated in 2018 and prior.

NOTE 17: FINANCIAL INSTRUMENTS

We enter into derivative instruments primarily for risk management purposes, including derivatives designated as hedging instruments under ASC 820, *Fair Value Measurement*. We operate internationally and, in the normal course of business, are exposed to fluctuations in interest rates and foreign exchange rates. These fluctuations can increase the costs of financing, investing in and operating the business. We may use derivative instruments, including swaps, forward contracts and options, to manage certain foreign currency and interest rate exposures.

The average of the notional amount of foreign exchange contracts hedging foreign currency transactions was \$3.0 billion and \$1.0 billion at December 31, 2020 and 2019, respectively.

The following table summarizes the fair value and presentation on the Consolidated Balance Sheets for derivative instruments as of December 31, 2020 and 2019:

<i>(dollars in millions)</i>	Balance Sheet Classification	December 31, 2020	December 31, 2019
Derivatives designated as Cash flow hedging instruments:			
Foreign exchange contracts	Asset Derivatives:		
	Other current assets	\$ 9	\$ —
	Other assets	4	—
	Total asset derivatives	\$ 13	\$ —
	Liability Derivatives:		
	Accrued liabilities	\$ (7)	\$ (1)
	Other long-term liabilities	(4)	—
	Total liability derivatives	\$ (11)	\$ (1)
Derivatives not designated as Cash flow hedging instruments:			
Foreign exchange contracts	Asset Derivatives:		
	Other current assets	\$ 23	\$ 8
	Other assets	10	1
	Total asset derivatives	\$ 33	\$ 9
	Liability Derivatives:		
	Accrued liabilities	(24)	(5)
	Other long-term liabilities	(8)	—
	Total liability derivatives	\$ (32)	\$ (5)

The amount of gain or (loss) attributable to foreign exchange contract activity reclassified from Accumulated other comprehensive income (loss) was immaterial for the years ended December 31, 2020 and 2019, respectively.

The effect of cash flow hedging relationships on Accumulated other comprehensive income (loss) as of December 31, 2020 and 2019 are presented in the table below.

	December 31,	
(dollars in millions)	2020	2019
Gain (loss) recorded in Accumulated other comprehensive income (loss)	\$ 4	\$ (3)

The Company utilizes the critical terms match method in assessing firm commitment derivatives for hedge effectiveness. Accordingly, the hedged items and derivatives designated as hedging instruments are highly effective.

We have €420 million of Euro-denominated commercial paper, which qualifies as a net investment hedge against our investments in European businesses. As of December 31, 2020, the net investment hedge is deemed to be effective. We have recognized \$18 million of losses associated with this net investment hedge in Other comprehensive income (loss) during 2020 and in Accumulated other comprehensive income (loss) at December 31, 2020.

Assuming current market conditions continue, a \$2 million pre-tax loss is expected to be reclassified from Accumulated other comprehensive income (loss) into Product sales to reflect the fixed prices obtained from foreign exchange hedging within the next 12 months. At December 31, 2020, all derivative contracts accounted for as cash flow hedges will mature by December 2024.

The effect of derivatives not designated as Cash flow hedging instruments within Other income (expense) net, on the Consolidated Statements of Operations was as follows:

	Year Ended December 31,	
(dollars in millions)	2020	2019
Foreign exchange contracts	\$ (4)	\$ (9)

NOTE 18: FAIR VALUE MEASUREMENTS

In accordance with the provisions of ASC 820: *Fair Value Measurements*, the following tables provide the valuation hierarchy classification of assets and liabilities that are carried at fair value and measured on a recurring and non-recurring basis in our Consolidated Balance Sheets as of December 31, 2020 and 2019:

		December 31, 2020			
(dollars in millions)	Total	Level 1	Level 2	Level 3	
Recurring fair value measurements:					
Equity securities	\$ 59	\$ 59	\$ —	\$ —	
Derivative assets	46	—	46	—	
Derivative liabilities	(43)	—	(43)	—	

		December 31, 2019			
(dollars in millions)	Total	Level 1	Level 2	Level 3	
Recurring fair value measurements:					
Equity securities	\$ 3	\$ 3	\$ —	\$ —	
Derivative assets	9	—	9	—	
Derivative liabilities	(5)	—	(5)	—	

Valuation Techniques. Our equity securities include equity investments that are traded in active markets, either domestically or internationally, and are measured at fair value using closing stock prices from active markets. The fair value gains or losses related to our equity securities are recorded through net income. Our derivative assets and liabilities include foreign exchange contracts that are measured at fair value using internal models based on observable market inputs such as forward rates, interest rates, our own credit risk and our counterparties' credit risks. Our notes, as described in Note 10, "Borrowings and Lines of Credit", are measured at fair value using closing bond prices from active markets.

As of December 31, 2020, there has not been any significant impact to the fair value of our derivative liabilities due to our own credit risk. Similarly, there has not been any significant adverse impact to our derivative assets based on our evaluation of our counterparties' credit risks.

The following table provides carrying amounts and fair values of financial instruments that are not carried at fair value in our Consolidated Balance Sheets at December 31, 2020 and 2019:

(dollars in millions)	December 31, 2020		December 31, 2019	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Long-term receivables, net	\$ 65	\$ 62	\$ 62	\$ 62
Customer financing notes receivable, net	128	126	62	62
Short-term borrowings	(701)	(701)	(34)	(34)
Long-term debt (excluding leases and other)	(5,300)	(5,717)	—	—
Long-term liabilities	(263)	(234)	(4)	(4)

Long-term liabilities as of December 31, 2020 includes \$239 million of payables to RTX for reimbursement of tax payments RTX is responsible to pay after the Separation as a result of the TMA.

The following tables provide the valuation hierarchy classification of assets and liabilities that are not carried at fair value in the Consolidated Balance Sheets at December 31, 2020 and 2019:

December 31, 2020				
(dollars in millions)	Total	Level 1	Level 2	Level 3
Long-term receivables, net	\$ 62	\$ —	\$ 62	\$ —
Customer financing notes receivable, net	126	—	126	—
Short-term borrowings	(701)	—	(701)	—
Long-term debt (excluding leases and other)	(5,717)	—	(5,717)	—
Long-term liabilities	(234)	—	(234)	—

December 31, 2019				
(dollars in millions)	Total	Level 1	Level 2	Level 3
Long-term receivables	\$ 62	\$ —	\$ 62	\$ —
Customer financing notes receivable, net	62	—	62	—
Short-term borrowings	(34)	—	(34)	—
Long-term liabilities	(4)	—	(4)	—

NOTE 19: GUARANTEES

The Company provides service and warranty on its products beyond normal service and warranty policies. The changes in the carrying amount of service and product guarantees for the years ended December 31, 2020 and 2019 are as follows:

(dollars in millions)	2020	2019
Balance as of January 1	\$ 27	\$ 47
Warranties	12	10
Settlements made	(14)	(18)
Other	—	(12)
Balance as of December 31	\$ 25	\$ 27

The Company provides certain financial guarantees to third parties. As of December 31, 2020, Otis has stand-by letters of credit with maximum potential payment totaling \$185 million. We accrue costs associated with guarantees when it is probable that a liability has been incurred and the amount can be reasonably estimated. The most likely cost to be incurred is accrued based on an evaluation of currently available facts, and where no amount within a range of estimates is more likely, the minimum is accrued. In accordance with the FASB ASC Topic 460: *Guarantees*, we record these liabilities at fair value. As of December 31, 2020, Otis has determined there are no estimated costs probable under these guarantees.

NOTE 20: LEASES

ASU 2016-02, *Leases (Topic 842)* and its related amendments (collectively, "Lease Accounting Standard") were effective for reporting periods beginning after December 15, 2018. We adopted the Lease Accounting Standard effective January 1, 2019 and elected the modified retrospective approach in which results for periods before 2019 were not adjusted for the new standard and the cumulative effect of the change in accounting was recognized through retained earnings at the date of adoption.

The Lease Accounting Standard establishes a right-of-use ("ROU") model that requires a lessee to record a ROU asset and a lease liability on the Consolidated Balance Sheets for all leases with terms longer than 12 months. Leases are classified as either finance or operating, with classification affecting the pattern of expense recognition on the Consolidated Statements of Operations. In addition, this standard requires a lessor to classify leases as either sales-type, finance or operating. A lease will be treated as a sale if it transfers all of the risks and rewards, as well as control of the underlying asset, to the lessee. If risks and rewards are conveyed without the transfer of control, the lease is treated as financing. If the lessor doesn't convey risks and rewards or control, the lease is treated as operating.

We elected certain of the practical expedients available under the Lease Accounting Standard upon adoption. We applied the practical expedient which allows prospective transition to the Lease Accounting Standard on January 1, 2019. Under the transition practical expedient, we did not reassess lease classification, embedded leases or initial direct costs. We have applied the practical expedient for short-term leases, whereby a lease ROU asset and liability is not recognized and the expense is recognized in a straight-line basis over the lease term. In addition, we have lease agreements with lease and non-lease components, for which we have elected the practical expedients to combine these components for certain equipment leases. The adoption of the Lease Accounting Standard did not have a material effect on our Consolidated Financial Statements. Upon adoption, we recorded a \$530 million ROU asset and a \$523 million lease liability.

We enter into lease agreements for the use of real estate space, vehicles and certain other equipment under operating and finance leases. We determine if an arrangement contains a lease at inception. Operating leases are included in Operating lease ROU assets, Accrued liabilities, and Operating lease liabilities in our Consolidated Balance Sheets. Finance leases are not considered significant to our Consolidated Balance Sheets or Consolidated Statements of Operations.

ROU assets represent our right to use an underlying asset for the lease term and lease liabilities represent our obligation to make lease payments arising from the lease. Lease ROU assets and liabilities are recognized at commencement date based on the present value of lease payments over the lease term. As most of our leases do not provide an implicit rate, we use our incremental borrowing rate based on the information available at commencement date in determining the present value of lease payments, and use the implicit rate when readily determinable. We determine our incremental borrowing rate through market sources including relevant industry rates. Our lease ROU assets also include any lease pre-payments and exclude lease incentives. Certain of our leases include variable payments, which may vary based upon changes in facts or circumstances after the start of the lease. We exclude variable payments from lease ROU assets and lease liabilities, to the extent not considered fixed, and instead, expense variable payments as incurred. Variable lease expense and lease expense for short duration contracts is not a material component of lease expense. Our leases generally have remaining lease terms of 1 to 20 years, some of which include options to extend leases. The majority of our leases with options to extend are up to five years with the ability to terminate the lease within one year. The exercise of lease renewal options is at our sole discretion and our lease ROU assets and liabilities reflect only the options we are reasonably certain that we will exercise. Lease expense is recognized on a straight-line basis over the lease term.

Operating lease expense for the years ended December 31, 2020 and 2019 was \$186 million and \$191 million, respectively. Prior to the adoption of the New Lease Accounting Standard, rent expense was \$161 million in 2018.

Supplemental cash flow information related to operating leases for the years ended December 31, 2020 and 2019 were as follows:

<i>(dollars in millions)</i>	2020	2019
Operating cash flows used for the measurement of operating lease liabilities	\$ (162)	\$ (134)
Operating lease ROU assets obtained in exchange for operating lease obligations	126	157

Operating lease ROU assets and liabilities are reflected on our Consolidated Balance Sheets as follows:

<i>(dollars in millions)</i>	December 31, 2020	December 31, 2019
Operating lease ROU assets	\$ 542	\$ 535
Accrued liabilities	\$ 167	\$ 140
Operating lease liabilities	367	386
Total operating lease liabilities	\$ 534	\$ 526

Supplemental information related to operating leases was as follows:

<i>(dollars in millions)</i>	December 31, 2020	December 31, 2019
Weighted Average Remaining Lease Term (in years)	5.0	5.3
Weighted Average Discount Rate	2.9%	3.4%

Undiscounted maturities of operating lease liabilities, including options to extend lease terms that are reasonably certain of being exercised, as of December 31, 2020 are as follows:

<i>(dollars in millions)</i>	Total
2021	\$ 172
2022	134
2023	95
2024	63
2025	42
Thereafter	84
Total undiscounted lease payments	590
Less: imputed interest	(56)
Total discounted lease payments	\$ 534

NOTE 21: CONTINGENT LIABILITIES

Except as otherwise noted, while we are unable to predict the final outcome, based on information currently available, we do not believe that resolution of any of the following matters will have a material adverse effect upon our competitive position, results of operations, cash flows or financial condition. Legal costs generally are expensed when incurred.

Environmental.

As previously disclosed, the Company's operations are subject to environmental regulation by authorities with jurisdiction over its operations. The Company has accrued for the costs of environmental remediation activities, including, but not limited to, investigatory, remediation, operating and maintenance costs and performance guarantees, and periodically reassesses these amounts. Management believes that the likelihood of incurring losses materially in excess of amounts accrued is remote. The outstanding liability for environmental obligations was \$12 million as of December 31, 2020 and December 31, 2019, and is included in Accrued liabilities and Other long-term liabilities on the Consolidated Balance Sheets.

Legal Proceedings.**German Tax Litigation**

As previously disclosed, we have been involved in administrative review proceedings with the German Tax Office, which concern approximately €215 million (approximately \$264 million as of December 31, 2020) of tax benefits that we have claimed related to a 1998 reorganization of the corporate structure of our operations in Germany. Upon audit, these tax benefits were disallowed by the German Tax Office. We estimate interest associated with the aforementioned tax benefits is an additional approximately €118 million (approximately \$145 million as of December 31, 2020).

On August 3, 2012, a suit was filed in the local German Tax Court (Berlin-Brandenburg). In 2015, our former parent UTC made tax and interest payments to German tax authorities of €275 million (approximately \$300 million) in order to avoid additional interest accruals pending final resolution of this matter. In March 2016, the local German Tax Court dismissed the suit, and we appealed this decision to the German Federal Tax Court. Following a hearing on July 24, 2018, the German Federal Tax Court remanded the matter to the local German Tax Court for further proceedings. On December 7, 2020, the local Tax Court ruled against the Company. We have filed an appeal with the Federal Tax Court; however there is no assurance that the Federal Tax Court will agree to hear the appeal or, if it does, rule in the Company's favor, and it is possible that the decision of the German Tax Office ultimately could be sustained.

Pursuant to the TMA, the Company retains the liability associated with the remaining interest, and has recorded an interest accrual of €45 million (approximately \$55 million as of December 31, 2020), net of payments and other deductions, included within Accrued liabilities on the Consolidated Balance Sheets at December 31, 2020. In the event that RTX and the Company prevail in this matter, any recoveries would be allocated between RTX and the Company pursuant to the terms of the TMA.

Asbestos Matters

As previously disclosed, we have been named as defendants in lawsuits alleging personal injury as a result of exposure to asbestos. While we have never manufactured any asbestos-containing component parts, and no longer incorporate asbestos in any current products, certain of our historical products have contained components manufactured by third parties incorporating asbestos. A substantial majority of these asbestos-related claims have been dismissed without payment or were covered in full or in part by insurance or other forms of indemnity. Additional cases were litigated and settled without any insurance reimbursement. The amounts involved in asbestos related claims were not material individually or in the aggregate as of, and for the periods ended, December 31, 2020 and December 31, 2019.

The estimated range of total liabilities to resolve all pending and unasserted potential future asbestos claims through 2059 is \$23 million to \$45 million as of December 31, 2020, and \$24 million to \$45 million as of December 31, 2019. Because no amount within the range of estimates is more likely to occur than any other, we recorded the minimum amount of \$23 million and \$24 million as of December 31, 2020 and 2019, respectively, which is principally recorded in Other long-term liabilities on our Consolidated Balance Sheets. Amounts are on a pre-tax basis, not discounted, and excludes the Company's legal fees to defend the asbestos claims (which will continue to be expensed as they are incurred). In addition, the Company has an insurance recovery receivable for probable asbestos related recoveries of approximately \$5 million, which is principally recorded in Other assets on our Consolidated Balance Sheets as of December 31, 2020 and December 31, 2019.

Putative Class Action Lawsuit

On August 12, 2020, a putative class action lawsuit, (Geraud Darnis et al. v. Raytheon Technologies Corporation et al.), was filed in the United States District Court for the District of Connecticut against Otis, Raytheon Technologies Corporation ("RTX"), Carrier, each of their directors, and various incentive and deferred compensation plans. The named plaintiffs are former employees of UTC and its current and former subsidiaries, including Otis and Carrier. They seek to recover monetary damages, as well as related declaratory and equitable relief, based on claimed decreases in the value of long-term incentive awards and deferred compensation under nonqualified deferred compensation plans allegedly caused by the formula used to calculate the adjustments to such awards and deferred compensation from RTX, Carrier, and Otis following the spin-offs of Carrier and Otis and the subsequent combination of UTC and Raytheon Company. Otis believes that the claims against the Company are without merit. At this time, Otis is unable to predict the outcome, or the possible loss or range of loss, if any, which could result from this action.

Other.

As previously disclosed, we have commitments and contingent liabilities related to legal proceedings, self-insurance programs and matters arising out of the normal course of business. We accrue contingencies based on a range of possible outcomes. If no amount within this range is a better estimate than any other, we accrue the minimum amount. While it is not possible to determine the ultimate disposition of each of these claims and whether they will be resolved consistent with our beliefs, we expect that the outcome of such claims, individually or in the aggregate, will not have a material adverse effect on our business, financial condition, cash flows or results of operations.

As previously disclosed, in certain European countries, claims for overcharges on elevators and escalators related to civil cartel cases have been made, which we have accrued for based on our evaluation of the claims. While it is not possible to determine the ultimate disposition of each of these claims and whether they will be resolved consistent with our beliefs, historical settlement experience of these cases have not been material to the business, financial condition, cash flows or results of operations, however the future outcome of these cases cannot be determined.

As previously disclosed, in the ordinary course of business, the Company is also routinely a defendant in, party to or otherwise subject to many pending and threatened legal actions, claims, disputes and proceedings. These matters are often based on alleged violations of contract, product liability, warranty, regulatory, environmental, health and safety, employment, intellectual property, tax and other laws. In some

of these proceedings, claims for substantial monetary damages are asserted against the Company and its subsidiaries and could result in fines, penalties, compensatory or treble damages or non-monetary relief. We do not believe that these matters will have a material adverse effect upon our competitive position, results of operations, cash flows or financial condition.

NOTE 22: SEGMENT FINANCIAL DATA

Our operations are classified into two operating segments: New Equipment and Service. Through the New Equipment segment, we design, manufacture, sell and install a wide range of passenger and freight elevators as well as escalators and moving walkways to customers in the residential and commercial building and infrastructure projects. The Service segment provides maintenance and repair services for both our products and those of other manufacturers, and provides modernization services to upgrade elevators and escalators. The operating segments are generally based on the management structure of the Company, how management allocates resources, assesses performance and makes strategic and operational decisions.

Segment Information. Segment information for the years ended December 31 are as follows:

(dollars in millions)	Net Sales			Operating Profit		
	2020	2019	2018	2020	2019	2018
New Equipment	\$ 5,371	\$ 5,648	\$ 5,596	\$ 318	\$ 393	\$ 390
Service	7,385	7,470	7,319	1,611	1,603	1,516
Total segments	12,756	13,118	12,915	1,929	1,996	1,906
General corporate expenses and other ¹	—	—	—	(290)	(182)	(71)
Total	\$ 12,756	\$ 13,118	\$ 12,915	\$ 1,639	\$ 1,814	\$ 1,835

¹ The increase in General corporate expenses and other during 2020 compared to 2019 is primarily driven by current year fixed asset impairments of \$71 million and associated license costs of \$14 million, incremental standalone public company costs, as well as \$76 million higher non-recurring Separation-related expenses in 2020. These were partially offset by favorable foreign exchange activity during 2020 compared to 2019 of \$46 million.

Total assets are not presented for each segment as they are not presented to, or reviewed by, the Chief Operating Decision Maker.

Geographic External Sales. Geographic Net sales are attributed to the geographic regions based on their location of origin. With the exception of the U.S. and China, there were no individually significant countries with sales exceeding 10% of Net sales during the years ended December 31, 2020, 2019 and 2018.

(dollars in millions)	External Net Sales			Long Lived Assets		
	2020	2019	2018	2020	2019	2018
United States Operations	\$ 3,462	\$ 3,594	\$ 3,429	\$ 309	\$ 295	\$ 246
International Operations						
China	2,135	2,113	1,919	113	105	113
Other	7,159	7,411	7,567	352	321	319
Total	\$ 12,756	\$ 13,118	\$ 12,915	\$ 774	\$ 721	\$ 678

Segment Net sales disaggregated by product and service type for the years ended December 31, 2020, 2019 and 2018 are as follows:

<i>(dollars in millions)</i>	2020	2019	2018
Disaggregated Net sales by type			
New Equipment	\$ 5,371	\$ 5,648	\$ 5,596
Maintenance and Repair	6,047	6,120	6,017
Modernization	1,338	1,350	1,302
Total Service	7,385	7,470	7,319
Total	\$ 12,756	\$ 13,118	\$ 12,915

Major Customers. There were no customers that individually accounted for 10% or more of the Company's consolidated Net sales for the years ended December 31, 2020, 2019 and 2018.

Selected Quarterly Financial Data (Unaudited)

The following tables show a summary of the Company's quarterly financial information for each of the four quarters of 2020 and 2019 (in millions, except per share amounts):

	Fourth Quarter	Third Quarter	Second Quarter	First Quarter
2020:				
Net sales	\$ 3,493	\$ 3,268	\$ 3,029	\$ 2,966
Gross margin	1,012	979	891	897
Net income attributable to shareholders	251	266	224	165
Earnings per share of Common Stock¹:				
Basic - net income attributable to shareholders	\$ 0.58	\$ 0.61	\$ 0.52	\$ 0.38
Diluted - net income attributable to shareholders	\$ 0.58	\$ 0.61	\$ 0.52	\$ 0.38

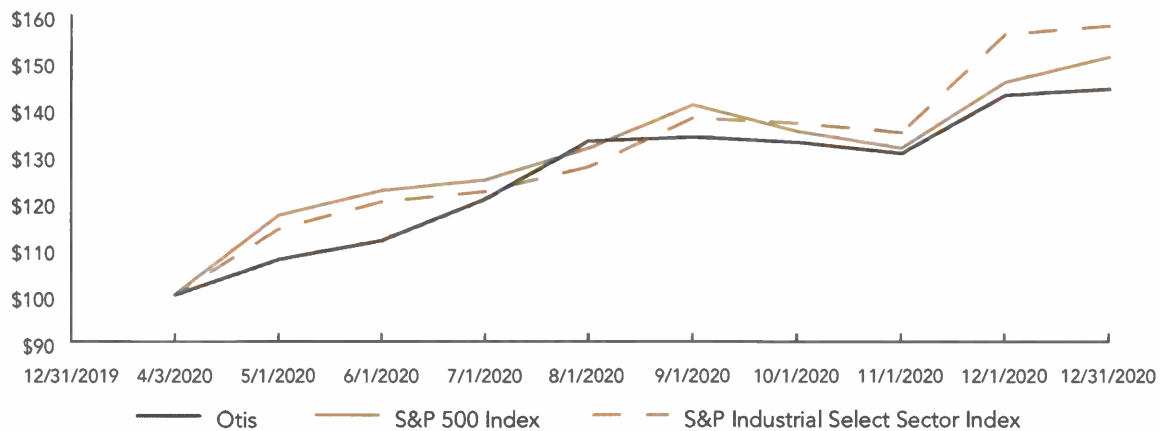
	Fourth Quarter	Third Quarter	Second Quarter	First Quarter
2019:				
Net sales	\$ 3,353	3,313	\$ 3,351	\$ 3,101
Gross margin	966	975	984	901
Net income attributable to shareholders	218	317	308	273
Earnings per share of Common Stock¹:				
Basic - net income attributable to shareholders	\$ 0.50	\$ 0.73	\$ 0.71	\$ 0.63
Diluted - net income attributable to shareholders	\$ 0.50	\$ 0.73	\$ 0.71	\$ 0.63

¹ Basic and diluted earnings per share are computed independently for each of the quarters presented. Therefore, the sum of quarterly basic and diluted per share information may not equal annual basic and diluted earnings per share.

Performance Graph (Unaudited)

The following graph and table illustrate the total return from April 3, 2020 (date of Separation) through December 31, 2020, for (i) our Common Stock, (ii) the Standard and Poor's ("S&P") 500 Index, and (iii) the S&P 500 Industrial Select Sector Index. The graph and table assume that \$100 was invested on April 3, 2020 in each of our Common Stock, the S&P 500 Index and the S&P 500 Industrial Select Sector Index, and that any dividends were reinvested. The comparison reflected in the graph and the table are not intended to forecast the future performance of our Common Stock and may not be indicative of our future performance.

Comparison of Cumulative Total Return



	April 3, 2020	June 30, 2020	September 30, 2020	December 31, 2020
Otis	\$ 100	\$ 121	\$ 133	\$ 144
S&P 500 Index	100	125	135	151
S&P Industrial Select Sector Index	100	122	137	158

Reconciliation of Reported (GAAP) to Adjusted Operating Profit & Operating Profit Margin

(dollars in millions)

	2020	2019
New Equipment		
Net sales	\$ 5,371	\$ 5,648
GAAP Operating profit	318	393
Restructuring	30	19
UTC allocated corporate expenses	—	6
Public company standalone costs ¹	—	(16)
Other	—	—
Adjusted New Equipment Operating Profit	\$ 348	\$ 402
Adjusted operating profit margin	6.5%	7.1%
Service		
Net sales	\$ 7,385	\$ 7,470
GAAP Operating profit	1,611	1,603
Restructuring	47	35
UTC allocated corporate expenses	—	14
Public company standalone costs ¹	—	(56)
Other	—	3
Adjusted Service Operating Profit	\$ 1,658	\$ 1,599
Adjusted Operating Profit Margin	22.5%	21.4%
General corporate expenses and other		
General corporate expenses and other	(87)	(129)
Adjusted Total Operating Profit	\$ 1,919	\$ 1,872
Total Otis		
GAAP Operating profit	\$ 1,639	\$ 1,814
Restructuring	77	54
Loss on disposal of business	—	26
One-time separation costs	119	43
Expected insurance recovery	(17)	—
Fixed asset impairment	85	—
UTC allocated corporate expenses	16	80
Public company standalone costs ¹	—	(147)
Other	—	2
Adjusted Total Operating Profit	\$ 1,919	\$ 1,872
Adjusted Operating Profit Margin	15.0%	14.3%

¹ Public company standalone costs represent estimated costs such as personnel costs, risk management and incentive compensation that have been incurred and are reflected in results for the quarter and year ended December 31, 2020 and are not adjusted. For the quarter ended and year ended December 31, 2019, these standalone costs have been included in the adjustments, as though Otis' operations had been conducted independently from our former parent UTC.

Reconciliation of Reported (GAAP) to Adjusted (Non-GAAP) Net Income, Earnings Per Share

	Year Ended December 31,	
(dollars in millions, except per share amounts)	2020	2019
Adjusted Operating Profit	\$ 1,919	\$ 1,872
Non-service pension cost ¹	(5)	(9)
Net interest expense ²	(123)	(160)
Adjusted income from operations before income taxes	1,791	1,703
Income tax expense	455	594
Tax impact on restructuring and non-recurring items	58	18
Tax impact on other adjustments	—	(41)
Non-recurring tax items	32	10
Adjusted net income from operations	1,246	1,122
Noncontrolling interest	150	151
Adjusted net income attributable to common shareholders	\$ 1,096	\$ 971
GAAP income attributable to common shareholders	\$ 906	\$ 1,116
Restructuring	77	54
Loss on disposal of business	—	26
One-time separation costs	119	43
Expected insurance recovery	(17)	—
Fixed asset impairment	85	—
UTC allocated corporate expenses	16	80
Public company standalone costs ³	—	(147)
Non-service pension cost ¹	—	(42)
Net interest expense ²	—	(174)
Other	—	2
Tax effects of restructuring, non-recurring items and other adjustments	(58)	23
Non-recurring tax items	(32)	(10)
Adjusted net income attributable to common shareholders	\$ 1,096	\$ 971
Diluted Earnings Per Share	\$ 2.08	\$ 2.58
Impact to diluted earnings per share	0.44	(0.34)
Adjusted Diluted Earnings Per Share	\$ 2.52	\$ 2.24

¹ Non-service pension included in GAAP net income attributable to Otis includes amounts associated with Otis' participation in our former parent UTC's retained pension plans. The amounts related to these plans are removed from Otis' results in 2019, as though Otis' operations had been conducted independently from UTC.

² Otis issued debt and began to incur interest expenses in February 2020 associated with the debt issuance. The current quarter and year-to-date actual interest expense incurred has been reflected in the comparative period in 2019 as though Otis incurred those expenses in the prior year.

³ Public company standalone costs represent estimated costs such as personnel costs, risk management and incentive compensation that have been incurred and are reflected in results for the quarter ended and year ended December 31, 2020 and are not adjusted. For the quarter ended and year ended December 31, 2019, these standalone costs have been included in the adjustments, as though Otis' operations had been conducted independently from UTC.

Free Cash Flow Reconciliation

(dollars in millions)	Twelve Months Ended December 31,	
	2020	2019
Net income attributable to common shareholders	\$ 906	\$ 1,116
Net cash flows provided by operating activities	\$ 1,480	\$ 1,469
Net cash flows provided by operating activities as a percentage of net income attributable to common shareholders	163%	132%
Capital expenditures	(183)	(145)
Capital expenditures as a percentage of net income attributable to common shareholders	(21)%	(13)%
Free cash flow	\$ 1,297	\$ 1,324
Free cash flow as a percentage of net income attributable to common shareholders	143%	119%

Use and Definitions of Non-GAAP Financial Measures

Otis Worldwide Corporation ("Otis") reports its financial results in accordance with accounting principles generally accepted in the United States ("GAAP"). We supplement the reporting of our financial information determined under GAAP with certain non-GAAP financial information. The non-GAAP information presented provides investors with additional useful information, but should not be considered in isolation or as substitutes for the related GAAP measures. Moreover, other companies may define non-GAAP measures differently, which limits the usefulness of these measures for comparisons with such other companies. We encourage investors to review our financial statements and publicly filed reports in their entirety and not to rely on any single financial measure. A reconciliation of the non-GAAP measures (referenced in this press release) to the corresponding amounts prepared in accordance with GAAP appears in the attached tables. These tables provide additional information as to the items and amounts that have been excluded from the adjusted measures.

Adjusted operating profit represents income from continuing operations (a GAAP measure), excluding restructuring costs, other significant items and allocated costs for certain functions and UTC allocated costs and including estimated standalone public company costs.

Adjusted net income represents net income from continuing operations (a GAAP measure), excluding restructuring costs and other significant items and UTC allocated costs and including estimated standalone public company costs, estimated adjustments to non-service pension expense, net interest expense and income tax expense as if Otis was a standalone public company ("standalone operating income adjustments"). Adjusted EPS represents diluted earnings per share from continuing operations (a GAAP measure), adjusted for the per share impact of restructuring, other significant items and standalone operating income adjustments.

Free cash flow is a non-GAAP financial measure that represents cash flow from operations (a GAAP measure) less capital expenditures. Management believes free cash flow is a useful measure of liquidity and an additional basis for assessing Otis' ability to fund its activities, including the financing of acquisitions, debt service, repurchases of common stock and distribution of earnings to shareholders.

Additionally, GAAP financial results include the impact of changes in foreign currency exchange rates ("AFX"). We use the non-GAAP measure "at constant currency" or "CFX" to show changes in our financial results without giving effect to period-to-period currency fluctuations. Under U.S. GAAP, income statement results are translated in US dollars at the average exchange rate for the period presented. Management believes that this non-GAAP measure is useful in providing period-to-period comparisons of the results of the Company's ongoing operational performance.

A reconciliation of the non-GAAP measures to the corresponding amounts prepared in accordance with GAAP appears in the tables above. The tables above provide additional information as to the items and amounts that have been excluded from the adjusted measures.

Board of Directors



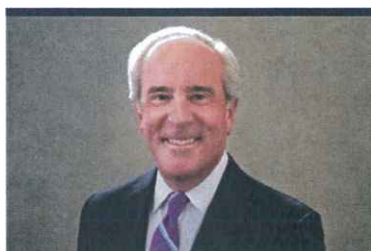
Jeffrey H. Black
Former Senior Partner
and Vice Chairman, Deloitte LLP



Kathy Hopinkah Hannan
Former Global Lead Partner, National
Managing Partner and Vice Chairman,
KPMG, LLP



Shailesh G. Jejurikar
Chief Executive Officer and Executive
Sponsor, Corporate Sustainability,
Fabric & Home Care, The Procter
& Gamble Company



Christopher J. Kearney
Executive Chairman,
Otis Worldwide Corporation



Judith F. Marks
President & Chief Executive Officer,
Otis Worldwide Corporation



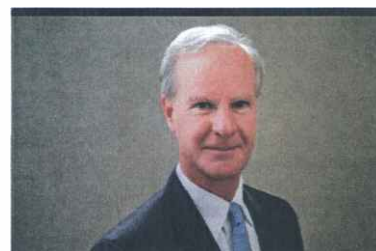
Harold W. McGraw III
Former Chairman, President
& Chief Executive Officer, McGraw-Hill
Companies



Margaret M. V. Preston
Former Managing Director,
U.S. Wealth Management,
TD Bank



Shelley Stewart, Jr.
Former Chief Procurement Officer,
E. I. du Pont de Nemours and Company

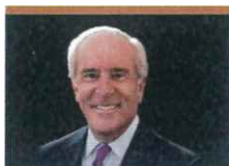


John H. Walker
Former Chairman and Chief Executive
Officer, Global Brass and Copper
Holdings, Inc.

Senior Leadership



Judy Marks*
President & Chief
Executive Officer



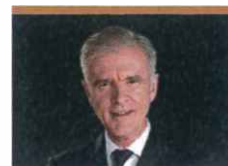
Christopher Kearney*
Executive Chairman



Bernardo Calleja*
President,
Otis EMEA



Jim Cramer*
President,
Otis Americas



**Stéphane de
Montlivault***
President,
Otis Asia Pacific



Robin Fiala
Vice President,
Sales & Marketing



Rahul Ghai*
Executive Vice President
& Chief Financial Officer



Todd Glance
Executive Vice President,
Operations



Neil Green
Executive Vice President
& Chief Digital Officer



Rajesh Krishnamurthy
Vice President,
Product Management



Nora LaFreniere*
Executive Vice President,
Chief General Counsel
& Corporate Secretary



Stacy Laszewski
Vice President, FP&A
& Investor Relations



Luis Molina
Executive Vice President,
Growth & Strategy



Ricardo Muñoz
Senior Vice President,
Engineering



Michael Ryan*
Vice President &
Chief Accounting Officer



Randi Tanguay
Vice President & Chief
Communications Officer



Renee Zaugg
Vice President & Chief
Information Officer



Perry Zheng*
President,
Otis China

* Executive Officer

Shareholder Information

CORPORATE OFFICE

Otis Worldwide Corporation
1 Carrier Place
Farmington, CT 06032 USA
www.otis.com

This report is made available to shareholders in advance of the 2021 Annual Meeting of Shareholders to be held as a virtual meeting at 9 a.m. ET, April 27, 2021. The proxy statement will be made available to shareholders on or about March 12, 2021, at which time proxies for the meeting will be requested.

For information on how to attend the virtual annual meeting, visit:
www.virtualshareholdermeeting.com/OTIS2021
and follow the instructions provided.

STOCK LISTING

New York Stock Exchange (ticker symbol OTIS)

TRANSFER AGENT AND REGISTRAR

Computershare Trust Company, N.A., is the transfer agent, registrar and dividend disbursing agent for Otis' common stock. Questions and communications from registered shareholders regarding transfer of stock, replacement of lost certificates, dividends, address changes, and the Stock Purchase and Dividend Reinvestment Plan administered by Computershare should be directed to:

Computershare Trust Company, N.A.
462 South 4th Street
Suite 1600
Louisville, KY 40202
866.524.0723
781.575.3346 (outside U.S.)
800.952.9245 (TDD)
www-us.computershare.com/Investor/#Home



The papers used in the printing of this Annual Report are certified by the Forest Stewardship Council®, which promotes environmentally appropriate, socially beneficial and economically viable management of the world's forests. These papers contain a mix of pulp that is derived from FSC® certified well-managed forests; post-consumer recycled paper fibers and other controlled sources. Sandy Alexander, Inc FSC® "Chain of Custody" certification is BVQI-C020268.

Otis Worldwide Corporation and its subsidiaries' names, abbreviations thereof, logos, and product and service designators are either the registered or unregistered trademarks or trade names of Otis Worldwide Corporation and its subsidiaries. Names of other companies, abbreviations thereof, logos of other companies, and product and service designators of other companies are either the registered or unregistered trademarks or trade names of their respective owners.

DIVIDENDS

Dividends are usually paid on the 10th day of March, June, September and December.

ELECTRONIC ACCESS OR DELIVERY OF SHAREHOLDER COMMUNICATIONS

Registered shareholders can help conserve natural resources and reduce printing and mailing costs incurred by Otis by signing up for electronic communications, including annual meeting materials, stock plan statements and tax documents, at: www-us.computershare.com/Investor/#Home.

Otis Worldwide Corporation and Computershare Investor Services do not have records of beneficial owners of Otis common stock. If you are a beneficial owner of Otis common stock, please contact your broker, bank or other nominee for assistance with any questions concerning ownership or dividends.

2020 ANNUAL REPORT ON FORM 10-K

Copies of the Otis Annual Report on Form 10-K as filed with the U.S. Securities and Exchange Commission can be accessed and downloaded via our website at: www.otisinvestors.com/financials/sec-filings.

Copies can also be obtained, without charge, from:

Otis Corporate Secretary
Otis Worldwide Corporation
1 Carrier Place
Farmington, CT 06032
860.676.6011
www.otis.com
corpsecretary@otis.com

INVESTOR RELATIONS

Otis Worldwide Corporation
1 Carrier Place
Farmington, CT 06032
860.676.6011
investorrelations@otis.com

An aerial night photograph of a city, likely New York City, with a prominent skyscraper on the right side. The city lights are visible in the background, and the foreground shows the structure of the skyscraper's facade.

Made to move you™

OTIS

Otis Worldwide Corporation
1 Carrier Place, Farmington, CT 06032 USA
www.otis.com



OTIS

Otis Worldwide Corporation
Annual Report 2021

Creating connections

At Otis, we connect people to
where they need to go – and
to what matters most.



“We are fostering connections everywhere – not just in our integrated technology and solution ecosystems, but also within our own teams, across our communities and throughout the world.”

Judy Marks
Chair, Chief Executive Officer and President

Judy Marks, Chair, Chief Executive Officer and President (center left); Abbe Luersman, Executive Vice President & Chief People Officer (center-right foreground); and Bernardo Calleja, President, Otis EMEA (second from left), gather with Otis field professionals and local leaders at London's historic Battersea Power Station on the River Thames, where Otis is installing a double-deck lift in one of the power station's massive chimneys. The chimney is being rebuilt, with a glass viewing platform installed at the top, as part of a major redevelopment project.

70,000 colleagues

Our teams work together across countries and cultures to deliver for our customers and passengers, every day.

Gen3™ & Gen360™

We launched a new generation of connected elevators that will help transform the industry.

Net sales of \$14.3B

Our net sales grew across both New Equipment and Service segments.

About the cover and inside front cover Distinguished by its flamboyantly orange exterior megabrake, the 44-floor Atrio Torre Norte represents an important step in the renaissance of central Bogotá, Colombia's capital city. Otis supplied 38 elevators and escalators for the project, including 14 SkyRise® high-speed elevators. The tower has been certified LEED Gold by the U.S. Green Building Council, with Otis' energy-efficient technology contributing to the building's sustainable design and operation.

Dear Shareholders,

2021 was a year defined by the impressive accomplishments made possible by the passion and commitment of our 70,000 colleagues around the world. We skillfully executed against our long-term strategy, supported the evolving needs of our customers and passengers, and again delivered strong financial performance, which helped us execute on our capital allocation strategy.

What's more, we demonstrated the power of connections – both human and technological – to unite people and communities, bring about positive social change, and ensure that Otis is the company we all want it to be. We remain at the forefront of what today is an \$80 billion industry¹ while striving to be a force for good in the world and a place where every voice feels safe, welcomed and heard.

Connecting with customers to drive results

As urbanization continues, the demand for our products and services has never been greater – a fact reflected in our results this year.

We delivered adjusted operating earnings growth for the third year in a row, continued to grow New Equipment share, and expanded both New Equipment and Service margins – all while navigating the pandemic and related macroeconomic pressures.

New Equipment organic sales grew by 15.5%,² with strong results across all regions. We were especially pleased by the continuing strength of our Service business, which drives our strategy and accounts for approximately 80% of our operating profit. Organic sales rose by 4.1%,² and we saw our Service portfolio grow by 3% to more than 2.1 million units.

Robust free cash flow generation of approximately \$1.6 billion² enabled us to pay more than \$390 million in dividends to our shareholders and complete \$725 million in share repurchases. We also moved to acquire the remaining interest in Zardoya Otis –

a premier elevator business in Spain, Portugal and Morocco with a strong service presence.

In 2021 we connected more than 100,000 units and now have about one-third of our global portfolio connected. We are on track to accelerate portfolio connectivity to approximately 60% over the medium term. Customers whose units are equipped with our Otis ONE™ digital service platform are benefiting through increased visibility into the performance of their equipment and an improved level of service.

“We believe in the power of connectivity – and every day, we bring it to life.”

Customers across the residential, commercial and infrastructure segments turned to us for help in bringing their vision to life, relying on our new equipment, modernization and service solutions. To support China's continued drive toward intelligent urbanization, for example, we are supplying nearly 1,700 elevators and escalators for the Xiong'an New Area, a monumental undertaking to build what is envisioned as a hub for high-tech industries and the seat of some administrative functions to be migrated from Beijing.

¹ Based on internal estimates.

² See page 4 for additional information regarding Non-GAAP measures.

Our proven expertise has also helped to build and maintain customer loyalty and trust – incalculable assets. In South Korea we are providing elevators, escalators and moving walkways for the latest expansion of Incheon International Airport, extending a relationship that began 20 years ago when the airport opened. We were also entrusted with the modernization project at One Commerce Square in downtown Philadelphia, where we installed the original elevators in the 1980s and have been maintaining them ever since.

During the height of the pandemic, we provided the reassurance our customers needed by commissioning an independent airflow study, conducted by a leading expert in the field, which determined that a short elevator ride poses a relatively low risk of exposure to COVID-19 when mitigation measures like the proper use of masks are adopted.

Creating the connected urban journey

Otis innovations gave rise to the modern city. Now we are designing the cities of the future – focused on giving people freedom to connect and thrive in a taller, faster, smarter world. We did much to deliver on that promise this year.

We launched our first connected elevators – the Gen3 and Gen360 elevator platforms – that reimagine what elevators can be for customers and passengers alike.

Powered by our Otis ONE technology, both elevators are designed to be “future ready,” able to evolve as buildings and technologies become more sophisticated over time. Our connected elevators can be integrated with building management software, tenant apps, autonomous robots, and other tools and services to improve building performance and enhance the customer experience.

The Gen360 platform, currently available in Europe, has been selected for three prestigious projects in France: the new Aquatics Centre and Athletes’ Village near Paris; and the new campus of the Emlyon Business School in Lyon.

We also are stepping up our e-commerce capabilities, which extends our sales reach, with digital marketing and online ordering. In India customers are now able to book an order for our Gen2® Prime elevator entirely online, making us the first major original equipment manufacturer in the industry to offer this capability. In addition, through our flagship store on TMall, an e-commerce site in China, we offer elevators for private residences and elevators that can be installed in buildings originally equipped only with stairs – as well as repair parts and OEM aftermarket parts.

Connecting our business with our values

Across the globe, Otis moves 2 billion people a day – individuals who trust us to get them to their destination safely, every time. It is this responsibility that unites our 70,000 colleagues with a sense of common purpose, one that inspires both our drive for business success and our commitment to making life better everywhere we do business. It is why we aim to minimize our environmental footprint; nurture a workplace culture of diversity, equity and inclusion; invest in our local communities; encourage employee volunteerism; and uphold the highest standards of safety, ethics and quality.

The principles behind ESG (Environmental, Social and Governance) have long been embedded in our business strategy and culture. In 2021 we became a signatory of the United Nations Global Compact and set public commitments that align with the U.N.’s Sustainable Development Goals and four key areas of our business: Health & Safety, Environment & Impact, People & Communities, and Governance & Accountability. I encourage you to review our first-ever [ESG report](#) to learn more about our progress.

Connecting today with tomorrow

At Otis, our work is about more than linking point A to point B or floor 1 to floor 100. It is about bringing the world together.

We believe in the power of connectivity – and every day, we bring it to life: From building more

integrated technology to creating cohesive solution ecosystems. From collaborating with colleagues and partners across continents to working with neighbors in our communities. From facilitating personal connections to unifying every step in the urban journey.

We created this industry with a bold idea and pushed the boundaries time and again through our passion, expertise and constant innovation. Thank you for your continuing support as we build on this legacy toward what I am confident will be an even brighter future.



Judy Marks

Chair, Chief Executive Officer and President

Board of Directors

Jeffrey H. Black

Former Senior Partner
and Vice Chairman, Deloitte LLP

Kathy Hopinkah Hannan

Former Global Lead Partner, National
Managing Partner and Vice Chairman,
KPMG, LLP

Shailesh G. Jejurikar

Chief Operating Officer,
The Procter & Gamble Company

Christopher J. Kearney

Former Executive Chair,
Otis Worldwide Corporation
Former Chairman, SPX FLOW, Inc.

Judith F. Marks

Chair, Chief Executive Officer
and President,
Otis Worldwide Corporation

Harold W. McGraw III

Former Chairman, President
& CEO, McGraw-Hill Companies

Margaret M. V. Preston

Former Managing Director,
U.S. Wealth Management,
TD Bank

Shelley Stewart, Jr.

Former Chief Procurement Officer,
E. I. du Pont de Nemours and Company

John H. Walker

Former Chairman and CEO,
Global Brass and Copper Holdings, Inc.

Senior Leadership

Judy Marks

Chair, Chief Executive Officer
and President

Bernardo Calleja

President, Otis EMEA

Jim Cramer

President, Otis Americas

Stéphane de Montlivault

President, Otis Asia Pacific

Robin Fiala

Vice President, Sales & Marketing

Rahul Ghai

Executive Vice President
& Chief Financial Officer

Todd Glance

Executive Vice President, Operations

Neil Green

Executive Vice President
& Chief Digital Officer

Bryant Henson

Executive Vice President, Global
Strategy & Business Development

Rajesh Krishnamurthy

Vice President, Product Management

Nora LaFreniere

Executive Vice President
& General Counsel

Rina Leonard

Vice President & Global
Chief Information Officer

Abbe Luersman

Executive Vice President
& Chief People Officer

Ricardo Muñoz

Senior Vice President, Engineering

Michael Ryan

Vice President &
Chief Accounting Officer

Randi Tanguay

Vice President & Chief
Communications Officer

Perry Zheng

President, Otis China & Chief
Customer Product Officer

Components of Changes in Net Sales

Year Ended December 31, 2021, Compared with Year Ended December 31, 2020

	Factors Contributing to Total % Change in Net Sales			
	Organic	FX Translation	Acquisitions / Divestitures, net	Total
New Equipment	15.5%	4.1%	0.1%	19.7%
Service	4.1%	2.3%	0.2%	6.6%
Maintenance and Repair	4.5%	2.2%	0.3%	7.0%
Modernization	2.5%	1.9%	0.1%	4.5%
Total Net Sales	8.9%	3.0%	0.2%	12.1%

Free Cash Flow Reconciliation

	Year Ended December 31,	
(dollars in millions)	2021	2020
Net income attributable to common shareholders	\$ 1,246	\$ 906
Net cash flows provided by operating activities	\$ 1,750	\$ 1,480
Net cash flows provided by operating activities as a percentage of net income attributable to common shareholders	140%	163%
Capital expenditures	(156)	(183)
Capital expenditures as a percentage of net income attributable to common shareholders	(12)%	(20)%
Free cash flow	\$ 1,594	\$ 1,297
Free cash flow as a percentage of net income attributable to common shareholders	128%	143%

Use and Definitions of Non-GAAP Financial Measures

Otis Worldwide Corporation ("Otis") reports its financial results in accordance with accounting principles generally accepted in the United States ("GAAP"). We supplement the reporting of our financial information determined under GAAP with certain non-GAAP financial information. The non-GAAP information presented provides investors with additional useful information, but should not be considered in isolation or as substitutes for the related GAAP measures. Moreover, other companies may define non-GAAP measures differently, which limits the usefulness of these measures for comparisons with such other companies. We encourage investors to review our financial statements and publicly filed reports in their entirety and not to rely on any single financial measure. A reconciliation of the non-GAAP measures to the corresponding amounts prepared in accordance with GAAP appears in the above tables. These tables provide additional information as to the items and amounts that have been excluded from the adjusted measures.

Organic sales and free cash flow are non-GAAP financial measures.

Organic sales represents consolidated net sales (a GAAP measure), excluding the impact of foreign currency translation, acquisitions and divestitures completed in the preceding 12 months and other significant items of a non-recurring and/or nonoperational nature. Management believes organic sales is a useful measure in providing period-to-period comparisons of the results of the company's ongoing operational performance.

Free cash flow is a non-GAAP financial measure that represents cash flow from operations (a GAAP measure) less capital expenditures. Management believes free cash flow is a useful measure of liquidity and an additional basis for assessing Otis' ability to fund its activities, including the financing of acquisitions, debt service, repurchases of common stock and distribution of earnings to shareholders.

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON D.C. 20549**

FORM 10-K

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES
EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2021

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES
EXCHANGE ACT OF 1934**

For the transition period from _____ to _____.

Commission file number 001-39221

OTIS

OTIS WORLDWIDE CORPORATION

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation)

83-3789412

(I.R.S. Employer Identification No.)

One Carrier Place, Farmington, Connecticut 06032

(Address of principal executive offices, including zip code)

(860) 674-3000

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

<u>Title of each class</u>	<u>Trading Symbol(s)</u>	<u>Name of each exchange on which registered</u>
Common Stock (\$0.01 par value)	OTIS	New York Stock Exchange
0.000% Notes due 2023	OTIS/23	New York Stock Exchange
0.318% Notes due 2026	OTIS/26	New York Stock Exchange
0.934% Notes due 2031	OTIS/31	New York Stock Exchange

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒. No ☐.

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐. No ☒.

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒. No ☐.

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒. No ☐.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer	<input checked="" type="checkbox"/> Accelerated Filer	<input type="checkbox"/>
Non-accelerated Filer	<input type="checkbox"/> Smaller Reporting Company	<input type="checkbox"/>
	Emerging Growth Company	<input type="checkbox"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the Registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐. No ☐.

The aggregate market value of the voting Common Stock held by non-affiliates at June 30, 2021 was approximately \$34,888,309,556 based on the New York Stock Exchange closing price for such shares on that date. For purposes of this calculation, the Registrant has assumed that its directors and executive officers are affiliates.

At January 21, 2022, there were 424,962,356 shares of Common Stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Part III hereof incorporates by reference portions of the Otis Worldwide Corporation Proxy Statement for the 2022 Annual Meeting of Shareholders (the "2022 Proxy Statement"). The 2022 Proxy Statement will be filed with the U.S. Securities and Exchange Commission within 120 days after the end of the fiscal year to which this report relates.

OTIS WORLDWIDE CORPORATION
Form 10-K
For the Year Ended December 31, 2021
TABLE OF CONTENTS

	<u>Page</u>
PART I	
<u>Item 1. Business</u>	4
<u>Cautionary Note Concerning Factors That May Affect Future Results</u>	12
<u>Item 1A. Risk Factors</u>	13
<u>Item 1B. Unresolved Staff Comments</u>	25
<u>Item 2. Properties</u>	25
<u>Item 3. Legal Proceedings</u>	25
<u>Item 4. Mine Safety Disclosures</u>	25
PART II	
<u>Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer of Purchases of Equity Securities</u>	26
<u>Item 6. [Reserved]</u>	28
<u>Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations</u>	28
<u>Item 7A. Quantitative and Qualitative Disclosures About Market Risk</u>	50
<u>Item 8. Financial Statements and Supplementary Data</u>	52
<u>Item 9. Changes in and Disagreements with Accountants and Financial Disclosure</u>	102
<u>Item 9A. Controls and Procedures</u>	102
<u>Item 9B. Other Information</u>	102
<u>Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections</u>	102
PART III	
<u>Item 10. Directors, Executive Officers and Corporate Governance</u>	102
<u>Item 11. Executive Compensation</u>	104
<u>Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u>	104
<u>Item 13. Certain Relationships and Related Transactions, and Director Independence</u>	104
<u>Item 14. Principal Accounting Fees and Services</u>	105
PART IV	
<u>Item 15. Exhibits and Financial Statement Schedule</u>	106
<u>Item 16. Form 10-K Summary</u>	110
<u>SIGNATURES</u>	111

Otis Worldwide Corporation's and its subsidiaries' names, abbreviations thereof, logos, and product and service designators are all either the registered or unregistered trademarks or tradenames of Otis Worldwide Corporation and its subsidiaries. Names, abbreviations of names, logos, and product and service designators of other companies are either the registered or unregistered trademarks or tradenames of their respective owners. As used herein, the terms "we", "us", "our", "the Company" or "Otis", unless the context otherwise requires, mean Otis Worldwide Corporation and its subsidiaries. References to Internet websites in this Form 10-K are provided for convenience only. Information available through these websites is not incorporated by reference into this Form 10-K.

PART I

Item 1. Business

Our Company

Otis is the world's leading elevator and escalator manufacturing, installation and service company. We serve customers in over 200 countries and territories around the world. Otis has global scale and local focus, with over 1,400 branches and offices, and a direct physical presence in approximately 80 countries.

Separation from United Technologies Corporation

Otis is a Delaware corporation and was incorporated on March 1, 2019 in connection with the separation and distribution ("Separation") of each of Otis and Carrier Global Corporation ("Carrier") from United Technologies Corporation, subsequently renamed Raytheon Technologies Corporation ("UTC" or "RTX", as applicable) into separate independent publicly-traded companies. The Separation occurred on April 3, 2020. References to "UTC" relate to pre-Separation matters, and references to "RTX" relate to post-Separation matters.

The Separation was completed pursuant to a Separation and Distribution Agreement ("Separation Agreement") and other agreements with UTC and Carrier related to the Separation, including but not limited to a transition services agreement ("TSA"), a tax matters agreement ("TMA"), an employee matter agreement ("EMA") and an intellectual property agreement (the "Intellectual Property Agreement"). For further discussion of these agreements, see Item 1A, "Note 1: Business Overview" in Item 8 and Item 15 in this Form 10-K.

The following description of our business should be read in conjunction with Item 7 in this Form 10-K, including the information contained therein under the heading "Business Overview."

Description of Business by Segment

Our Company is organized into two segments, New Equipment and Service, which, for the year ended December 31, 2021, contributed 45% and 55% of our net sales, and 21% and 79% of our segment operating profit, respectively. Our international operations represented approximately 74% of our net sales for the year ended December 31, 2021.

New Equipment

Through our New Equipment segment, we design, manufacture, sell and install a wide range of passenger and freight elevators, as well as escalators and moving walkways for residential, commercial and infrastructure projects. In 2021, our New Equipment segment had sales of \$6.4 billion and operating profit of \$459 million. In 2021, our New Equipment sales in China and the Americas each represented approximately one-third of our new equipment net sales, respectively, while China represented over half of our global New Equipment unit volume.

We have developed a range of elevator and escalator solutions to meet the varying needs and objectives of our diverse customers. Our primary elevator and escalator solutions are described below.

The Gen2 family of elevators has been our principal low-and mid-rise elevator solution. Since its launch in 2000, Otis has sold over one million Gen2 units, making it our best selling elevator platform. In 2021, we introduced the successors to the Gen2 family of elevators: the Gen3 and Gen360 digital elevator platforms. These platforms enhance the space-saving, energy-efficient design of the Gen2 elevator with the connectivity of the Otis ONE IoT (internet of things) digital service platform, while adding additional safety features for the passengers and our colleagues who maintain the elevator. Otis ONE is designed

to continuously monitor equipment health and performance in real time to provide proactive, predictive and transparent information to our technicians and customers. The technology expands predictive and remote maintenance capabilities to support improved elevator up-time and service productivity.

The Gen360 elevator also features a new native electronic architecture, with many mechanical components replaced by electronic components that in connection with our service increase reliability, reduce the potential for entrapments and free hoistway space to accommodate larger cabins. The new Otis One IoT solution turns the elevator into a network of sensors for real-time status updates. A foldable, in-ceiling platform allows maintenance operations to be performed safely from within the car rather than on top of it and, depending on local regulations, eliminates the need for a refuge space above the car and the protrusion on the roof for a flat roof design. With 360-degree cameras in the hoistway, Otis service teams can visually confirm, fine-tune, diagnose and solve many issues remotely without stopping the elevator.

For taller, high-rise buildings, our most prominent product is the SkyRise elevator solution. The SkyRise advanced high-rise elevator platform combines cutting-edge technologies and precision engineering to deliver solutions for residential, commercial and mixed use skyscrapers.

Otis offers a range of technologies for improving the passenger experience as well as the safety and efficiency of the building itself. Our proprietary Compass 360 destination management system groups passengers by their desired destination and directs them to an assigned car that minimizes waiting and ride time. The system's algorithms anticipate traffic demand within a building and improves traffic flow. Otis eView in-car display streams live, customizable infotainment to passengers and connects them to OTISLINE during an emergency. The Otis eCall Plus smartphone app enables passengers to summon their elevator remotely for a touchless experience. We have also rolled out new voice and gesturing technologies for summoning elevators to customers in China and North America, with other geographies to follow. And the new Otis Cab Air Purifier significantly reduces airborne bacteria and viruses, another innovation designed to address customer needs and passenger preferences as the result of the COVID-19 pandemic.

In addition to elevator solutions, we also offer escalators and moving walkways. With a range of finishes and aesthetics, Otis escalators integrate easily with building designs. Our smart design and features enhance sustainability and passenger safety, such as sensor-equipped escalators and moving walkways that efficiently run only when passengers approach, or operate at reduced speeds to conserve energy when there are no riders.

Our New Equipment customers include real-estate and building developers and general contractors who develop and/or design buildings for residential, commercial, retail or mixed-use activity. We also sell New Equipment to government agencies, particularly, to support infrastructure projects, such as airports, railways or metros. We generally sell directly to our customers through our New Equipment sales personnel. Due to the large and widespread nature of the customer base in China and certain other geographies, our direct sales force is augmented by agents and distributors. We also rely on agents and distributors to sell our new equipment in certain other countries and territories. Given the breadth of our customer base and the large number of customers to whom we deliver new equipment on an annual basis, we are not dependent on any single customer and do not have any contracts material to Otis as a whole with any single customer. Our network of agents and distributors is broad and geographically dispersed, and we do not rely on or have any contracts material to Otis as a whole with any single agent or distributor.

New Equipment customers typically engage with us at an early stage during the construction cycle. The timing of order placement depends on factors including project complexity and customer requirements. Elevator installation usually occurs midway through building construction.

Most New Equipment orders are delivered within 12 months of booking, though larger projects can take longer to deliver based on customer construction schedules. When placing New Equipment orders, customers typically make an advance payment to cover costs including design and contract engineering. These advance payments are typically followed by periodic progress payments at specified milestones, such as delivery of materials at the job site and completion of installation and equipment commissioning. Installation is carried out by our installation technicians or through subcontractors, in which case we typically complete the final inspection and commissioning to ensure that our quality standards are met. Revenues are recognized based on percentage of completion. Once commissioned, New Equipment units are typically supported by a warranty for a limited period of time.

Service

Through our Service segment, we perform maintenance and repair services, as well as modernization services to upgrade elevators and escalators. We have a maintenance portfolio of over 2.1 million units globally, which includes Otis equipment manufactured and sold by us, as well as equipment from other original equipment manufacturers. Through our network of service sales personnel, we sell our services directly to customers in all significant elevator and escalator end-segments around the world. In 2021, our Service segment had net sales of \$7.9 billion and operating profit of \$1.8 billion.

Service customers typically comprise building owners, facility managers, housing associations and government agencies that operate buildings where elevators and escalators are installed. Customers securing services for elevators are frequently different from those who initially make purchasing decisions with respect to New Equipment solutions. With over 2.1 million maintenance units under contract globally, we have a wide range of customers in our Service segment and do not have any single service contract material to Otis as a whole. Contract duration depends on a number of factors, including customer needs, regulatory requirements and industry/geography dynamics. We work closely with our customers to renew these contracts as appropriate. Certain types of customers, such as those owning or operating large properties or portfolios of properties, tend to execute long-term maintenance agreements.

We grow our maintenance portfolio through conversion of newly installed units into maintenance contracts, through prospecting and winning units already in service from customers using another service provider and through acquisitions. Our Service sales personnel seek to win service contracts upon the expiration or termination of existing service contracts from customers by offering a superior value proposition through service excellence, an engaged and technically sophisticated group of field service technicians, a streamlined customer experience and strong elevator and escalator operating performance.

Our services include inspections, preventive maintenance offerings and other customized maintenance offerings tailored to meet customer needs. A basic maintenance contract provides for inspection consistent with local regulatory needs. We also provide customers with repair services to address equipment and component wear and tear, as well as breakdowns. We offer incremental, tiered maintenance and service offerings, with varying levels of coverage up to and including comprehensive component replacement coverage.

Similar to most other electro-mechanical equipment, elevators and escalators are subject to wear and tear, which over time erodes equipment functionality. As elevator equipment ages, we work with customers to help renew or refresh their elevators with modernization solutions that enhance equipment operation and improve building functionality. Modernization offerings can range from relatively simple upgrades of interior finishes and aesthetics to complex upgrades of larger components and sub-systems.

We provide our Service offerings to our customers through a global network of approximately 34,000 Service mechanics operating out of over 1,400 branches and offices typically located in close proximity to concentrations of customers. Our mechanics are critical to our ability to deliver a high level of service to our customers. Our OTISLINE operations provide personalized customer support 24/7. They receive customer service requests and assign and dispatch field technicians, as necessary, to respond to service requests. Our network of service parts centers, repair centers, and obsolescence management capabilities are key enablers to supporting customers by keeping their elevators and escalators in good working condition.

Digital Technology initiatives

Otis has been using technology to monitor elevator performance remotely for decades, culminating in our latest Otis ONE technology discussed under "New Equipment" above. We also offer multimedia subscription options with additional voice, data and video digital services to customers leveraging our IoT technologies. By the end of 2021, approximately 35% of our global portfolio is connected. In 2022, we expect to continue to innovate and expand our digital ecosystem and suite of digital solutions for both our existing service portfolio customers and for new equipment shipments from our factories.

Research and Development & Intellectual Property

Innovation is a fundamental characteristic of our history and is central to our strategy. For the year ended December 31, 2021, research and development ("R&D") expense was \$159 million and 1.1% as a percentage of net sales. In addition to research and development expense, we made investments in digital and strategic initiatives of approximately \$59 million, which in combination with research and development expense was 1.5% as a percentage of net sales. We coordinate our R&D efforts globally through an operating model that sets global and local priorities based on customer and segment needs. We have 11 R&D centers and 18 factories around the world, including major locations in China, India, France, Spain and the United States. The R&D centers are strategically located close to concentrations of customers and factories to enable efficient development of engineering solutions that can serve as global model products and adapt quickly and efficiently to local customer needs and local demographic and construction trends. We have approximately 1,300 engineers globally, with increasing focus on digital initiatives, software, design of the user interface and the user experience.

We maintain a portfolio of patents, trademarks, copyrights, trade secrets, licenses and franchises related to the Otis business to protect our R&D investments in products and services. We currently own approximately 3,700 globally issued patents, and we have approximately 2,700 patent applications pending globally, of which approximately 2,600 applications were filed in the last three years. Our patents are primarily filed in Europe, the United States and Asia. We believe that our patents and trade secrets create a competitive advantage and that we have taken reasonable measures to build a portfolio of valid and enforceable intellectual property rights. However, these intellectual property rights might be challenged and could be found invalid or unenforceable. Loss of strategic patents and trade secrets could significantly affect our competitiveness. See Item 1A in this Form 10-K for further discussion of intellectual property matters.

Joint Ventures and Non-Wholly Owned Subsidiaries

Our international strategic relationships, joint ventures and non-wholly owned subsidiaries are an important part of our business as they support our access to international markets and customers. Results of these entities are consolidated with our financial and operational results. In addition to China and Spain, as discussed below, we also operate through joint ventures and non-wholly owned subsidiaries in other countries, including Italy, Russia, Malaysia, and certain countries in the Middle East.

China

We operate in China through two principal joint ventures: Otis Elevator (China) Investment Company Limited ("Otis China") and Otis Electric Elevator Company Limited ("Otis Electric"). Otis China is a joint venture established in 1998 for the purpose of manufacturing, installing and servicing elevators, escalators and related equipment. We are a majority owner of Otis China, and Tianjin Tai Kang Investment Co. Ltd. ("Tianjin Tai Kang") is our joint venture partner. Otis Electric, a subsidiary of Otis China, is a joint venture established in 1997 for the purpose of manufacturing, installing and servicing elevators, escalators and related equipment. Otis China owns a controlling equity stake in Otis Electric. Otis China's partner in Otis Electric is Xizi Elevator Group Co.

Zardoya Otis

We conduct our operations based in Spain through Zardoya Otis S.A. ("Zardoya Otis"), which manufactures, installs and services elevators and elevator equipment in Spain, and exports elevator equipment it manufactures for installation by certain of our subsidiaries outside of Spain. Zardoya Otis' shares are listed on Spanish stock exchanges, and the company is subject to the supervision of the Spanish Securities Exchange Commission (Comisión Nacional del Mercado de Valores (the "CNMV")). We own a majority equity stake in Zardoya Otis, with Euro Syns S.A. owning a minority position and the remaining shares being held by public shareholders.

In September 2021, the Company announced a tender offer to acquire all of the issued and outstanding shares of Zardoya Otis not owned by Otis. See Item 1A and "Note 1: Business Overview" in Item 8 in this Form 10-K for further details regarding this pending transaction, including risks associated therewith.

Competition

We operate in a global and highly competitive industry. Due to the global and localized nature of the industry, there are numerous participants of varying size that operate in our industry. According to industry estimates, there are hundreds of participants that offer New Equipment solutions and several thousand participants that offer maintenance and service solutions. In both the New Equipment and Service segments, major competitors globally include KONE Oyj, Schindler Group and TK Elevator, while there are a number of additional competitors in the Asia Pacific region. Competitive dynamics vary significantly by segment and geography. In the Service segment, independent service providers and other small operators are significant competitors in most of our local geographies. These independent service providers have an aggregate portfolio of about 50% of service units, but account for a smaller percentage of the service business when measured by value because of the types of units and level of maintenance covered by these providers.

There are several factors that determine competitiveness in the industry, including local codes and compliance requirements, customer preferences, price, reputation, delivery and execution, product quality, equipment performance, reliability and long-term service and product support. Our success in both our New Equipment and Service segments depends upon our ability to develop and market our products, services and solutions, as well as our ability to provide the people, technologies, facilities, equipment and financial capacity needed to deliver those products and services with maximum efficiency. We believe our global presence, local relationships and proven track record in executing complex elevator and escalator solutions contribute to our iconic brand, reputation and competitive position in the industry. We believe our business strategies sustain New Equipment growth, accelerate Service portfolio growth, advance the digitalization of Otis, focus and empower the organization, support our ability to successfully compete across the New Equipment and Service segments, and will help deliver sustainable earnings growth.

Compliance with Government Regulations

We conduct our business through subsidiaries and affiliates worldwide. Any changes in legislation or government policies impacting our industry, including with respect to employee safety, labor-related regulations, industrial equipment, licensing requirements, foreign ownership limitations and building and elevator safety codes, can affect our operations. We closely monitor local legislation and government policies in the locations in which we operate.

In addition, our operations are subject to and affected by environmental regulations promulgated by federal, state and local authorities in the United States and regulatory authorities with jurisdiction over our foreign operations. We have incurred and will likely continue to incur liabilities under various government statutes and regulations for the cleanup of pollutants previously released into the environment. We do not anticipate that compliance with current provisions relating to the protection of the environment or that any payments we may be required to make for cleanup liabilities will have a material adverse effect upon our competitive position, cash flows, results of operations or financial condition.

U.S. laws, regulations, orders, and other measures concerning the export or re-export of products, software, services and technology to, and other trade-related activities involving, non-U.S. countries and parties affect the operations of Otis and its affiliates, as do those of other countries pertaining to similar matters.

For further discussion of risks related to environmental matters and other government regulations, see in this Form 10-K Item 1A, Item 7 and "Note 2: Summary of Significant Accounting Policies" and "Note 22: Contingent Liabilities" in Item 8 in this Form 10-K.

Seasonality

Our business and operating results are generally not subject to significant fluctuations as a result of seasonality, although we have experienced lower New Equipment sales in Asia in the first calendar quarter, coinciding with Lunar New Year celebrations. In addition, we have also experienced lower New Equipment sales in the fourth quarter in China, due to a national holiday that occurs during the first week of October which may impact the relative mix of sales within the quarter.

Raw Materials and Supplies

Due to the global and distributed nature of our operations, we partner with a diverse network of several thousand suppliers globally. These include product and non-product suppliers, as well as subcontractors. We rely on approximately 500 key suppliers for our manufacturing supply chain.

Components and systems necessary to effectively complete our New Equipment projects, as well as to satisfy our maintenance and repair obligations, are often available from two or more sources within the industry. While we believe no single supplier is material to our business, some components or applications require particular specifications or qualifications. In those cases, there may be a single supplier or a limited number of suppliers that can readily provide such components, which have in the past, and could in the future, result in supply constraints or cost pressures due to an issue with such a supplier, including financial or operational difficulties or a contract dispute. Additionally, the slowdown of economic activity due to COVID-19 and subsequent ongoing recovery in certain regions, as well as the impact of COVID-19 more broadly on employment and the economy, have created long lead times and product shortages for certain components and supplier. We implemented mitigation actions to address potential disruption in and other risks relating to our supply chain, including the use of safety stock and alternative materials, as well as risk assessments, qualification of multiple supply sources and use of long term supplier agreements.

Although at times high prices for some raw materials important to our business have caused margin and cost pressures for our business, including in connection with the impact of COVID-19-and the ongoing recovery, we do not expect near-term unavailability or pricing of materials, components or supplies that would have a material adverse effect on our business. We seek to manage commodity price risk through locking and hedging strategies, as well as passing the increases onto our customers through pricing. See Item 1A in this Form 10-K for risks associated with raw material and supply chain, as well as COVID-19.

Environmental, Social and Governance ("ESG")

Otis is committed to working for the global good of our passengers, customers, colleagues and society. In order to align our ESG initiatives with our broader strategy, we completed a materiality assessment in 2020 to determine our most critical ESG areas for management, goal-setting and reporting. This allows us to focus on the topics most important to our business. We also became a signatory to the U.N. Global Compact in March 2021. Our ESG goals and alignment to U.N. Sustainable Development Goals are categorized into four areas: Health & Safety, Environmental & Impact, People & Communities and Governance & Accountability.

We have published our ESG goals, which can be found in the Investor section of our corporate website. Additionally, we expect to publish an ESG report on our ESG activities, metrics and progress towards our goals starting in 2022. In 2022, our progress towards reducing Scope 1 and Scope 2 greenhouse gases will be a factor in determining payouts under our executive short-term incentive plan. Our ESG goals and ESG report are not incorporated by reference into this Form 10-K and will be available in the Investors section of our website (<http://www.otis.com>) under the heading "ESG". Also, see "Human Capital" below for additional information regarding certain ESG initiatives related to our colleagues, including health & safety, employee engagement and diversity, equity and inclusion.

There have been no, and we do not expect there to be in the near term, material impacts on our business, financial condition or results of operations as a result of compliance with legislation or regulatory rules regarding climate change, from the known physical effects of climate change or as a result of implementing our ESG initiatives. Increased regulation and other climate change concerns, however, could subject us to additional costs and restrictions, and we are not able to predict how such regulations or concerns would affect our business, operations or financial results.

Human Capital

As of December 31, 2021, our global workforce consists of approximately 70,000 colleagues, with 42% in Asia, 35% in Europe, the Middle East and Africa ("EMEA") and 22% in the Americas.

Approximately 63% of our workforce in the U.S. is covered by collective bargaining agreements. Outside of the U.S., our colleagues are represented by workers' councils or statutory labor unions as may be customary or required in those jurisdictions. While we strive to maintain good relationships with our employee representative bodies, our business may be adversely affected by work stoppages, union negotiations, labor disputes and other matters associated with our labor force. The collective bargaining agreement for most of our bargaining unit colleagues in the U.S. was renewed without disruption in July 2017 and is

set to expire in July 2022. Although some previous contract renegotiations have had a significant impact on our financial condition or results of operations, we do not anticipate that the renegotiation of this contract will have a material adverse effect on our competitive position, cash flows, financial condition or results of operations. For a discussion of employment-related matters, see Item 1A in this Form 10-K.

Compensation

Our colleagues are vital to our success, and we offer pay and benefits designed to attract, retain and motivate our colleagues and align their compensation with both individual and our overall performance. While our programs vary by location and based on the roles of our colleagues, they include competitive base pay, short-term incentive bonuses, long-term incentive pay in the form of stock awards, retirement plans, health care and insurance benefits, paid time off, tuition assistance through our Employee Scholar program, family leave, dependent care and employee assistance programs.

Safety and Health

Safety is one of the Otis Absolutes. For that reason, safety measures and indicators are regularly monitored by management and reported to our Board of Directors. To promote safety, we have a health and safety management system and regularly measure the effectiveness of our health and safety programs. We empower all of our colleagues and subcontractors with stop work authority if they perceive an unsafe condition or a behavior that may cause injury. We also seek to promote a culture where stop work authority can be freely exercised without the fear of retribution or retaliation, and a learning culture to enhance the quality and delivery of safety and technical training.

For our colleagues to be effective, they need to be healthy. Starting in 2020, with the added stress of the COVID-19 pandemic, we increased our efforts to improve our colleagues' mental health by expanding employee assistance plan benefits and by bringing increased attention to the importance of mental health. We believe this is an important initiative to continue and we are striving to provide employee assistance plan benefits to all of our colleagues by the end of 2022. During 2020 and 2021, we covered the cost of COVID-19 testing and treatment for our U.S. based colleagues and their covered family members under our welfare plans. We have, where possible, also offered remote work flexibility for our colleagues.

Training and Development

We strive to emphasize development and training, as we believe that individual and corporate success is driven by lifelong learning and by empowering our colleagues. As a result, we provide a range of development and mentoring opportunities that vary based on a colleague's career stage and function. One of our flagship programs is "Otis University," a global program that builds leadership and functional capabilities in sales, field, engineering, operations, and major projects. We are very proud of our "Employee Scholar Program," which is a comprehensive, company-sponsored education program that allows colleagues to expand their skills through degree or certification programs. Since the program's inception in 1997, Otis, as a business unit of UTC and following the Separation, has supported Otis colleagues in receiving more than 5,500 degrees across 60 countries through an investment of over \$95 million in the Employee Scholar Program.

Ensuring that we have access to trained technicians is very important to our business. Our mechanics receive extensive training to service and install equipment safely. This training, which is provided by Otis and our unions, consists of live, virtual, and on-the-job modules with experienced mechanics. To help us attract talent and provide us with a pipeline of trained mechanics in China, we have partnered with five technology schools in the country to offer the Otis Technology Academy. The students in the technology schools are provided with technical training, certifications, hands-on access to our equipment and an Otis apprenticeship period. We are also increasing the number of women in our mechanic population across the world in order to enhance diversity and to obtain access to a larger talent pool.

Commitment to Change

We aim to be an equal-opportunity employer of choice for people of broad perspectives and experiences, cultures, genders, races, and generations. We want to be a business whose workforce mirrors the diversity of our customers and the communities where we live and work and a place where every voice feels safe, welcomed and heard. To help us achieve these objectives, we:

- Conducted an independent review of our Company to uncover and eliminate biases affecting any colleagues in our hiring, compensation, professional development and other business practices;

- Accelerated anti-racism, unconscious bias and inclusion learning for colleagues at all levels of the organization and throughout their Otis careers;
- Created a diversity, equity & inclusion ("DE&I") advisory group at the enterprise level and regional DE&I councils to ensure transparency and to hold us accountable for achieving measurable progress towards a diverse, inclusive culture;
- Amplified our ongoing commitment to STEM and vocational education, by joining with community and business partners to invest in and build a diverse talent pipeline;
- Made social justice and racial equality an integral part of our community giving, volunteerism and external reporting programs; and
- Promoted and expanded mental health and well-being benefits, policies and practices to support our colleagues.

In addition, we believe that it is important for us to significantly increase the number of women we have in executive roles. In 2020, we joined the Paradigm for Parity coalition, pledging our commitment to establish gender parity across our executive leadership by 2030. In 2022, our progress against attaining gender parity across our executive leadership will be a factor in determining payouts under our executive short-term incentive plan.

Engagement

We believe that engaged colleagues deliver better service to our customers. We measure engagement by conducting colleague surveys two to three times a year. The results, which are reported to our Board of Directors and management, help us assess how our colleagues feel about working for us. We use the survey results to develop action plans to address areas of concern. The engagement surveys, which anonymizes the data, cover topics such as safety, ethics, belonging, quality, company prospects, inclusion, empowerment, accountability and managerial effectiveness.

Available Information

This Form 10-K and our quarterly reports on Form-10-Q, current reports on Form 8-K and any amendments to those reports are available free of charge through the Investors section of our Internet website (<http://www.otis.com>) under the heading "Financial Information" as soon as reasonably practicable after these reports are electronically filed with, or furnished to, the SEC. In addition, the SEC maintains a website (<http://www.sec.gov>) containing reports, proxy and information statements and other information regarding issuers that file electronically with the SEC.

Cautionary Note Concerning Factors That May Affect Future Results

This Form 10-K contains statements which, to the extent they are not statements of historical or present fact, constitute “forward-looking statements” under the securities laws. From time to time, oral or written forward-looking statements may also be included in other information released to the public. These forward-looking statements are intended to provide management’s current expectations or plans for Otis’ future operating and financial performance, based on assumptions currently believed to be valid. Forward-looking statements can be identified by the use of words such as “believe,” “expect,” “expectations,” “plans,” “strategy,” “prospects,” “estimate,” “project,” “target,” “anticipate,” “will,” “should,” “see,” “guidance,” “outlook,” “medium-term,” “near-term,” “confident,” “goals” and other words of similar meaning in connection with a discussion of future operating or financial performance, the Tender Offer and the Separation. Forward-looking statements may include, among other things, statements relating to future sales, earnings, cash flow, results of operations, uses of cash, dividends, share repurchases, tax rates, R&D spend, credit ratings, net indebtedness and other measures of financial performance or potential future plans, strategies or transactions of Otis following the Separation or in connection with the Tender Offer, including the estimated costs associated with the Separation and the Tender Offer, or statements that relate to climate change and our intent to achieve certain ESG targets or goals, including operational impacts and costs associated therewith, and other statements that are not historical facts. All forward-looking statements involve risks, uncertainties and other factors that may cause actual results to differ materially from those expressed or implied in the forward-looking statements. For those statements, Otis claims the protection of the safe harbor for forward-looking statements contained in the U.S. Private Securities Litigation Reform Act of 1995. Such risks, uncertainties and other factors include, without limitation:

- the effect of economic conditions in the industries and markets in which Otis and its businesses operate in the U.S. and globally and any changes therein, including financial market conditions, fluctuations in commodity prices, interest rates and foreign currency exchange rates, levels of end market demand in construction, pandemic health issues (including COVID-19 and variants thereof and the ongoing economic recovery therefrom and their effects on, among other things, global supply, demand and distribution), natural disasters and the financial condition of Otis’ customers and suppliers;
- challenges in the development, production, delivery, support, performance and realization of the anticipated benefits of advanced technologies and new products and services;
- future levels of indebtedness, capital spending and research and development spending;
- future availability of credit and factors that may affect such availability, credit market conditions and Otis’ capital structure;
- the timing and scope of future repurchases of Otis’ common stock (“Common Stock”), which may be suspended at any time due to various factors, including market conditions and the level of other investing activities and uses of cash;
- fluctuations in prices and delays and disruption in delivery of materials and services from suppliers, whether as a result of COVID-19 or otherwise;
- cost reduction or containment actions, restructuring costs and related savings and other consequences thereof;
- new business and investment opportunities;
- the outcome of legal proceedings, investigations and other contingencies;
- pension plan assumptions and future contributions;
- the impact of the negotiation of collective bargaining agreements and labor disputes;
- the effect of changes in political conditions in the U.S. and other countries in which Otis and its businesses operate on general market conditions, global trade policies and currency exchange rates in the near term and beyond;
- the effect of changes in tax, environmental, regulatory (including among other things import/export) and other laws and regulations in the U.S. and other countries in which Otis and its businesses operate;
- the ability of Otis to retain and hire key personnel;
- the scope, nature, impact or timing of acquisition and divestiture activity, including among other things integration of acquired businesses into existing businesses and realization of synergies and opportunities for growth and innovation and incurrence of related costs;
- the timing of closing, if any, of the Tender Offer and the ability to achieve the expected benefits of the Tender Offer and the timing thereof;
- the ability to achieve the expected benefits of the Separation;
- the determination by the Internal Revenue Service and other tax authorities that the distribution or certain related transactions should be treated as taxable transactions; and
- the amount of our obligations and nature of our contractual restrictions pursuant to, and disputes that have or may hereafter arise under the agreements we entered into with RTX and Carrier in connection with the Separation.

These and other factors are more fully discussed in the “Business”, “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” sections and elsewhere in this Form 10-K and may cause actual results to differ materially from those expressed or implied in the forward-looking statements. The forward-looking statements speak only as of the date of this report, or in the case of any document incorporated by reference, the date of that document. We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law. Additional information as to factors that may cause actual results to differ materially from those expressed or implied in the forward-looking statements is disclosed from time to time in our other filings with the SEC.

Item 1A. Risk Factors

Our business, financial condition, operating results and cash flows can be impacted by the factors set forth below, any one of which could cause our actual results to vary materially from recent results or from our anticipated future results.

Risks Related to our Business

We may be affected by global economic, capital market and political conditions in general, and conditions in the construction and infrastructure industries in particular.

Our business, financial condition, operating results and cash flows may be adversely affected by changes in global economic conditions and geopolitical risks, including global credit market conditions, levels of consumer and business confidence, commodity prices, raw material and energy costs, supply chain issues, foreign currency exchange rates, interest rates, labor costs, levels of government spending and deficits, trade policies, tariffs and trade barriers, political conditions, regulatory changes, fluctuations in residential and commercial construction activity, pandemic health issues (see discussion of COVID-19 below), natural disasters, actual or anticipated default on sovereign debt and other challenges that could affect the global economy. These economic and political conditions affect businesses such as ours in a number of ways. In particular, a slowdown in building and remodeling activity or decreased public spending on infrastructure projects could adversely affect our financial performance.

Our business may be further impacted by the COVID-19 pandemic.

COVID-19, including variants of the original virus, has continued to spread throughout the world, resulting in prolonged travel restrictions and shutdowns, occupancy limits or other restrictions of non-essential businesses, including construction and hospitality venues, impacting to various extents our factory operations, new equipment installations and access to units under maintenance. The ultimate impact of the COVID-19 pandemic on our business is uncertain at this time and will depend on future developments, including the availability, efficacy and distribution of various vaccines and treatments for COVID-19, but further prolonged restrictions or the rollback of reopening measures due to higher infection rates may further disrupt our operations and the operations of our suppliers, distributors and customers. COVID-19 has adversely affected and could further affect the ability of our customers to pay for our products and services and to obtain financing for significant purchases and operations, which has resulted in, and could further result in, a decrease and/or cancellation of orders for our products and services and/or payment delays or defaults. Similarly, COVID-19 and the ongoing economic recovery from the virus have adversely affected and may further affect our supply base and increase the potential for one or more of our suppliers to experience production constraints, distribution challenges, financial distress or bankruptcy, which could impact our ability to fulfill orders on time or at anticipated cost. Additionally, governments, including in the U.S., have enacted, or may enact, vaccine mandates. While the U.S. Supreme Court has recently blocked enforcement of one mandate, other mandates remain in effect, and uncertainty remains around whether additional mandates may be adopted in the future. Such mandates could result in labor disruptions, employee attrition, difficulty securing future labor needs and loss of government contracts. Furthermore, it is unclear what longer term effects the virus will have on the global economy, including the commercial building industry. Any of these factors could have a material adverse effect on our business, results of operations, cash flows and financial condition.

Our international operations subject us to risk as our results of operations may be adversely affected by changes in local and regional economic conditions, such as fluctuations in exchange rates, risks associated with government policies on international trade and investments, and risks associated with China and other emerging markets.

We conduct our business on a global basis, with approximately 74% of our 2021 net sales derived from international operations. Changes in local and regional economic conditions, including credit conditions and fluctuations in exchange rates, may affect product demand and reported profits in our non-U.S. operations, where transactions are generally denominated in local currencies. In addition, currency fluctuations may affect the prices we pay for the materials used in our products. Though we engage in hedging strategies to manage foreign currency exposures in connection with certain cross-border transactions, our operating margins may be negatively impacted by currency fluctuations that result in higher costs or lower revenues for certain cross-border transactions. Our financial statements are denominated in U.S. Dollars. Accordingly, fluctuations in exchange rates may also give rise to gains or losses when financial statements of non-U.S. operating units are translated into U.S. Dollars. Given that the majority of our sales are non-U.S. based, a strengthening of the U.S. Dollar against other major foreign currencies could adversely affect our results of operations.

Our international sales and operations are subject to risks associated with changes in local government laws, regulations and policies, including those related to investments and limitations on foreign ownership of businesses, taxation, foreign exchange controls, capital controls, employment regulations and the repatriation of earnings. Government policies on international trade and investments such as import quotas, capital controls, punitive taxes or tariffs or similar trade barriers, whether imposed by individual governments or regional trade blocs, can affect demand for our products and services, impact the competitive position of our products or services, or encumber our ability to manufacture or sell products in certain countries. The implementation of more restrictive trade policies, including the imposition of tariffs, or the renegotiation of existing trade agreements with the U.S. or countries where we sell large quantities of products and services, procure materials incorporated into our products, manufacture products or recruit and employ employees, including trade relations between the U.S. and China (as discussed below), could have a material adverse effect on our business, results of operations and financial condition, including our ability to recruit and retain employees or deploy certain employees to the geographies where their skills are best utilized. Our international sales and operations are also sensitive to changes in foreign nations' priorities, including government budgets, as well as to political and economic instability. International transactions may involve increased financial and legal risks due to differing legal systems and customs in foreign countries.

China is currently the largest end market for sales of new equipment in our industry, with our New Equipment sales in China representing approximately 35% of our global New Equipment net sales and over half of our global New Equipment unit volume. Changes to market and economic conditions in China, including credit conditions for our customers, or an escalation of trade conflicts between the U.S. and China, may impact our ability to continue New Equipment net sales in China at rates consistent with prior years. Furthermore, as is the case in many countries where we operate, the legal and regulatory regime in China is evolving, and accordingly, we could, in the future, be required to comply with significant requirements unique to China in order to maintain access to Chinese markets.

We expect that sales to emerging markets will continue to account for a significant portion of our sales as those and other developing nations and regions around the world increase their demand for our products and services. A slowdown in urbanization in emerging countries, such as China or India, could adversely affect our financial performance. In addition, as part of our global business model, we operate in certain countries, including Argentina, Brazil, China, India, Indonesia, Malaysia, Mexico, Poland, Russia, South Africa, Ukraine, Turkey and certain countries in the Middle East, that carry high levels of currency, political, compliance and economic risk. Our emerging market operations can present many risks, including differences in culturally accepted practices (such as employment and business practices), compliance risks, economic and government instability, currency fluctuations, and the imposition of foreign exchange and capital controls. While these factors and their impact are difficult to predict, any one or more of them could have a material adverse effect on our competitive position, results of operations, cash flows or financial condition.

We use a variety of raw materials, supplier-provided parts, components, sub-systems and third-party manufacturing services in our business, and significant shortages, supplier capacity constraints, supplier production disruptions or price increases could increase our operating costs and adversely impact the competitive positions of our products.

Our reliance on suppliers (including third-party manufacturers) and commodity markets to secure the raw materials and components used in our products exposes us to volatility in the prices and availability of these materials. Issues with suppliers, (such as a disruption in deliveries, capacity constraints, production disruptions, quality issues and supplier closings or bankruptcies, including in connection with the impact of COVID-19 and the ongoing economic recovery), price increases or

decreased availability of raw materials or commodities could have a material adverse effect on our ability to meet our commitments to customers, could damage our reputation or could increase our operating costs, any of which could have a material adverse effect on our competitive position, results of operations, cash flows or financial condition.

Adverse changes in our relationships with, or the financial condition, performance or purchasing patterns of, key distributors and agents could adversely affect us.

Certain of our businesses sell a significant amount of their products to distributors and agents, particularly in China, that have valuable relationships with customers. Some of these distributors and agents also sell our competitors' products, and if they favor competing products for any reason they may fail to market our products effectively. Adverse changes in our relationships with these distributors and other partners, or adverse developments in their financial condition, performance or purchasing patterns, or compliance practices, could adversely affect our reputation, competitive position, results of operations, cash flows or financial condition.

We design, manufacture, install and service products that incorporate advanced technologies; the introduction of new products and technologies involves risks, and we may not realize the degree or timing of benefits initially anticipated.

We seek to grow our business through the design, development, production, sale and support of innovative products that incorporate advanced technologies. The product and service needs of our customers change and evolve regularly, and we invest substantial amounts in research and development efforts to pursue advancements in technologies, products and services. Our ability to realize the anticipated benefits of our technological advancements, such as the development and execution of advanced digital technologies for the benefit of our New Equipment or Service segment or the development of new products depend on a variety of factors, including meeting development, production, certification and regulatory approval schedules; execution of internal and external performance plans; availability of supplier and internally produced parts and materials; performance of suppliers and subcontractors; hiring and training of qualified personnel; achieving cost and production efficiencies; validation of innovative technologies; and customer interest in new technologies and products and acceptance of products we manufacture or that incorporate technologies we develop.

Our research and development efforts may not result in innovative products or services that incorporate new technologies for our New Equipment and Service segments, or products or services being developed on a timely basis or that meet the needs of our customers as effectively as competitive offerings. In addition, the markets for our products or services, or products that incorporate our technologies, may not develop or grow as we anticipate. We or our customers, suppliers or subcontractors may encounter difficulties in developing and producing new products and services, and may not realize the degree or timing of benefits initially anticipated or may otherwise suffer significant adverse financial consequences. Due to the design complexity of our products, we may experience delays in completing the development and introduction of new products. Any delays could result in increased development costs or divert resources from other projects. If we are unable to successfully develop and timely introduce new products, services and technologies, our competitors may develop competing technologies that gain market acceptance in advance of or instead of our products or services. The possibility also exists that our competitors might develop new technology or offerings that might cause our existing technology and offerings to become obsolete, which could have a material adverse effect on our competitive position, results of operations, cash flows or financial condition.

We operate in a competitive environment and our profitability depends on our ability to accurately estimate the costs and timing of providing our products and services.

Our contracts are typically awarded on a competitive basis. Our quotations and bids are based upon, among other items, the cost to provide the products and services. To generate an acceptable return on our investment in these contracts, we must be able to accurately estimate our costs to provide the services and deliver the products required by the contract and to be able to complete the contracts in a timely manner. If we fail to accurately estimate our costs or the time required to complete a new equipment order, or the extent of required maintenance pursuant to a service contract, the profitability of our contracts may be materially and adversely affected. Some of our contracts provide for liquidated damages if we do not perform in accordance with the contract. As a result of these and other factors, we may not be able to provide products and services at competitive prices while maintaining anticipated levels of profitability, which could have a material adverse effect on our competitive position, results of operations, cash flows or financial condition.

Our debt levels and related debt service obligations could have negative consequences; we may need additional debt or equity financing in the future to meet our capital needs, and such financing may not be available on favorable terms, if at all, due to changes in global capital markets, our financial performance or outlook or our credit ratings and may be dilutive to existing shareholders.

As of December 31, 2021, we had \$7.2 billion outstanding long-term debt. Our debt level and related debt service obligations could have negative consequences, including, among others:

- requiring us to dedicate significant cash flow from operations to the payment of principal and interest on our debt, which would reduce funds we have available for other purposes, such as acquisitions and reinvestment in our businesses; and
- reducing our flexibility in planning for or reacting to changes in our business and market conditions.

We may need additional financing for general corporate purposes. For example, we may need funds to increase our investment in research and development activities, to refinance or repay existing debt, or to make a strategic acquisition. We may be unable to obtain additional financing on terms favorable to us, if at all. Volatility in the world financial markets, including as a result of inflation concerns from the ongoing recovery from the COVID-19 pandemic, could increase borrowing costs or affect our ability to access the capital markets. Our ability to issue debt or enter into other financing arrangements on acceptable terms could be adversely affected if there is a material decline in the demand for our products or services, or in the solvency of our customers, suppliers or distributors or other significantly unfavorable changes in economic conditions.

Otis has an investment grade credit rating from each of Moody's Investor Services, Inc. and Standard & Poor's. There can be no assurance that we will be able to maintain our credit ratings, and any actual or anticipated changes or downgrades in our credit ratings, including any announcement that our ratings are under review for a downgrade or similar announcement, could increase the cost of borrowing under any indebtedness we may incur, reduce market capacity for our commercial paper, require the posting of additional collateral under our derivative contracts, or otherwise have a negative impact on our liquidity, capital position and access to the capital markets.

If we raise additional funds through the issuance of equity securities, our shareholders will experience dilution of their ownership interest. If we raise additional funds by issuing debt, we may be subject to limitations on our operations due to restrictive covenants or rating agencies may downgrade our credit rating.

Quarterly cash dividends and share repurchases may be discontinued, accelerated or modified, are subject to a number of uncertainties and may affect the price of Common Stock.

Quarterly cash dividends are a component of our capital allocation strategy, which we fund with operating free cash flow, borrowings and divestitures. We also have authority to repurchase our shares under a share repurchase program, which we have suspended in connection with the Tender Offer. In general, dividends and share repurchases, if commenced, may be discontinued, accelerated, suspended or delayed at any time without prior notice. Furthermore, the amount of such dividends and repurchases may be changed, and the amount, timing and frequency of such dividends and repurchases may vary from historical practice or from the company's stated expectations. Decisions with respect to dividends and share repurchases are subject to the discretion of our Board of Directors and will be based on a variety of factors. Important factors that could cause us to discontinue, limit, suspend, increase or delay our quarterly cash dividends or share repurchases include market conditions, the market price of Common Stock, the nature and timing of other investment and acquisition opportunities, changes in our business strategy, the terms of our financing arrangements, our outlook as to the ability to obtain financing at attractive rates, the impact on our credit ratings and the availability of domestic cash. The reduction or elimination of our cash dividend or share repurchase program could adversely affect the market price of Common Stock. Although our share repurchase program is intended to enhance long-term shareholder value, changes in laws or regulations related thereto or short-term stock price fluctuations could reduce the program's effectiveness.

See Item 5 in this Form 10-K for more information regarding our share repurchase program.

We engage in acquisitions and divestitures, and may encounter difficulties integrating acquired businesses with, or disposing of businesses from, our current operations; therefore, we may not realize the anticipated benefits of these acquisitions and divestitures.

We seek to grow through strategic acquisitions in addition to internal growth. Our due diligence reviews in connection with our acquisitions may not identify all of the material issues necessary to accurately estimate the cost and potential loss contingencies of a particular transaction, including potential exposure to regulatory sanctions resulting from an acquisition target's previous activities. For example, we may incur unanticipated costs, expenses or other liabilities as a result of an acquisition target's violation of applicable laws, such as anti-corruption, antitrust, anti-collusion, environmental or income tax laws. We also may incur unanticipated costs or expenses, including post-closing asset impairment charges, as well as expenses associated with eliminating duplicate facilities, litigation and other liabilities. We may incur unexpected costs associated with labor law, tax or pension matters or to bring acquired assets up to our operating standards. We may encounter difficulties in integrating acquired businesses with our operations, applying our internal controls to these acquired businesses or in managing strategic investments. Additionally, we may not realize the degree or timing of benefits we anticipate when we first enter into a transaction. Any of the foregoing could adversely affect our business and results of operations. In addition, accounting requirements relating to business combinations, including the requirement to expense certain acquisition costs as incurred, may cause us to incur greater earnings volatility and generally lower earnings during periods in which we acquire new businesses.

We also make strategic divestitures from time to time. Our divestitures may result in continued financial exposure to the divested businesses, such as through guarantees, other financial arrangements, continued supply and services arrangements, and environmental and product liability claims, following the transaction. Under these arrangements, nonperformance by those divested businesses could result in obligations being imposed on us that could have a material adverse effect on our competitive position, cash flows, results of operations or financial condition.

For constraints on mergers and acquisition activity after the completion of the distribution, see "Risk Factors—Risks Related to the Separation" below.

The Tender Offer of Zardoya Otis may not be completed at the price per share anticipated or result in the financial benefit in the time frame expected.

The Tender Offer is subject to approval by the CNMV and other uncertainties. Zardoya Otis shareholders may not tender their shares or there may be competing offers. The Company may not be able to complete the Tender Offer at the anticipated price or, if it does complete the Tender Offer, to realize certain cost and other expected benefits. If the Company is unable to complete the Tender Offer on the anticipated terms, time frame, or at all, the anticipated benefits may not be realized fully or at all, or may take longer to realize than expected, and the value of the Company's Common Stock may decline.

We are party to joint ventures and other strategic alliances, which may not be successful and may expose us to special risks and restrictions.

Our business operations depend on various strategic alliances and joint ventures. In certain regions, we operate our business through joint venture relationships or non-wholly owned subsidiaries, including: Otis Electric Elevator Company Limited and Otis Elevator (China) Investment Limited in China; and Zardoya Otis in Spain. (See the Risk Factor above regarding the Tender Offer). A significant downturn or deterioration in the business or financial condition of a joint venture partner could affect our results of operations in a particular period. Our joint ventures may experience labor strikes, diminished liquidity or credit unavailability, weak demand for products, delays in the launch of new products or other difficulties in their businesses. Changes in local government laws, regulations and policies, including those related to investments and limitations on foreign ownership of businesses, could adversely impact our ability to participate in and operate our joint ventures, or could result in changes to the ownership structure or allocation of rights in our joint ventures. If we are not successful in maintaining our joint ventures and other strategic partnerships, our financial condition, results of operations and cash flows may be adversely affected.

Joint ventures, strategic alliances and non-wholly owned subsidiaries inherently involve special risks. Whether or not we hold a majority interest or maintain operational control in such arrangements, our partners or other shareholders may (1) have economic or business interests or goals that are inconsistent with or contrary to ours, (2) exercise veto or other rights, to the extent available, to block actions that we believe to be in our or the joint venture's, strategic alliance's or non-wholly owned subsidiary's best interests, (3) take action contrary to our policies or objectives with respect to our investments or business or (4) be unable or unwilling (including as a result of financial or other difficulties) to fulfill their obligations, such as contributing

capital to expansion or maintenance projects, under the joint venture, strategic alliance or other agreement. There can be no assurance that any particular joint venture or strategic alliance will be beneficial to us.

We are subject to litigation, product safety and other legal and compliance risks.

We are subject to a variety of litigation, legal and compliance risks. These risks relate to, among other things, product safety, personal injuries, intellectual property rights, contract-related claims, taxes, environmental matters, competition laws and laws governing improper business practices. We could be charged with wrongdoing in connection with such matters. If convicted or found liable, we could be subject to significant fines, penalties, repayments and other damages (in certain cases, treble damages).

As a global business, we are subject to complex laws and regulations in the U.S. and other countries in which we operate. Those laws and regulations may be interpreted in different ways. They may also change from time to time, as may related interpretations and other guidance. Changes in laws or regulations could result in higher expenses or changes to business operations that could impact our ability to sell our products and services or sell them at expected profit levels. Uncertainty relating to those laws or regulations may also affect how we operate, structure our investments and enforce our rights.

Product and general liability claims (including claims related to the safety, reliability or maintenance of our products) and accident risks during the production, installation, maintenance and use of our products can result in significant costs, including settlements, punitive damages and other risks such as damage to our reputation, negative publicity and management distraction, which could reduce demand for our products and services.

In addition, we are subject to the U.S. Foreign Corrupt Practices Act ("FCPA") and other anti-corruption laws that generally prohibit companies and their intermediaries from making improper payments to government officials for the purpose of obtaining or retaining business. The FCPA applies to companies, individual directors, officers, employees and agents. Under certain anti-corruption laws, companies also may be held liable for the actions of partners or representatives. Certain of our customer relationships are with governmental entities and are, therefore, subject to the FCPA and other anti-corruption laws. Despite meaningful measures that we undertake to seek to ensure lawful conduct, which include training and internal controls, we may not always be able to prevent our employees, partners, joint ventures, agents or distributors from violating the FCPA or other anti-corruption laws. As a result, we could be subject to criminal and civil penalties, disgorgement, changes or enhancements to our compliance measures that could increase our costs, decrease our access to certain sales channels, personnel changes or other remedial actions. Prior to the Separation, UTC, including Otis, was subject to a formal investigation by the SEC related to alleged violations of anti-corruption laws, which resulted in a Settlement Order in which our former parent UTC paid a civil penalty related to certain activities in our business in Russia, China and Kuwait, as well as activities in another UTC business.

Moreover, we are subject to antitrust and anti-collusion laws, including mandatory supply laws and bidding regulations, in various jurisdictions throughout the world. Changes in these laws or their interpretation, administration and/or enforcement may occur over time, and any such changes may limit our future acquisitions or operations, or result in changes to our strategies, sales and distribution structures or other business practices. We are subject to ongoing claims related to alleged violations of anti-collusion laws in certain European countries, where we are subject to claims for overcharges on elevators and escalators related to civil cartel cases. Though we have implemented policies, controls and other measures to prevent collusion or anti-competitive behavior, our controls may not always be effective in preventing our employees, partners, joint ventures, agents or distributors from violating antitrust or anti-collusion laws.

Violations of FCPA, antitrust or other anti-corruption or anti-collusion laws, or allegations of such violations, could disrupt our operations, cause reputational harm, involve significant management distraction and result in a material adverse effect on our competitive position, results of operations, cash flows or financial condition.

We also must comply with various laws and regulations relating to the export of products, services and technology from the U.S. and other countries having jurisdiction over our operations. In the U.S., these laws include, among others, the Export Administration Regulations administered by the Department of Commerce and embargoes and sanctions regulations administered by the Department of the Treasury. In addition, U.S. foreign policy may restrict or prohibit business dealings with certain individuals, entities or countries; changes in these prohibitions can happen suddenly and could result in a material adverse effect on our operations.

For a description of current material legal proceedings, see "Note 22: Contingent Liabilities" in Item 8 of this Form 10-K.

Our defined benefit pension plans are subject to financial market risk that could adversely affect our results.

The performance of the financial markets and interest rates can impact our defined benefit pension plan expenses and funding obligations. Significant decreases in the discount rate or investment losses on plan assets may increase our funding obligations and adversely impact our financial results. See "Note 13: Employee Benefit Plans" in Item 8 of this Form 10-K for further discussion on pension plans and related obligations and contingencies.

Information security, data privacy and identity protection may require significant resources and present certain risks to our business, reputation and financial condition.

We collect, store, have access to and otherwise process certain confidential or sensitive data that may be subject to data privacy and cybersecurity laws, regulations or customer-imposed controls, including proprietary business information, personal data and other information. We also develop products that may in certain cases collect, store, have access to, and otherwise process certain personally identifiable or confidential data of our customers who purchase and use such products either separately or as a part of another product or system or by way of access to our websites or social media accounts. Although we seek to protect such data and design our products to enable our customers to use them while complying with applicable data privacy and cybersecurity laws and/or customer-imposed controls and have experienced cyber-attacks in the past, both our internal systems and products may be vulnerable to hacking or further cyber-attacks, material security breaches, theft, programming errors or employee errors, which could lead to the compromise of such data, unauthorized access, use, disclosure, modification or destruction of information, improper use of our systems, software solutions or networks, defective products, production downtimes and/or operational disruptions in violation of applicable law and/or contractual obligations. A significant actual or perceived risk of theft, loss, fraudulent use or misuse of customer, employee or other data, whether by us, our suppliers, distributors, customers or other third parties, as a result of employee error or malfeasance, or as a result of the compromise of software, security and other products we incorporate into our products, as well as non-compliance with applicable industry standards or our contractual or other legal obligations or privacy and information security policies regarding such data, could result in costs, fines, litigation or regulatory actions, or could lead customers to select products and services of our competitors. In addition, any such event could harm our reputation, cause unfavorable publicity or otherwise adversely affect certain potential customers' perception of the security and reliability of our services as well as our credibility and reputation, which could result in lost sales. In addition, because of the global nature of our business, both our internal systems and products must comply with the applicable laws, regulations and standards in a number of jurisdictions, which continue to evolve, and in certain cases, include provisions that are unclear. Government enforcement actions, including due to geopolitical concerns, and violations of data privacy and cybersecurity laws could be costly or interrupt our business operations. Any of the foregoing factors could result in reputational damage or civil or governmental proceedings, which could result in a material adverse effect on our competitive position, results of operations, cash flows or financial condition.

Our business and financial performance depend on continued substantial investment in information technology infrastructure, which may not yield anticipated benefits, and may be adversely affected by cyber-attacks on information technology infrastructure and products and other business disruptions.

The efficient operation of our business will require continued substantial investment in technology infrastructure systems, including partial shifting from virtual private networks to cloud-based networks, and we must attract and retain qualified people to operate these systems, expand and improve them, integrate new systems effectively and efficiently convert to new systems when required. An inability to fund, acquire and implement these systems might impact our ability to respond effectively to changing customer expectations, manage our business, scale our solutions effectively or impact our customer service levels, which could put us at a competitive disadvantage and negatively impact our financial results. Repeated or prolonged interruptions of service due to problems with our systems or third-party technologies, whether or not in our control, could have a significant negative impact on our reputation and our ability to sell products and services. Furthermore, we are highly dependent upon a variety of internal computer and telecommunication systems to operate our business. Failure to design, develop and implement new technology infrastructure systems in an effective and timely manner, or to adequately invest in and maintain these systems, could result in the diversion of management's attention and resources and could materially adversely affect our operating results, competitive position and ability to efficiently manage our business. Our existing information systems may become obsolete, requiring us to transition our systems to a new platform. Such a transition would be time consuming, costly and damaging to our competitive position, and could require additional management resources. Failure to implement and deploy new systems or replacement systems on the schedules anticipated, could materially adversely affect our operating results.

In addition, our business may be impacted by disruptions to our own or third-party information technology (“IT”) infrastructure, which could result from (among other causes) cyber-attacks on or failures of such infrastructure or compromises to its physical security, as well as from damaging weather or other acts of nature. Cyber-based risks, in particular, are evolving and include attacks on our IT infrastructure, as well as attacks targeting the security, integrity and/or availability of the hardware, software and information installed, stored or transmitted in our products, including after the purchase of those products and when they are installed into third-party products, facilities or infrastructure. Such attacks could disrupt our business operations, our systems or those of third parties, and could impact the ability of our products to work as intended. We have experienced cyber-based attacks, and, due to the evolving threat landscape, may continue to experience them going forward, potentially with more frequency. We continue to make investments and adopt measures designed to enhance our protection, detection, response, and recovery capabilities, and to mitigate potential risks to our technology, products, services and operations from potential cyber-attacks. However, given the unpredictability, nature and scope of cyber-attacks, it is possible that potential vulnerabilities could go undetected for an extended period. As a result of a cyber-attack, we could potentially be subject to production downtimes, operational delays or other detrimental impacts on our operations or ability to provide products and services to our customers; destruction or corruption of data; security breaches; manipulation or improper use of our or third-party systems, networks or products; financial losses from remedial actions, loss of business, potential liability, penalties, fines and/or damage to our reputation, any of which could have a material adverse effect on our competitive position, results of operations, cash flows or financial condition. Due to the evolving nature of such risks, the impact of any potential incident cannot be predicted. Any disruption to our business due to such issues, or an increase in our costs to cover these issues that is greater than what we have anticipated, could have an adverse effect on our competitive position, results of operations, cash flows or financial condition.

There can be no assurance that our systems will not fail or experience disruptions, and any significant failure or disruption of these systems could prevent us from making sales, ordering supplies, delivering products, providing functional products and otherwise conducting our business.

We depend on our intellectual property, and have access to certain intellectual property and information of our customers, suppliers and distributors; infringement or failure to protect our intellectual property could adversely affect our future growth and success.

We rely on a combination of patents, trademarks, copyrights, trade secrets, nondisclosure agreements, customer and supplier agreements, license agreements, information technology security systems, internal controls and compliance systems and other measures to protect our intellectual property. We also rely on nondisclosure agreements, information technology security systems and other measures to protect certain customer and supplier information and intellectual property that we have in our possession or to which we have access. Our efforts to protect such intellectual property and proprietary rights may not be sufficient. We cannot be sure that our pending patent applications will result in the issuance of patents to us, that patents issued to or licensed by us in the past or in the future will not be challenged or circumvented by competitors or that these patents will be found to be valid or sufficiently broad to preclude our competitors from introducing technologies similar to those covered by our patents and patent applications. Our ability to protect and enforce our intellectual property rights also may be limited. In addition, we may be the target of competitor or other third-party patent enforcement actions seeking substantial monetary damages or seeking to prevent the sale and marketing of certain of our products or services. Our competitive position also may be adversely impacted by limitations on our ability to obtain possession of, and ownership or necessary licenses concerning, data important to the development or provision of our products or service offerings, or by limitations on our ability to restrict the use by others of data related to our products or services. Any of these events or factors could subject us to judgments, penalties and significant litigation costs or temporarily or permanently disrupt our sales and marketing of the affected products or services and could have a material adverse effect on our competitive position, results of operations, cash flows or financial condition.

Additional tax expense or additional tax exposures could affect our future profitability.

We are subject to income taxes in the United States and various international jurisdictions. Changes to tax laws and regulations, as well as changes and conflicts in related interpretations or other tax guidance could materially impact our tax receivables and liabilities and our deferred tax assets and deferred tax liabilities. Additionally, in the ordinary course of business, we are subject to examinations by various tax authorities. In addition, governmental authorities in various jurisdictions could launch new examinations and expand existing examinations. The global and diverse nature of our operations means that these risks will continue and additional examinations, proceedings and contingencies will arise from time to time. Our competitive position, cash flows, results of operation or financial condition may be affected by the outcome of examinations, proceedings and contingencies that cannot be predicted with certainty.

See "Business Overview" and "Results of Operations - Income Taxes" in Item 7 and "Note 2: Significant Accounting Policies" and "Note 16: Income Taxes" in Item 8 in this Form 10-K, for further discussion on income taxes and related contingencies.

We may not realize expected benefits from our cost reduction and restructuring efforts, and our profitability may be hurt or our business otherwise might be adversely affected.

In order to operate more efficiently and cost effectively, we may adjust employment, optimize our footprint or undertake other restructuring activities. These activities are complex and may involve or require significant changes to our operations. If we do not successfully manage restructuring activities, expected efficiencies and benefits might be delayed or not realized, and our operations and business could be disrupted. Risks associated with these actions and other workforce management issues include unfavorable political responses, unforeseen delays in the implementation of anticipated workforce reductions, additional unexpected costs, adverse effects on employee morale, the failure to meet operational targets due to the loss of employees or work stoppages, any of which may impair our ability to achieve anticipated cost reductions, otherwise harm our business or have a material adverse effect on our competitive position, results of operations, cash flows or financial condition.

Risks Related to Our Common Stock

Anti-takeover provisions could enable our Board of Directors to resist a takeover attempt by a third party and limit the power of our shareholders.

Otis' amended and restated certificate of incorporation and amended and restated bylaws contain, and Delaware law contains, provisions that are intended to deter coercive takeover practices and inadequate takeover bids by making such practices or bids unacceptably expensive to the bidder and to encourage prospective acquirers to negotiate with Otis' Board of Directors rather than to attempt a hostile takeover. These provisions include, among others, (1) the ability of our remaining directors to fill vacancies on Otis' Board of Directors (except in an instance where a director is removed by shareholders and the resulting vacancy is filled by shareholders); (2) limitations on shareholders' ability to call a special shareholder meeting; (3) rules regarding how shareholders may present proposals or nominate directors for election at shareholder meetings; and (4) the right of Otis' Board of Directors to issue preferred stock without shareholder approval.

In addition, we are subject to Section 203 of the Delaware General Corporation Law ("DGCL"), which could have the effect of delaying or preventing a change of control that you may favor. Section 203 provides that, subject to limited exceptions, persons that acquire, or are affiliated with persons that acquire, more than 15% of the outstanding voting stock of a Delaware corporation may not engage in a business combination with that corporation, including by merger, consolidation or acquisitions of additional shares, for a three-year period following the date on which that person or any of its affiliates becomes the holder of more than 15% of the corporation's outstanding voting stock.

We believe these provisions protect our shareholders from coercive or otherwise unfair takeover tactics by requiring potential acquirers to negotiate with Otis' Board of Directors and by providing Otis' Board of Directors with more time to assess any acquisition proposal. These provisions are not intended to make Otis immune from takeovers; however, these provisions apply even if the offer may be considered beneficial by some shareholders and could delay or prevent an acquisition that Otis' Board of Directors determines is not in the best interests of Otis and our shareholders. These provisions may also prevent or discourage attempts to remove and replace incumbent directors.

In addition, an acquisition or issuance of our stock could trigger the application of Section 355(e) of the Internal Revenue Code ("Code"), causing the distribution of Common Stock pursuant to the Separation to be taxable to RTX. Under the TMA, we would be required to indemnify RTX for the resulting tax, and this indemnity obligation might discourage, delay or prevent a change of control that our shareholders may consider favorable.

Our amended and restated bylaws designate the state courts within the State of Delaware as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our shareholders, which could discourage lawsuits against Otis and our directors and officers.

Otis' amended and restated bylaws provide that unless Otis' Board of Directors otherwise determines, the state courts within the State of Delaware (or, if no state court located within the State of Delaware has jurisdiction, the federal district court for the District of Delaware) will be the sole and exclusive forum for any derivative action or proceeding brought on behalf of Otis, any action asserting a claim for or based on a breach of a fiduciary duty owed by any current or former director or officer or other employee of Otis to Otis or its shareholders, including a claim alleging the aiding and abetting of such a breach of fiduciary duty, any action asserting a claim against Otis or any current or former director or officer or other employee of Otis arising pursuant to any provision of the DGCL or our amended and restated certificate of incorporation or amended and restated bylaws, any action asserting a claim relating to or involving Otis governed by the internal affairs doctrine, or any action asserting an "internal corporate claim" as that term is defined in Section 115 of the DGCL.

To the fullest extent permitted by law, this exclusive forum provision applies to state and federal law claims, including claims under the federal securities laws, including the Securities Exchange Act of 1934, as amended ("Exchange Act"), although Otis shareholders will not be deemed to have waived Otis' compliance with the federal securities laws and the rules and regulations thereunder. The enforceability of similar exclusive forum provisions in other companies' organizational documents has been challenged in legal proceedings, and it is possible that, in connection with claims subject to exclusive federal jurisdiction, a court could find the exclusive forum provision contained in the amended and restated bylaws to be inapplicable or unenforceable.

This exclusive forum provision may limit the ability of our shareholders to bring a claim in a judicial forum that such shareholders find favorable for disputes with Otis or our directors or officers, which may discourage such lawsuits against Otis and our directors and officers. Alternatively, if a court were to find this exclusive forum provision inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings described above, we may incur additional costs associated with resolving such matters in other jurisdictions, which could negatively affect our business, results of operations and financial condition.

Risks Related to the Separation

Our historical information is not necessarily indicative of the results that we will achieve as a separate, publicly traded company and may not be a reliable indicator of our future results.

The historical information in this Form 10-K for the periods prior to the Separation is derived from the combined financial statements and accounting records of our former parent UTC and is based on a number of estimates and assumptions. Accordingly, such historical financial information does not necessarily reflect the financial condition, results of operations or cash flows that we will achieve as a separate, publicly traded company. Prior to the Separation, our business had been operated by UTC as part of its broader corporate organization, rather than as an independent company. As part of our former parent UTC, we were able to enjoy certain benefits from UTC's operating diversity, purchasing power and opportunities to pursue integrated strategies with UTC's other businesses. Additionally, UTC or one of its affiliates performed or helped perform various corporate functions for us, such as accounting, auditing, tax, legal, human resources, investor relations, risk management, treasury and other general and administrative functions. Our historical and pro forma financial results reflect allocations of corporate expenses from UTC for such functions, which are likely to be less than the expenses we will incur as a separate publicly traded company. In addition, the diversification of our sales, costs, and cash flows have diminished as a stand-alone company, such that our results of operations, cash flows, working capital and financing requirements may be subject to increased volatility and our ability to fund capital expenditures and investments, and service debt may be diminished and we are no longer able to use cash flow from UTC's other businesses as part of its centralized cash management systems to fund our investments and operations. Accordingly, for these reasons, as well as the additional Risks Related to the Separation noted below, we may not achieve the expected benefits of the Separation.

As a result of the Separation, certain members of management, directors and shareholders may own stock in RTX, Otis and Carrier, and as a result may face actual or potential conflicts of interest.

Management and directors of each of RTX, Otis and Carrier may own common stock in all three companies as a result of the Separation. This ownership overlap could create, or appear to create, potential conflicts of interest when the management and directors of one company face decisions that could have different implications for themselves and the other two companies. For example, potential conflicts of interest could arise in connection with the resolution of any dispute regarding the terms of the agreements governing the separation and Otis' relationship with RTX and Carrier thereafter.

We may not be able to engage in desirable capital-raising or strategic transactions as a result of the Separation and the related TMA.

Under current U.S. federal income tax law, a spin-off that otherwise qualifies for tax-free treatment can be rendered taxable to the parent corporation and its shareholders as a result of certain post-spin-off transactions, including certain acquisitions of shares or assets of the spun-off corporation. To preserve the tax-free treatment of the Separation, and in addition to Otis' indemnity obligation described below, the TMA restricts us, for the two-year period following the Separation, except in specific circumstances, from (1) entering into any transaction pursuant to which all or a portion of the shares of Otis stock would be acquired, whether by merger or otherwise; (2) issuing equity securities beyond certain thresholds; (3) repurchasing shares of Otis stock other than in certain open-market transactions; and (4) ceasing to actively conduct certain of our businesses. The TMA also prohibits us from taking or failing to take any other action that would prevent the Separation and certain related transactions from qualifying as a transaction that is generally tax-free, for U.S. federal income tax purposes, under Sections 355 and 368(a)(1)(D) of the Code or for applicable non-U.S. income tax purposes. Further, the TMA imposes similar restrictions on us and our subsidiaries during the two-year period following the Separation that are intended to prevent certain transactions undertaken as part of the internal reorganization from failing to qualify as transactions that are generally tax-free for U.S. federal income tax purposes under Sections 355 and 368(a)(1)(D) of the Code or for applicable non-U.S. income tax purposes. These restrictions may limit our ability to pursue certain equity issuances, strategic transactions, repurchases or other transactions that we may otherwise believe to be in the best interests of our shareholders or that might increase the value of our business.

In connection with the Separation, each of RTX, Otis and Carrier agreed to indemnify the other parties for certain liabilities. If we are required to pay under these indemnities to RTX and/or Carrier, our financial results could be negatively impacted. Also, the RTX or Carrier indemnities may not be sufficient to hold us harmless from the full amount of liabilities for which RTX and Carrier are allocated responsibility, and RTX and/or Carrier may not be able to satisfy their respective indemnification obligations in the future.

Pursuant to the Separation Agreement, the TMA and the EMA, each party agreed to indemnify the other parties for certain liabilities. Indemnities that we may be required to provide RTX and/or Carrier are not subject to any cap, may be significant and could negatively impact our business. Third parties could also seek to hold us responsible for any of the liabilities that RTX and/or Carrier has agreed to retain. The indemnities from RTX and Carrier for our benefit may not be sufficient to protect us against the full amount of such liabilities, and RTX and/or Carrier may not be able to fully satisfy their respective indemnification obligations. Any amounts we are required to pay pursuant to such indemnification obligations and other liabilities could require us to divert cash that would otherwise have been used in furtherance of our operating business. Moreover, even if we ultimately succeed in recovering from RTX or Carrier, as applicable, we may be temporarily required to bear these losses ourselves. Each of these risks could negatively affect our business, results of operations and financial condition.

If the Separation, together with certain related transactions, were to fail to qualify as a transaction that is generally tax-free for U.S. federal income tax purposes, including as a result of subsequent acquisitions of our stock or the stock of RTX, we, as well as RTX, Carrier, and RTX's shareholders, could be subject to significant tax liabilities. In addition, if certain internal restructuring transactions were to fail to qualify as transactions that are generally tax-free for U.S. federal or non-U.S. income tax purposes, we, as well as RTX and Carrier could be subject to significant tax liabilities. In certain circumstances, we could be required to indemnify RTX for material taxes and other related amounts pursuant to indemnification obligations under the TMA.

In connection the Separation, our former parent UTC received a ruling from the IRS regarding certain U.S. federal income tax matters relating to the Separation and an opinion of outside counsel regarding the qualification of certain elements of the Separation under Section 355 of the Code. The IRS ruling and the opinion of counsel were based upon and rely on, among other

things, various facts and assumptions, as well as certain representations, statements and undertakings of UTC (and RTX), Otis and Carrier, including those relating to the past and future conduct of UTC (and RTX), Otis and Carrier. Notwithstanding receipt of the IRS ruling and the opinion of counsel, the IRS could determine that the Separation and/or certain related transactions should be treated as taxable transactions for U.S. federal income tax purposes if it determines that any of the representations, assumptions or undertakings upon which the IRS ruling or the opinion of counsel was based were inaccurate or have not been complied with. In addition, the IRS ruling does not address all of the issues that are relevant to determining whether the Separation, together with certain related transactions, qualifies as a transaction that is generally tax-free for U.S. federal income tax purposes. The opinion of counsel represents the judgment of such counsel and is not binding on the IRS or any court, and the IRS or a court may disagree with the conclusions in the opinion of counsel. Accordingly, notwithstanding receipt by UTC of the IRS ruling and the opinion of counsel, there can be no assurance that the IRS will not assert that the Separation and/or certain related transactions did not qualify for tax-free treatment for U.S. federal income tax purposes or that a court would not sustain such a challenge.

If the distribution of Common Stock pursuant to the Separation were to fail to qualify as a transaction that is generally tax-free for U.S. federal income tax purposes under Sections 355 and 368(a)(1)(D) of the Code, in general, for U.S. federal income tax purposes, RTX would recognize a taxable gain as if it had sold the Common Stock in a taxable sale for its fair market value, and RTX shareholders who received Common Stock in the distribution would be subject to tax as if they had received a taxable distribution equal to the fair market value of such shares. Even if the distribution of Common Stock pursuant to the Separation were to otherwise qualify as a tax-free transaction under Sections 355 and 368(a)(1)(D) of the Code, it may result in taxable gain to RTX (but not its shareholders) under Section 355(e) of the Code if the Separation were deemed to be part of a plan (or series of related transactions) pursuant to which one or more persons acquire, directly or indirectly, shares representing a 50% or greater interest (by vote or value) in RTX or Otis. For this purpose, any acquisitions of RTX or Otis shares within the period beginning two years before the distribution of Common Stock pursuant to the Separation and ending two years after such distribution are presumed to be part of such a plan, although RTX or Otis may be able to rebut that presumption (including by qualifying for one or more safe harbors under applicable Treasury Regulations).

In addition, in connection with and prior to the Separation, UTC and its subsidiaries completed various internal reorganization transactions. With respect to certain transactions undertaken as part of the internal reorganization, UTC obtained tax rulings in certain non-U.S. jurisdictions and/or opinions of external tax advisors, in each case, regarding the tax treatment of such transactions. Such tax rulings and opinions were based upon and relied on, among other things, various facts and assumptions, as well as certain representations (including with respect to certain valuation matters relating to the internal reorganization), statements and undertakings of UTC (and RTX), Otis, Carrier or their respective subsidiaries. If any of these representations or statements were, or become, inaccurate or incomplete, or if RTX, Otis, Carrier or any of their respective subsidiaries do not fulfill or otherwise comply with any such undertakings or covenants, such tax rulings and/or opinions may be invalid or the conclusions reached therein could be jeopardized. Further, notwithstanding receipt of any such tax rulings and/or opinions, there can be no assurance that the relevant taxing authorities will not assert that the tax treatment of the relevant transactions differs from the conclusions reached in the relevant tax rulings and/or opinions. In the event the relevant taxing authorities prevail with any challenge in respect of any relevant transaction, we, as well as RTX and Carrier could be subject to significant tax liabilities.

Under the TMA, Otis generally is required to indemnify RTX and Carrier for any taxes resulting from the Separation and certain related transactions (and any related costs and other damages) to the extent such amounts resulted from (1) an acquisition of all or a portion of the equity securities or assets of Otis, whether by merger or otherwise (and regardless of whether we participated in or otherwise facilitated the acquisition), (2) other actions or failures to act by Otis or (3) certain of Otis' representations, covenants or undertakings contained in any of the separation-related agreements and documents or in any documents relating to the IRS ruling and/or the opinion of counsel being incorrect or violated. Further, under the TMA, we generally are required to indemnify RTX and Carrier for a specified portion of any taxes (and any related costs and other damages) (a) arising as a result of the failure of the Separation and certain related transactions to qualify as a transaction that is generally tax-free (including as a result of Section 355(e) of the Code) or a failure of any internal separation transaction that is intended to qualify as a transaction that is generally tax-free to so qualify, in each case, to the extent such amounts do not result from a disqualifying action by, or acquisition of equity securities of, Otis, Carrier or RTX or (b) arising from an adjustment, pursuant to an audit or other tax proceeding, with respect to any transaction undertaken in connection with the Separation that is not intended to qualify as a transaction that is generally tax-free. Any such indemnity obligations could be material.

Potential liabilities may arise due to fraudulent transfer considerations, which would adversely affect our financial condition and results of operations.

In connection with the Separation, our former parent UTC undertook several corporate reorganization transactions involving its subsidiaries, which, including the Separation of Otis, may be subject to various fraudulent conveyance and transfer laws. If, under these laws, a court were to determine that, at the time of the separation, any entity involved in these reorganization transactions or the separation: (1) was insolvent, was rendered insolvent by reason of the separation, or had remaining assets constituting unreasonably small capital, and (2) received less than fair consideration in connection with the reorganization; or intended to incur, or believed it would incur, debts beyond its ability to pay these debts as they matured, then the court could void the Separation, in whole or in part, as a fraudulent conveyance or transfer. The court could then require our shareholders to return to RTX some or all of the shares of the Common Stock issued in the distribution, or require RTX or Otis, as the case may be, to fund liabilities of the other company for the benefit of creditors. The measure of insolvency would vary depending upon the jurisdiction and the applicable law. Generally, however, an entity would be considered insolvent if the fair value of its assets was less than the amount of its liabilities (including the probable amount of contingent liabilities), or if it incurred debt beyond its ability to repay the debt as it matures. No assurance can be given as to what standard a court would apply to determine insolvency or that a court would determine that Otis or any of its subsidiaries were solvent at the time of or after giving effect to the distribution.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We have a direct physical presence in approximately 80 countries with an overall property portfolio comprising approximately 15 million square feet of space as of December 31, 2021, compared to approximately 16 million square feet of space as of December 31, 2020. We have approximately 2,300 facilities, of which approximately 50%, 37% and 13% of which are located in EMEA, Asia and the Americas, respectively. We operate over 1,400 branches and offices, 11 R&D centers and 18 manufacturing facilities globally. Our principal manufacturing facilities are located across Brazil, China, Czech Republic, France, India, Korea, Russia, Spain, and the United States, of which 10 are owned. Our principal R&D centers are located in China, the United States, India, France, Germany, Japan and Spain. Our branches and R&D centers typically support both our New Equipment and Service segments.

Our fixed assets as of December 31, 2021 include manufacturing facilities and non-manufacturing facilities, such as warehouses, and a substantial quantity of machinery and equipment, most of which are general purpose machinery and equipment using special jigs, tools and fixtures and in many instances having automatic control features and special adaptations. The facilities, warehouses, machinery and equipment in use as of December 31, 2021 are substantially in good operating condition.

Item 3. Legal Proceedings

For a discussion regarding material legal proceedings, see "Note 22, Contingent Liabilities" to the Consolidated Financial Statements within Item 8 of this Form 10-K.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Our Common Stock is listed on the New York Stock Exchange under the symbol "OTIS". There were approximately 22,100 registered shareholders at January 21, 2022. The information required by Item 5 with respect to securities authorized for issuance under equity compensation plans is incorporated by reference to Part III, Item 12 in this Form 10-K.

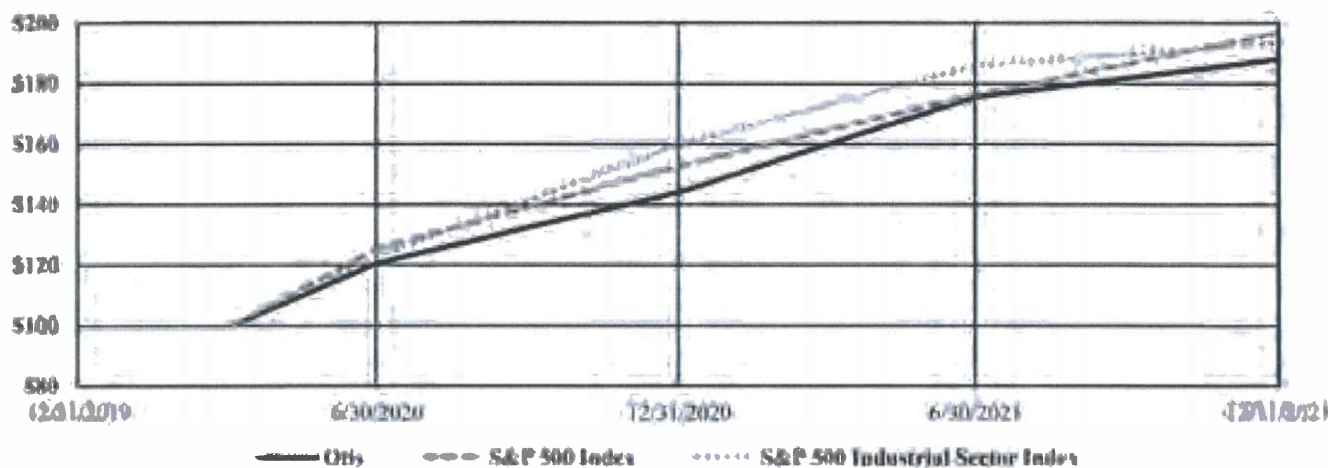
Stock Performance Graph

The following table and graph illustrate the total return from April 3, 2020 (date of Separation) through December 31, 2021, for (1) our Common Stock, (2) the Standard and Poor's ("S&P") 500 Index, and (3) the S&P 500 Industrial Sector Index. The graph and table assume that \$100.00 was invested on April 3, 2020 in each of our Common Stock, the S&P 500 Index and the S&P 500 Industrial Select Sector Index, and that any dividends were reinvested. The comparison reflected in the graph and the table are not intended to forecast the future performance of our Common Stock and may not be indicative of our future performance.

Comparison of Cumulative Total Return - Table

	April 3, 2020	June 30, 2020	December 31, 2020	June 30, 2021	December 31, 2021
Otis	\$ 100	\$ 121	\$ 144	\$ 176	\$ 188
S&P 500 Index	100	125	153	176	197
S&P 500 Industrial Sector Index	100	122	158	186	193

Comparison of Cumulative Total Return - Graph



Issuer Purchases of Equity Securities

The following table provides information about our purchases during the quarter ended December 31, 2021 of equity securities that are registered by us pursuant to Section 12 of the Exchange Act.

2021	Total Number of Shares Purchased (thousands)	Average Price Paid per Share ⁽¹⁾	Total Number of Shares Purchased as Part of a Publicly Announced Program (thousands)	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Program (dollars in millions)
October 1 - October 31	—	\$ —	—	\$ 275
November 1 - November 30	—	—	—	\$ 275
December 1 - December 31	—	—	—	\$ 275
Total	—	\$ —	—	—

⁽¹⁾ Average price paid per share includes costs associated with the repurchases.

On April 27, 2020, our Board of Directors authorized a share repurchase program for up to \$1 billion of Common Stock. As of December 31, 2021, the maximum dollar value of shares that may yet be purchased under this current program was approximately \$275 million. Under this program, shares may be purchased on the open market, in privately negotiated transactions, under accelerated share repurchase programs or under plans complying with rules 10b5-1 and 10b-18 under the Exchange Act. As a result of the increased debt incurred to fund the Tender Offer, we have temporarily suspended our share repurchases as we focus on deleveraging.

Item 6. [Reserved]

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

BUSINESS OVERVIEW

We are the world's leading elevator and escalator manufacturing, installation and service company. Our Company is organized into two segments, New Equipment and Service. Through our New Equipment segment, we design, manufacture, sell and install a wide range of passenger and freight elevators, as well as escalators and moving walkways for residential and commercial buildings and infrastructure projects. Our New Equipment customers include real-estate and building developers and general contractors who develop and/or design buildings for residential, commercial, retail or mixed-use activity. We sell our New Equipment directly to customers, as well as through agents and distributors.

Through our Service segment, we perform maintenance and repair services for both our own products and those of other manufacturers and provide modernization services to upgrade elevators and escalators. Maintenance services include inspections to ensure code compliance, preventive maintenance offerings and other customized maintenance offerings tailored to meet customer needs, as well as repair services to address equipment and component wear and tear and breakdowns. Modernization services enhance equipment operation and improve building functionality. Modernization offerings can range from relatively simple upgrades of interior finishes and aesthetics to complex upgrades of larger components and sub-systems. Our typical Service customers include building owners, facility managers, housing associations and government agencies that operate buildings where elevators and escalators are installed.

We function under a centralized operating model whereby we pursue a global strategy set around New Equipment and Service, in large measure, because we seek to grow our maintenance portfolio, in part, through the conversion of new elevator and escalator installations into service contracts. Accordingly, we benefit from an integrated global strategy, which sets priorities and establishes accountability across the full product lifecycle.

For additional discussion of our business, refer to Item 1 in this Form 10-K.

Zardoya Otis Tender Offer

The Company announced a tender offer to acquire all of the issued and outstanding shares of Zardoya Otis not owned by Otis (the "Tender Offer"). The offer price is €7.07 per share in cash after adjusting for dividends. As of February 4, 2022, the Tender Offer remains outstanding and has not yet been completed. See "Note 1: Business Overview" and "Note 10: Borrowings and Lines of Credit" in Item 8 in this Form 10-K, as well as "Liquidity and Financial Condition" in this item, for further details regarding this pending transaction and financing arrangements entered into in connection with the Tender Offer and Item 1A in this Form 10-K for additional risks related to thereto.

Impact of COVID-19 on our Company

The results of our operations and overall financial performance were impacted due to the COVID-19 pandemic during the years ended December 31, 2021 and 2020. COVID-19 has had, and could continue to have, an impact on our business, including impacts to overall financial performance in 2022, as a result of the following, among other things:

- Customer demand impacting our new equipment, maintenance and repair, and modernization businesses
- Cancellations or delays of customer orders
- Customer liquidity constraints and related credit reserves
- Supplier and raw material capacity constraints, delays and related costs

We currently do not expect any significant impact to our capital and financial resources from the COVID-19 pandemic, including our overall liquidity position based on our available cash and cash equivalents and our access to credit facilities and the capital markets.

See the "Liquidity and Financial Condition" section of this item of this Form 10-K for further detail and Item 1A in this Form 10-K for additional risks related to COVID-19.

Separation from United Technologies Corporation

As previously disclosed, on April 3, 2020, Otis became an independent, publicly-traded company and its Common Stock is listed under the symbol "OTIS" on the New York Stock Exchange ("NYSE") as a result of the separation ("the Separation") of each of Otis and Carrier Global Corporation ("Carrier") from United Technologies Corporation, subsequently renamed Raytheon Technologies Corporation ("UTC" or "RTX", as applicable).

Prior to the Separation on April 3, 2020, our historical financial statements were prepared on a standalone combined basis and were derived from the consolidated financial statements and accounting records of our former parent, UTC. For the periods subsequent to April 3, 2020, our financial statements are presented on a consolidated basis as the Company became a standalone public company.

We entered into a transition services agreement ("TSA") and tax matters agreement ("TMA") with our former parent, UTC, and Carrier on April 2, 2020. Under the TSA, we received services for information technology, technical and engineering support, application support for operations, general administrative services and other support services. The TSA and the related trailing exit costs are substantially completed as of December 31, 2021. For additional discussion, see "Note 5: Related Parties" in Item 8 in this Form 10-K.

The TMA governs the parties' respective rights, responsibilities and obligations with respect to tax matters (including responsibility for taxes, entitlement to refunds, allocation of tax attributes, preparation of tax returns, control of tax contests and other tax matters). For additional discussion, see "Note 5: Related Parties" in Item 8 in this Form 10-K.

See Item 1A in this Form 10-K for discussion on risks related to Separation.

RESULTS OF OPERATIONS

Net Sales

<i>(dollars in millions)</i>	2021	2020	2019
Net sales	\$ 14,298	\$ 12,756	\$ 13,118
Percentage change year-over-year	12.1 %	(2.8)%	1.6 %

The factors contributing to the total percentage change year-over-year in total Net sales are as follows:

	2021	2020
Organic volume	8.9 %	(2.1)%
Foreign currency translation	3.0 %	(0.4)%
Acquisitions and divestitures, net	0.2 %	(0.2)%
Other	— %	(0.1)%
Total % change	12.1 %	(2.8)%

The Organic volume increase of 8.9% for 2021 was driven by increases in organic sales of 15.5% in New Equipment and 4.1% in Service.

The Organic volume decrease of (2.1)% for 2020 was driven by decreases in organic sales of (4.0)% in New Equipment and (0.7)% in Service.

See "Segment Review" below for a discussion of Net sales by segment.

Cost of Products and Services Sold

<i>(dollars in millions)</i>	2021	2020	2019
Cost of products and services sold	\$ 10,105	\$ 8,977	\$ 9,292
Percentage change year-over-year	12.6 %	(3.4)%	1.1 %

The factors contributing to the percentage change year-over-year in total cost of products and services sold are as follows:

	2021	2020
Organic volume	9.1 %	(2.7)%
Foreign currency translation	3.3 %	(0.5)%
Acquisitions and divestitures, net	0.2 %	(0.2)%
Total % change	12.6 %	(3.4)%

The organic increase in total cost of products and services sold in 2021 was driven primarily by the organic sales increases noted above.

The organic volume decrease in total cost of products and services sold in 2020 was driven by the organic sales decrease noted above, productivity and cost containment actions.

Gross Margin

<i>(dollars in millions)</i>	2021	2020	2019
Gross margin	\$ 4,193	\$ 3,779	\$ 3,826
Gross margin percentage	29.3 %	29.6 %	29.2 %

Gross margin decreased 30 basis points in 2021 when compared to 2020, as improvements in gross margin in both New Equipment and Service were more than offset by overall segment mix.

Gross margin increased 40 basis points in 2020 when compared to 2019, primarily driven by improvement in the Service margin and overall segment mix, partially offset by a decrease in the New Equipment margin.

Research and Development

<i>(dollars in millions)</i>	2021	2020	2019
Research and development	\$ 159	\$ 152	\$ 163
Percentage of Net sales	1.1 %	1.2 %	1.2 %

Research and development spending increased \$7 million, or 4.6%, in 2021 compared to 2020. Research and development expense as a percentage of net sales has remained relatively flat year-over-year. Research and development includes product development and innovation, including for IoT and developing the next generation of connected elevators and escalators.

Research and development spending decreased approximately \$11 million, or (6.7)%, in 2020 compared to 2019 primarily as a result of cost containment actions taken in 2020. Research and development expenses remained relatively consistent as a percentage of Net sales.

Selling, General and Administrative

<i>(dollars in millions)</i>	2021	2020	2019
Selling, general and administrative	\$ 1,948	\$ 1,924	\$ 1,810
Percentage of Net sales	13.6 %	15.1 %	13.8 %

2021 Compared with 2020

Selling, general and administrative expenses increased \$24 million, or 1.2%, in 2021. The primary drivers of the change are the following:

- Higher employment and information technology costs, including incremental standalone public company costs, and the absence of cost containment actions taken during 2020 in response to COVID-19;
- Impact of unfavorable foreign exchange of \$38 million compared to 2020;
- These increases were partially offset by lower non-recurring Separation-related costs and the absence of UTC allocations of \$105 million.

Selling, general and administrative expenses as a percentage of Net sales decreased 150 basis points in 2021 compared to 2020, as Net sales increased at a faster rate than expenses.

2020 Compared with 2019

Selling, general and administrative expenses increased approximately \$114 million, or 6.3%, in 2020. The primary drivers of the change are the following:

- Lower employment costs and lower discretionary spending, including cost containment actions taken in response to COVID-19, and the absence of corporate allocations from UTC, being more than offset by
- Higher non-recurring Separation-related costs and incremental standalone public company costs.

Selling, general and administrative expenses as a percentage of Net sales increased 130 basis points in 2020 compared to 2019, primarily driven by the increase in non-recurring Separation-related costs, incremental standalone public company costs and lower Net sales.

Restructuring Costs

<i>(dollars in millions)</i>	2021	2020	2019
Restructuring costs	\$ 56	\$ 77	\$ 54

We initiate restructuring actions to keep our cost structure competitive. Charges generally arise from severance related to workforce reductions, and to a lesser degree, facility exit and lease termination costs associated with the consolidation of office and manufacturing operations. We continue to closely monitor the economic environment and may undertake further restructuring actions to keep our cost structure aligned with the demands of the prevailing market conditions.

Total 2021 restructuring costs include \$41 million of costs related to 2021 actions, \$13 million of costs related to 2020 actions and \$2 million of costs related to pre-2020 actions.

Most of the expected charges will require cash payments, which we have funded and expect to continue to fund with cash generated from operations. During 2021, we had cash outflows of approximately \$51 million related to the restructuring actions and expect to make cash payments of \$47 million to complete the actions announced, which is comprised of \$7 million of additional restructuring expenses and \$40 million of existing restructuring accruals as of December 31, 2021.

We generally expect to achieve annual recurring savings within the two-year period subsequent to initiating the actions, including \$41 million for the 2021 actions and \$55 million for the 2020 actions, of which approximately \$66 million was realized for the 2021 and 2020 actions during the current year.

For additional discussion of restructuring, see Note 17, "Restructuring Costs" in the Consolidated Financial Statements.

Other Income (Expense), Net

<i>(dollars in millions)</i>	2021	2020	2019
Other income (expense), net	\$ 22	\$ (64)	\$ (39)

Other income (expense), net primarily includes the impact of changes in the fair value and settlement of derivatives, gains or losses on sale of businesses and fixed assets, earnings from equity method investments, fair value changes on equity securities, impairments, non-recurring Separation-related expenses and certain other operating items.

The change in Other income (expense), net of \$86 million in 2021 compared to 2020, was primarily driven by the absence of a fixed asset impairment of \$(71) million and related licensing costs of \$(14) million recognized during 2020.

The change in Other income (expense), net of \$(25) million in 2020 compared to 2019, was driven by fixed asset impairments of \$(71) million and related license costs of \$(14) million and non-recurring Separation-related expenses. These were partially offset by favorable mark-to-market adjustments on foreign currency derivatives of \$46 million when compared to 2019, the absence of the loss on the sale of a business of \$19 million included in the 2019 results and a non-recurring gain of \$17 million related to an expected insurance recovery recognized for property damage as a result of the fire in our manufacturing facility in Germany in 2020.

See "Note 5: Related Parties" in Item 8 in this Form 10-K for further discussion on costs related to the Separation.

Interest Expense (Income), Net

<i>(dollars in millions)</i>	2021	2020	2019
Interest expense (income), net	\$ 136	\$ 122	\$ (14)

Interest expense (income), net primarily relates to interest expense on our external debt, offset by interest income earned on cash balances, short-term investments and, in 2019 and prior, related party activity between Otis and our former parent, UTC.

The increase in Interest expense (income), net of \$14 million in 2021 compared to 2020, was primarily driven by interest expense on the external debt associated with the Separation, which was not outstanding for the full year of 2020, as well as costs associated with the bridge financing and related guarantees and the interest expense related to the Tender Offer. This was partially offset by lower interest expense as a result of the debt refinancing and debt repayments during 2021. For additional discussion of debt refinancing and repayments, see the "Liquidity and Financial Condition" section below.

The increase in Interest expense (income), net in 2020 compared to 2019 was primarily driven by interest expense of \$124 million on our external debt and debt issuance cost amortization of \$5 million in 2020. These expenses were partially offset by interest income on short-term investments.

The average interest rate on our external debt for 2021 and 2020 was 2.3%.

For additional discussion of borrowings, see "Note 10: Borrowings and Lines of Credit" in Item 8 in this Form 10-K.

Income Taxes

	2021	2020	2019
Effective tax rate	27.6 %	30.1 %	31.9 %

The 2021, 2020 and 2019 effective tax rates are higher than the statutory U.S. rate primarily due to higher international tax rates as compared to the lower U.S. federal statutory rate and foreign earnings subject to U.S. tax under the provisions of the U.S. Tax Cuts and Jobs Act ("TCJA").

The 2021 effective tax rate is lower than the 2020 effective tax rate primarily due to the following:

- \$16 million tax benefit related to repatriation of foreign earnings as a result of changes to planned debt repayments and in estimates related to Otis' pre-Separation tax attributes;
- \$16 million decrease in U.S. tax related to base erosion and anti-abuse tax in 2021;
- Absence of the tax cost resulting from Separation-related expenses and fixed asset impairment incurred in 2020; and
- The net impact of income tax settlements related to the Separation, as discussed in Note 5, "Related Parties".

The 2020 effective tax rate is lower than the 2019 effective tax rate primarily due to a \$10 million tax benefit related to our change in assertion of no longer intending to reinvest certain undistributed earnings of our international subsidiaries made during 2020 as compared to the liability previously recorded by UTC, a decrease as a result of tax regulations related to the TCJA that were enacted during 2020, as well as a recognition of a Separation-related foreign tax loss, all partially offset by incremental withholding taxes in 2020.

For additional discussion of income taxes and the effective income tax rate, see "Note 16: Income Taxes" in Item 8 in this Form 10-K.

Noncontrolling Interest in Subsidiaries' Earnings

<i>(dollars in millions)</i>	2021	2020	2019
Noncontrolling interest in subsidiaries' earnings	\$ 174	\$ 150	\$ 151

Noncontrolling interest in subsidiaries' earnings increased in 2021 in comparison to 2020, primarily driven by an increase in net income from non-wholly owned subsidiaries and the impact of foreign exchange rates. Ownership interest in the underlying non-wholly owned subsidiaries has remained generally consistent year-over-year.

For additional discussion of the Zardoya Otis Tender Offer, see "Note 1: Business Overview" in Item 8 in this Form 10-K.

Noncontrolling interest in subsidiaries' earnings remained consistent in 2020 in comparison to 2019.

Net Income Attributable to Otis Worldwide Corporation

<i>(dollars in millions, except per share amounts)</i>	2021	2020	2019
Net income attributable to Otis Worldwide Corporation	\$ 1,246	\$ 906	\$ 1,116
Diluted earnings per share	\$ 2.89	\$ 2.08	\$ 2.55

Net income attributable to Otis Worldwide Corporation increased in 2021, compared to the same period in 2020, primarily driven by higher operating profit and the benefit of a lower effective tax rate, partially offset by higher noncontrolling interest in subsidiaries' earnings and higher interest expense.

Net income attributable to Otis Worldwide Corporation decreased in 2020, compared to the same period in 2019, primarily driven by non-recurring Separation-related costs, fixed asset impairments, non-recurring Separation-related tax

benefits, the impact of non-recurring tax items, and incremental standalone public company costs incurred in 2020 after the Separation.

For additional discussion of the net income attributable to shareholders and earnings per share, see "Note 3: Earnings Per Share" in Item 8 in this Form 10-K.

Segment Review

(dollars in millions)	Net Sales			Operating Profit			Operating Profit Margin		
	2021	2020	2019	2021	2020	2019	2021	2020	2019
New Equipment	\$ 6,428	\$ 5,371	\$ 5,648	\$ 459	\$ 318	\$ 393	7.1 %	5.9 %	7.0 %
Service	7,870	7,385	7,470	1,762	1,611	1,603	22.4 %	21.8 %	21.5 %
Total segment	14,298	12,756	13,118	2,221	1,929	1,996	15.5 %	15.1 %	15.2 %
General corporate expenses and other	—	—	—	(113)	(290)	(182)	—	—	—
Total	\$ 14,298	\$ 12,756	\$ 13,118	\$ 2,108	\$ 1,639	\$ 1,814	14.7 %	12.8 %	13.8 %

As previously disclosed in our Quarterly Report on Form 10-Q for the quarter ending June 30, 2021, we changed how we present and discuss operating profit in our Segment Review of the Management's Discussion and Analysis. Previously, we presented and discussed the percentage change in segment operating profit between periods using organic/operational profit, which excluded the impact of foreign currency translation, acquisitions and divestitures and restructuring costs. We are now presenting and discussing, including for the 2020 to 2019 comparison, the change in the total dollar amount of segment operating profit and the percentage change in operating profit margin between periods. There is no change in the amounts of operating profit that we have previously disclosed. We have continued to use the same key metrics to explain the changes in our operating performance that we previously used. For example, as discussed below, the drivers of the changes in 2021 relative to the prior year are volume, rate drivers, selling general and administrative expense, foreign exchange and restructuring which are consistent with the drivers we have disclosed in the past where applicable. In addition, we will discuss the impact of foreign currency translation, acquisitions and divestitures and restructuring to the extent they are meaningful to understanding our performance. We believe this changed approach aligns better with how we measure our performance.

New Equipment

The New Equipment segment designs, manufactures, sells and installs a wide range of passenger and freight elevators, as well as escalators and moving walkways in residential and commercial buildings and infrastructure projects. Our New Equipment customers include real-estate and building developers and general contractors who develop and/or design buildings for residential, commercial, retail or mixed-use activity. We sell directly to customers as well as through agents and distributors. We also sell New Equipment to government agencies to support infrastructure projects, such as airports, railways or metros.

Summary performance for New Equipment for the years ended December 31, 2021, 2020 and 2019 was as follows:

<i>(dollars in millions)</i>	2021	2020	2019	Total Increase (Decrease) Year-Over-Year for:			
				2021 compared with 2020		2020 compared with 2019	
Net sales	\$ 6,428	\$ 5,371	\$ 5,648	\$ 1,057	19.7 %	\$ (277)	(4.9)%
Cost of sales	5,293	4,439	4,640	854	19.2 %	(201)	(4.3)%
	1,135	932	1,008	203	21.8 %	(76)	(7.5)%
Operating expenses	676	614	615	62	10.1 %	(1)	(0.2)%
Operating profit	\$ 459	\$ 318	\$ 393	\$ 141	44.3 %	\$ (75)	(19.1)%
Operating profit margin	7.1 %	5.9 %	7.0 %				

Summary analysis of the Net sales change for New Equipment for the years ended December 31, 2021 and 2020 compared with the prior years was as follows:

Components of Net sales change:	2021	2020
Organic	15.5 %	(4.0)%
Foreign currency translation	4.1 %	(0.8)%
Acquisitions/Divestitures, net	0.1 %	(0.1)%
Total % change	19.7 %	(4.9)%

2021 Compared with 2020

The organic sales increase of 15.5% was driven by mid-teens growth in the Americas, high teens growth in Asia and high single digit growth in EMEA.

New Equipment operating profit increased \$141 million, primarily due to higher volume of \$140 million, with an operating margin increase of 120 basis points. Favorable field installation and material productivity was partially offset by unfavorable price and mix and commodity headwinds. Foreign currency tailwinds of \$30 million were more than offset by higher selling, general and administrative costs of \$40 million.

2020 Compared with 2019

The organic sales decrease of (4.0)% was primarily driven by organic sales declines in all regions primarily due to impacts of the COVID-19 pandemic.

New Equipment operating profit decreased \$(75) million, with an operating profit margin decrease of 110 basis points. Strong material productivity of \$60 million and cost containment actions were more than offset by lower volume of \$(35) million and unfavorable rate drivers of \$(90) million due to under-absorption, field inefficiencies, price and mix and higher bad debt expense. New Equipment operating profit was also impacted by foreign currency headwinds of \$(10) million, higher restructuring costs of \$(10) million and incremental public company standalone costs.

Service

The Service segment performs maintenance and repair services for both our products and those of other manufacturers and provides modernization services to upgrade elevators and escalators. Maintenance services include inspections to ensure code compliance, preventive maintenance offerings and other customized maintenance offerings tailored to meet customer needs, as well as repair services that address equipment and component wear and tear, and breakdowns. Modernization services enhance equipment operation and improve building functionality. Modernization offerings can range from relatively simple upgrades of interior finishes and aesthetics, to complex upgrades of larger components and sub-systems. Our typical Service customers include building owners, facility managers, housing associations and government agencies that operate buildings where elevators and escalators are installed.

Summary performance for Service for the years ended December 31, 2021, 2020 and 2019 was as follows:

(dollars in millions)	2021	2020	2019	Total Increase (Decrease) Year-Over-Year for:			
				2021 compared with 2020		2020 compared with 2019	
Net sales	\$ 7,870	\$ 7,385	\$ 7,470	\$ 485	6.6 %	\$ (85)	(1.1)%
Cost of sales	4,812	4,538	4,652	274	6.0 %	(114)	(2.5)%
	3,058	2,847	2,818	211	7.4 %	29	1.0 %
Operating expenses	1,296	1,236	1,215	60	4.9 %	21	1.7 %
Operating profit	\$ 1,762	\$ 1,611	\$ 1,603	\$ 151	9.4 %	\$ 8	0.5 %
Operating profit margin	22.4 %	21.8 %	21.5 %				

Summary analysis of the Net sales change for Service for the years ended December 31, 2021 and 2020 compared with the prior years was as follows:

Components of Net sales change:	2021	2020
Organic	4.1 %	(0.7)%
Foreign currency translation	2.3 %	(0.1)%
Acquisitions/Divestitures, net	0.2 %	(0.3)%
Total % change	6.6 %	(1.1)%

2021 Compared with 2020

Net Sales

The organic sales increase of 4.1% is due to organic sales increases in maintenance and repair of 4.5% and modernization of 2.5%.

Components of Net sales change:	Maintenance and Repair	Modernization
Organic	4.5 %	2.5 %
Foreign currency translation	2.2 %	1.9 %
Acquisitions/Divestitures, net	0.3 %	0.1 %
Total % change	7.0 %	4.5 %

Operating profit

Service operating profit increased \$151 million, primarily due to higher volume of \$120 million, with an operating margin increase of 60 basis points. Favorable pricing and mix and lower bad debt expense were partially offset by the absence of the benefit from prior year field actions taken in response to COVID-19. Foreign exchange tailwinds of \$35 million and lower restructuring expense of \$15 million were more than offset by higher selling general and administrative costs of \$60 million, including the impact from cost containment actions taken in the prior year.

2020 Compared with 2019

Net Sales

The organic sales decrease of (0.7)% is due to a sales decrease in maintenance and repair of (0.9)%, with modernization sales remaining flat.

Components of Net sales change:	Maintenance and Repair	Modernization
Organic	(0.9)%	0.1 %
Foreign currency translation	(0.1)%	0.1 %
Acquisitions/Divestitures, net	(0.2)%	(1.1)%
Total % change	(1.2)%	(0.9)%

Operating Profit

Service operating profit increased \$8 million, with an operating profit margin increase of 30 basis points. Favorable productivity, pricing and mix, and cost containment actions more than offset the combined impact of price concessions, lower volume and higher bad debt expense. Service operating profit was also favorably impacted by foreign currency, offset by higher restructuring costs and incremental public company standalone costs.

General Corporate Expenses and Other

(dollars in millions)	2021	2020	2019
General corporate expenses and other	\$ (113)	\$ (290)	\$ (182)

General corporate expenses and other decreased \$(177) million in 2021 compared to 2020, primarily due to the absence of a fixed asset impairment of \$(71) million and related licensing costs of \$(14) million recognized in 2020, as well as lower non-recurring Separation costs and the absence of UTC allocations of \$(108) million.

General corporate expenses and other increased \$108 million in 2020 compared to 2019, primarily driven by fixed asset impairments of \$71 million and associated license costs of approximately \$14 million, non-recurring Separation-related costs of \$119 million and incremental standalone public company costs in 2020. These were partially offset by favorable mark-to-market adjustments on foreign currency derivatives of \$46 million when compared to the prior period, the absence of losses on the sale of a business of \$19 million that occurred during 2019 and a non-recurring gain of approximately \$17 million related to an expected insurance recovery as a result of the fire in our manufacturing facility in Germany recognized in 2020.

LIQUIDITY AND FINANCIAL CONDITION

<i>(dollars in millions)</i>	December 31, 2021	December 31, 2020
Cash and cash equivalents	\$ 1,565	\$ 1,782
Total debt	7,273	5,963
Net debt (total debt less cash and cash equivalents)	5,708	4,181
Total equity	(3,144)	(3,395)
Total capitalization (total debt plus total equity)	4,129	2,568
Net capitalization (total debt plus total equity less cash and cash equivalents)	2,564	786
Total debt to total capitalization	176 %	232 %
Net debt to net capitalization	223 %	532 %

As of December 31, 2021, we had cash and cash equivalents of approximately \$1.6 billion, of which approximately 91% was held by the Company's foreign subsidiaries. We manage our worldwide cash requirements by reviewing available funds among the many subsidiaries through which we conduct our business and the cost effectiveness with which those funds can be accessed. On occasion, we are required to maintain cash deposits with certain banks with respect to contractual obligations related to acquisitions and divestitures or other legal obligations. As of December 31, 2021 and 2020, the amount of such restricted cash was approximately \$1.9 billion and \$19 million, respectively, including the proceeds from the issuance of debt that is restricted in order to fund the Tender Offer. See further discussion of debt issuances below.

From time-to-time we may need to access the capital markets to obtain financing. We may incur indebtedness or issue equity as needed. Although we believe that the arrangements in place as of December 31, 2021 permit us to finance our operations on acceptable terms and conditions, our access to, and the availability of, financing on acceptable terms and conditions in the future could be impacted by many factors, including (1) our credit ratings or absence of a credit rating, (2) the liquidity of the overall capital markets and (3) the current state of the economy, including the impact of COVID-19. There can be no assurance that we will continue to have access to the capital markets on terms acceptable to us.

The following is a summary of the long-term debt issuances in 2021 and 2020:

<i>(dollars in millions)</i>		
Issuance Date	Description of Debt	Aggregate Principal Balance
November 12, 2021	0.000% notes due 2023 (€500 million principal value)	\$ 572
November 12, 2021	0.318% notes due 2026 (€600 million principal value)	687
November 12, 2021	0.934% notes due 2031 (€500 million principal value)	572
March 11, 2021	0.37% notes due 2026 (¥21,500 million principal value)	199
March 27, 2020	LIBOR plus 112.5 bps term loan due 2023 (the "Term Loan")	1,000
February 27, 2020	LIBOR plus 45 bps floating rate notes due 2023	500
February 27, 2020	2.056% notes due 2025	1,300
February 27, 2020	2.293% notes due 2027	500
February 27, 2020	2.565% notes due 2030	1,500
February 27, 2020	3.112% notes due 2040	750
February 27, 2020	3.362% notes due 2050	750

The net proceeds from the February and March 2020 debt issuances listed above, totaling \$6.3 billion, were used to distribute cash to UTC as part of the Separation in 2020. The proceeds from the March 2021 issuance of Japanese Yen notes listed above were used to repay a portion of our outstanding Euro denominated commercial paper. The proceeds from the November 2021 issuance of the Euro notes listed above are held in escrow to fund the Tender Offer, which is reflected as Restricted cash on the Consolidated Balance Sheet as of December 31, 2021.

The following is a summary of the long-term debt repayments in 2021 and 2020:

(dollars in millions)

Payment Date	Description of Debt	Total Principal Payments
11-20-2020	LIBOR plus 112.5 bps term loan due 2023	\$ 250
09-28-2020	LIBOR plus 112.5 bps term loan due 2023	\$ 750

In 2020, we repaid the \$1.0 billion term loan in full, using cash from operations and proceeds from the issuance of Euro denominated and US Dollar denominated commercial paper. In 2021, the commercial paper was repaid in full, using cash from operations and proceeds from the issuance of the Japanese Yen notes. For additional discussion of borrowings, including commercial paper activity, see "Note 10: Borrowings and Lines of Credit" in Item 8 in this Form 10-K.

Following the enactment of the TCJA, and after reassessing as part of the Separation, the Company determined that it no longer intends to reinvest certain undistributed earnings of our international subsidiaries that have been previously taxed in the U.S. For the remainder of the Company's undistributed international earnings, unless tax effective to repatriate, we will continue to permanently reinvest these earnings.

We expect to fund our ongoing operating, investing and financing requirements mainly through cash flows from operations, available liquidity through cash on hand and available bank lines of credit and access to the capital markets.

On April 27, 2020, our Board of Directors authorized a share repurchase program for up to \$1.0 billion of Common Stock, of which approximately \$725 million has been utilized as of December 31, 2021. Under this program, shares may be purchased on the open market, in privately negotiated transactions, under accelerated share repurchase programs, or under plans complying with rules 10b5-1 and 10b-18 under the Securities Exchange Act of 1934, as amended. During 2021, the Company repurchased 9.7 million shares of Common Stock for approximately \$725 million. As a result of the increased debt incurred to fund the Tender Offer, we have temporarily suspended share repurchases as we focus on deleveraging.

Cash Flow - Operating Activities

(dollars in millions)

	2021	2020	2019
Net cash flows provided by operating activities	\$ 1,750	\$ 1,480	\$ 1,469

2021 Compared with 2020

Cash generated from operating activities in 2021 was \$270 million higher than in 2020, primarily due to higher net income of \$364 million and increased cash inflows related to current assets and current liabilities activity of \$83 million, as described below. These were partially offset by \$98 million of lower non-cash adjustments from Net income, including the absence of fixed asset impairments of \$71 million in 2020, as well as \$106 million of lower Other operating activities, net, primarily due to long-term accruals in 2020.

2021 Changes in Working Capital

The 2021 cash inflows related to current assets and current liabilities operating activity were \$160 million, including the following main drivers:

- Accounts payable, which increased by \$130 million, primarily due to increased volume;
- Accrued liabilities, which increased by \$72 million, primarily due to the timing of payments, which more than offset the payments of \$56 million in foreign tax obligations pursuant to the TMA and income tax liabilities in certain jurisdictions;
- Contract assets, current and Contract liabilities, current, net change of \$53 million, driven by the timing of billings on contracts compared to the progression on current contracts; and

- Other current assets, which decreased by \$43 million, primarily due to prepaid income tax utilization and indemnification payments received pursuant to the TMA in order to pay foreign tax obligations, partially offset by advanced payments to suppliers; partially offset by
- Accounts receivable, net, which increased by \$152 million, primarily due to increased volume.

2020 Compared with 2019

Cash generated from operating activities in 2020 was \$11 million higher than in 2019, primarily due to increased cash inflows related to current assets and current liabilities of \$109 million, as described below. There were also increased Other operating activities of \$106 million compared to the same period in 2019, primarily due to increased long-term accruals. These were partially offset by lower net income of \$211 million, which includes the impact of interest expense on debt, incremental standalone public company costs and non-recurring Separation-related costs in 2020.

2020 Changes in Working Capital

The 2020 cash inflows related to current assets and current liabilities operating activity were \$77 million. These cash inflows were primarily driven by:

- Net change in Contract assets, current and Contract liabilities, current of \$282 million, driven by the timing of billings on contracts compared to the progression on current contracts; and
- Accounts payable, which increased by \$20 million, primarily due to the timing of payments to suppliers; partially offset by
- Inventories, net, which increased by \$76 million due to the impact of higher production inventory levels related to the timing of deliveries to construction sites; and
- Accounts receivable, net, which increased by \$163 million due to slower collections and increased customer financing activity.

Additionally, Other current assets decreased by \$28 million due to receipt of indemnification payments pursuant to the TMA in order to pay foreign tax obligations, partially offset by tax prepayments in certain jurisdictions, while Accrued liabilities decreased \$14 million largely due to the payment of foreign tax obligations pursuant to the TMA described above and income tax liabilities in certain jurisdictions, partially offset by accruals for interest in excess of interest payments. The receipt and payment of indemnification assets and foreign tax obligations resulted in no net cash flow for 2020. See "Note 5: Related Parties" in Item 8 in this Form 10-K for further discussion on transactions with our former parent UTC.

Cash Flow - Investing Activities

<i>(dollars in millions)</i>	2021	2020	2019
Net cash flows used in investing activities	\$ (89)	\$ (353)	\$ (203)

Cash flows used in investing activities primarily reflect capital expenditures, investments in businesses and securities, proceeds received on the sale of fixed assets, and settlement of derivative contracts.

2021 compared to 2020

<i>(dollars in millions)</i>	2021	2020	Change
Investing Activities:			
Capital expenditures	\$ (156)	\$ (183)	\$ 27
Investments in businesses and intangible assets	(80)	(53)	(27)
Proceeds from sale of (investments in) equity securities	40	(51)	91
Receipts (payments) on settlements of derivative contracts	73	(69)	142
Other investing activities, net	34	3	31
Net cash flows used in investing activities	\$ (89)	\$ (353)	\$ 264

Cash flows used in investing activities in 2021 compared to 2020 decreased \$264 million, including the following main drivers:

- \$142 million higher net cash from the settlement of derivative instruments in 2021, with net cash receipts of \$73 million and payments of \$69 million in 2021 and 2020, respectively;
- \$91 million higher net cash from equity securities, including \$58 million of proceeds from the sale of equity securities in 2021, compared to \$(51) million of investments made in equity securities in 2020; and
- \$31 million higher Other investing activities, net primarily due to property damage insurance proceeds received and discussed below under "Germany Fire", as well as proceeds from the sales of fixed assets.

As discussed in Note 18, "Financial Instruments" to the Consolidated Financial Statements, we enter into derivative instruments for risk management purposes. We operate internationally and, in the normal course of business, are exposed to fluctuations in interest rates, foreign exchange rates and commodity prices. These fluctuations can increase the costs of financing, investing and operating the business. We use derivative instruments, including forward contracts and options, to manage certain foreign currency and commodity price exposures.

Germany Fire

As previously disclosed, during 2020 there was a fire at the Company's manufacturing facility in Germany. During 2021, the Company settled the related property damage claim with the insurance company, as reflected in Other investing activities, net in the Consolidated Statements of Cash Flows. During 2021, the Company also reached a final agreement with the insurance company related to the business interruption claim to cover costs incurred as a result of the fire and received the final payments during the year. The impact to our operations or financial results from this event was not material.

2020 compared to 2019

<i>(dollars in millions)</i>	2020	2019	Change
Investing Activities:			
Capital expenditures	\$ (183)	\$ (145)	\$ (38)
Investments in businesses and intangible assets	(53)	(47)	(6)
Proceeds from sale of (investments in) equity securities	(51)	—	(51)
Proceeds from sale of equity securities	—	—	—
Receipts (payments) on settlements of derivative contracts	(69)	(5)	(64)
Other investing activities, net	3	(6)	9
Net cash flows provided by (used in) investing activities	\$ (353)	\$ (203)	\$ (150)

Cash flows used in investing activities in 2020 compared to 2019 increased \$150 million, including the following drivers:

- \$64 million higher net cash payments from the settlement of derivative instruments in 2020, including \$21 million of payments associated with the hedges of foreign-denominated TMA indemnification assets;
- \$51 million of investments in 2020 related to equity securities;
- \$38 million higher capital expenditures; and
- \$6 million higher investments in business.

Cash Flow - Financing Activities

<i>(dollars in millions)</i>	2021	2020	2019
Net cash flows provided by (used in) financing activities	\$ 58	\$ (844)	\$ (1,133)

Financing activities primarily include increases or decreases to short-term borrowings, issuance or repayment of long-term debt, dividends paid to common shareholders, repurchases of Common Stock and dividends paid to non-controlling interests. The activity in 2020 and 2019 includes transfers to and from our former parent, UTC, prior to the Separation, consisting of, among other things, cash transfers, distributions, cash investments and changes in receivables and payables. For further discussion on these transfers, see "Note 5: Related Parties" in Item 8 in this Form 10-K.

2021 compared to 2020

<i>(dollars in millions)</i>	2021	2020	Change
Financing Activities:			
Increase (decrease) in short-term borrowings, net	\$ (655)	\$ 647	\$ (1,302)
Proceeds from issuance of long-term debt	2,030	6,300	(4,270)
Payment of debt issuance costs	(25)	(43)	18
Repayment of long-term debt	—	(1,000)	1,000
Dividends paid on Common Stock	(393)	(260)	(133)
Repurchases of Common Stock	(725)	—	(725)
Dividends paid to noncontrolling interest	(155)	(149)	(6)
Net transfers to UTC	—	(6,330)	6,330
Other financing activities, net	(19)	(9)	(10)
Net cash flows provided by (used in) financing activities	\$ 58	\$ (844)	\$ 902

Net cash provided by financing activities was \$58 million in 2021 compared to net cash used by financing activities of \$844 million in 2020, which changed primarily due to the following:

- Net borrowings of \$1.4 billion during 2021 compared to net repayments on borrowings of \$353 million during 2020. These were comprised of the following activities:
 - Net proceeds from the issuance of long-term debt of \$2.0 billion, partially offset by net repayments of short-term borrowings of \$655 million during 2021; and
 - Repayments of long-term debt of \$1.0 billion, partially offset by net short-term borrowings of \$647 million during 2020.
- Repurchases of Common Stock of \$725 million and higher dividends paid on Common Stock of \$133 million during 2021; and
- Net transfers to UTC related to the Separation of \$6.3 billion during 2020, which were primarily funded by the net proceeds from issuance of long-term debt of \$6.3 billion during 2020.

Net borrowings in 2021 include €1.6 billion in proceeds from the issuance of Euro denominated notes, which will be used to fund the Tender Offer. For additional discussion of borrowings activity, see "Note 10: Borrowings and Lines of Credit" in Item 8 in this Form 10-K.

2020 compared to 2019

<i>(dollars in millions)</i>	2020	2019	Change
Financing Activities:			
Increase (decrease) in short-term borrowings, net	\$ 647	\$ 6	\$ 641
Proceeds from issuance of long-term debt	6,300	—	6,300
Payment of debt issuance costs	(43)	—	(43)
Repayment of long-term debt	(1,000)	—	(1,000)
Dividends paid on Common Stock	(260)	—	(260)
Dividends paid to noncontrolling interest	(149)	(163)	14
Net transfers to UTC	(6,330)	(972)	(5,358)
Other financing activities, net	(9)	(4)	(5)
Net cash flows provided by (used in) financing activities	\$ (844)	\$ (1,133)	\$ 289

Net cash used in financing activities decreased \$289 million in 2020 compared to 2019 primarily due to the net proceeds from the issuance of long-term debt of \$6.3 billion in 2020, of which \$1.0 billion was repaid with \$641 million of proceeds from the issuance of short-term commercial paper in 2020 and cash from operations. These net inflows were partially offset by a \$5.4 billion increase in net transfers to UTC related to the Separation, and a \$260 million increase in dividends paid on Common Stock in 2020. See "Note 10: Borrowings and Lines of Credit" in Item 8 in this Form 10-K for further discussion on borrowings.

Guaranteed Securities: Summarized Financial Information

The following information is provided in compliance with Rule 13-01 of Regulation S-X under the Securities Exchange Act of 1934, as amended, with respect to the 2023 Euro Notes, the 2026 Euro Notes and the 2031 Euro Notes (together the "Euro Notes"), in each case issued by Highland Holdings S.à r.l. ("Highland"), a private limited liability company (*société à responsabilité limitée*) incorporated and existing under the laws of the Grand Duchy of Luxembourg ("Luxembourg"). The Euro Notes are fully and unconditionally guaranteed by Otis Worldwide Corporation ("OWC") on an unsecured, unsubordinated basis. Refer to "Note 10: Borrowings and Lines of Credit" in Item 8 in this Form 10-K for additional information.

Highland is a wholly-owned, indirect consolidated subsidiary of OWC. OWC is incorporated under the laws of Delaware. As a company incorporated and existing under the laws of Luxembourg, and with its registered office in Luxembourg, Highland is subject to Luxembourg insolvency and bankruptcy laws in the event any insolvency proceedings are initiated against it. Luxembourg bankruptcy law is significantly different from, and may be less favorable to creditors than, the bankruptcy law in effect in the United States and may make it more difficult for creditors to recover the amount they could expect to recover in liquidation under U.S. insolvency and bankruptcy rules.

The Euro Notes are not guaranteed by any of OWC's or Highland's subsidiaries (all OWC subsidiaries other than Highland are referred to herein as "non-guarantor subsidiaries"). Holders of the Euro Notes will have a direct claim only against Highland, as issuer, and OWC, as guarantor.

The following tables set forth the summarized financial information as of and for the years ended December 31, 2021 and 2020 of each of OWC and Highland on a standalone basis, which does not include the consolidated impact of the assets, liabilities, and financial results of their subsidiaries except as noted on the tables below, nor does it include any impact of intercompany eliminations as there were no intercompany transactions between OWC and Highland. This summarized financial information is not intended to present the financial position or results of operations of OWC or Highland in accordance with U.S. GAAP.

<i>(dollars in millions)</i>	Year Ended December 31,	
	2021	2020
OWC Statement of Operations - Standalone and Unconsolidated		
Revenue	\$ —	\$ —
Cost of revenue	—	—
Operating expenses	13	10
Income from consolidated subsidiaries	19	4
Income (loss) from operations excluding income from consolidated subsidiaries	(18)	(2)
Net income (loss) excluding income from consolidated subsidiaries	(116)	(100)

<i>(dollars in millions)</i>	As of December 31,	
	2021	2020
OWC Balance Sheet - Standalone and Unconsolidated		
Current assets (excluding intercompany receivables from non-guarantor subsidiaries)	\$ 197	\$ 307
Current assets (intercompany receivables from non-guarantor subsidiaries)	—	—
Noncurrent assets, investments in consolidated subsidiaries	1,271	1,348
Noncurrent assets (excluding investments in consolidated subsidiaries)	48	62
Current liabilities (intercompany payables to non-guarantor subsidiaries)	1,516	139
Current liabilities (excluding intercompany payables to non-guarantor subsidiaries)	73	721
Noncurrent liabilities	5,725	5,540

<i>(dollars in millions)</i>	Year Ended December 31,	
	2021	2020
Highland Statement of Operations - Standalone and Unconsolidated		
Revenue	\$ —	\$ —
Cost of revenue	—	—
Operating expenses	—	—
Income from consolidated subsidiaries	635	445
Income (loss) from operations excluding income from consolidated subsidiaries	—	—
Net income (loss) excluding income from consolidated subsidiaries	(3)	(1)

<i>(dollars in millions)</i>	As of December 31,	
	2021	2020
Highland Balance Sheet - Standalone and Unconsolidated		
Current assets (excluding intercompany receivables from non-guarantor subsidiaries)	\$ —	\$ —
Current assets (intercompany receivables from non-guarantor subsidiaries)	2	87
Noncurrent assets (investments in consolidated subsidiaries)	12,524	11,251
Noncurrent assets (excluding investments in consolidated subsidiaries)	—	—
Current liabilities (intercompany payables to non-guarantor subsidiaries)	171	318
Current liabilities (excluding intercompany payables to non-guarantor subsidiaries)	2	1
Noncurrent liabilities	1,795	—

CRITICAL ACCOUNTING ESTIMATES

Preparation of the consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses. "Note 2: Summary of Significant Accounting Policies" in Item 8 in this Form 10-K describes the significant accounting policies used in preparation of the Consolidated Financial Statements. Management believes the most complex and sensitive judgments, because of their significance to the Consolidated Financial Statements, result primarily from the need to make estimates about the effects of matters that are inherently uncertain. The most significant areas involving management judgments and estimates are described below. Actual results in these areas could differ from management's estimates.

Revenue Recognition from Contracts with Customers

We recognized revenue in accordance with FASB ASC Topic 606: *Revenue from Contracts with Customers* and its related amendments, (referred to, collectively, as "ASC 606"). For new equipment and modernization contracts, equipment and installation are typically procured in a single contract providing the customer with a complete installed elevator or escalator unit. The combination of equipment and installation promises are typically a single performance obligation. For these performance obligations, revenue is recognized over time using costs incurred to date relative to total estimated costs at completion to measure progress. Contract costs are usually incurred over a period of time, which can be several years, and the estimation of these costs requires management's judgment. Contract costs included in the calculation are comprised of labor, materials, subcontractors' costs or other direct costs and indirect costs, which include indirect labor costs.

The long-term nature of the contracts, the complexity of the products and the scale of the projects can affect our ability to estimate costs precisely. We review cost estimates on significant new equipment and modernization contracts on a quarterly basis and, for others, no less frequently than annually or when circumstances change and warrant a modification to a previous estimate. We record changes in contract estimates using the cumulative catch-up method and we review changes in contract estimates for their impact on net sales or operating profit in the Consolidated Financial Statements. Modifications are recognized as a cumulative catch-up or treated as a separate accounting contract if the modification adds distinct goods or services and the modification is priced at its stand-alone selling price.

See "Note 2: Summary of Significant Accounting Policies" in Item 8 in this Form 10-K.

Income Taxes

The future tax benefit arising from deductible temporary differences and tax carryforwards was \$647 million as of December 31, 2021 and \$642 million as of December 31, 2020. Management estimates that our earnings during the periods when the temporary differences become deductible will be generally sufficient to realize the related future income tax benefits, which may be realized over an extended period of time. For those jurisdictions where the expiration date of tax carryforwards or the projected operating results indicate that realization is not likely, a valuation allowance is provided.

In assessing the need for a valuation allowance, we estimate future taxable income, considering the feasibility of ongoing tax planning strategies and the realizability of tax loss carryforwards. Valuation allowances related to deferred tax assets can be affected by changes to tax laws, changes to statutory tax rates and future taxable income levels. In the event we were to determine that we would not be able to realize all or a portion of our deferred tax assets in the future, we would reduce such amounts through an increase to tax expense in the period in which that determination is made or when tax law changes are enacted. Conversely, if we were to determine that we would be able to realize our deferred tax assets in the future in excess of the net carrying amounts, we would decrease the recorded valuation allowance through a decrease to tax expense in the period in which that determination is made.

In the ordinary course of business there is inherent uncertainty in quantifying our income tax positions. We assess our income tax positions and record tax benefits for all years subject to examination based upon management's evaluation of the facts, circumstances and information available at the reporting date. For those tax positions where it is more likely than not that a tax benefit will be sustained, we have recorded the largest amount of tax benefit with a greater than 50% likelihood of being realized upon ultimate settlement with a taxing authority that has full knowledge of all relevant information. For those income tax positions where it is not more likely than not that a tax benefit will be sustained, no tax benefit has been recognized in the Consolidated Financial Statements. See "Note 3: Earnings Per Share" and "Note 15: Accumulated Other Comprehensive Income (Loss)" in Item 8 in this Form 10-K for further discussion. Additionally, see "Note 22: Contingent Liabilities" in Item 8 in this Form 10-K for discussion of administrative review proceedings with the German Tax Office.

Goodwill

We have generated goodwill as a result of our acquisitions. At the time of acquisition, we account for business acquisitions using the purchase method of accounting, in accordance with which assets acquired and liabilities assumed are recorded at their respective fair values at the acquisition date. The fair value of the consideration paid, including contingent consideration, is assigned to the assets acquired and liabilities assumed based on their respective fair values. Goodwill represents the excess of the purchase price over the estimated fair values of the assets acquired and liabilities assumed.

We review our goodwill for impairment on an annual basis at July 1 or more frequently if events or a change in circumstances indicate that the carrying amount may not be recoverable. We test goodwill for impairment at a level within the Company referred to as the reporting unit, which is one level below the operating segment level. We have determined there to be three reporting units within each business segment.

In accordance with Accounting Standards Codification ("ASC") 350, *Intangibles – Goodwill and Other*, we initially perform a qualitative assessment (commonly known as "step zero") to determine whether further impairment testing is necessary before performing the two-step test. The qualitative assessment requires judgments by management about economic conditions including the entity's operating environment, its industry and other market considerations, entity-specific events related to financial performance or loss of key personnel and other events that could impact the reporting unit. If management concludes, based on assessment of relevant events, facts and circumstances, that it is more likely than not that a reporting unit's fair value is greater than its carrying value, no further impairment testing is required. If we determine, based on this assessment, that it is more likely than not that the fair value of the reporting unit is less than its carrying value, we perform a quantitative goodwill impairment test by comparing the reporting unit's fair value with its carrying value. An impairment loss is recognized for the amount by which the reporting unit's carrying value exceeds its fair value, up to the total amount of goodwill allocated to the reporting unit. No impairment loss is recognized if the fair value of the reporting exceeds its carrying value.

We completed the annual goodwill impairment test for all of our reporting units as of July 1, 2021 and determined that no adjustment to goodwill was necessary as the fair value of each reporting unit was in excess of the carrying value of each reporting unit.

Contingent Liabilities

Otis is party to litigation related to a number of matters as described in "Note 22: Contingent Liabilities" in Item 8 in this Form 10-K. In particular, they may include risks associated with contractual, regulatory and other matters, which may arise in the ordinary course of business. The outcome of these matters may have a material effect on the financial position, results of operations or cash flows. Management regularly analyzes current information about these matters and accrues for contingent losses that are probable and reasonably estimable. To assess the exposure to potential liability, we consult with relevant internal and external counsel. In making the decision regarding the need for loss accruals, management considers the degree of probability of an unfavorable outcome and the ability to make a sufficiently reliable estimate of the amount of loss. See Part I, Item 1A in this Form 10-K for further discussion.

Employee Benefit Plans

We sponsor domestic and international defined benefit pension and other postretirement plans. Major assumptions used in the accounting for these employee benefit plans include the discount rate, expected return on plan assets, rate of increase in employee compensation levels and mortality rates. Assumptions are determined based on company data and appropriate market indicators, and are evaluated each year as of December 31. A change in any of these assumptions would have an effect on net periodic pension and postretirement benefit costs reported in the Consolidated Financial Statements.

In the following table, we show the sensitivity of our pension and other postretirement benefit plan liabilities and net periodic cost to a 25 basis point change in the discount rates for benefit obligations, as of December 31, 2021:

<i>(dollars in millions)</i>	Increase in Discount Rate of 25 bps	Decrease in Discount Rate of 25 bps
Pension plans		
Projected benefit obligation	\$ (29)	\$ 30
Net periodic pension (benefit) cost	(2)	2

The impact on the accumulated postretirement benefit obligation and on the net periodic postretirement (benefit) cost is less than \$1 million.

Pension expense is also sensitive to changes in the expected long-term rate of asset return. An increase or decrease of 25 basis points in the expected long-term rate of asset return would have decreased or increased 2021 pension expense by approximately \$2 million.

The weighted-average discount rates used to measure pension liabilities and costs utilize each plan's specific cash flows and are then compared to high-quality bond indices for reasonableness. Global market interest rates increased in 2021 as compared with 2020, and, as a result, the weighted-average discount rate used to measure pension liabilities was 1.5% in 2021 and 1.1% in 2020.

See "Note 13: Employee Benefit Plans" in Item 8 in this Form 10-K for further discussion.

Off-Balance Sheet Arrangements and Contractual Obligations

We extend a variety of financial guarantees to third parties in support of our business. We also have obligations arising from environmental, health and safety, tax and employment matters. Circumstances that could cause the contingent obligations and liabilities arising from these arrangements to come to fruition include changes in the underlying transaction, non-performance under a contract or deterioration in the financial condition of the guaranteed party.

Otis' contractual obligations and commitments as of December 31, 2021 are discussed below. See also "Note 13: Employee Benefit Plans" in Item 8 of this Form 10-K for further discussion of our expected pension and postretirement contributions.

Long-term Debt

See "Note 10: Borrowings and Lines of Credit" in Item 8 of this Form 10-K for further discussion of our long-term debt principal payments as of December 31, 2021. In the following table, we show the timing of payments of interest on long-term debt as of December 31, 2021:

(dollars in millions)	Total	Payments Due by Period			
		2022	2023-2024	2025-2026	Thereafter
Long-term debt - future interest	\$ 1,705	\$ 137	\$ 267	\$ 226	\$ 1,075

Purchase Obligations

Purchase obligations include amounts committed for the purchase of goods and services under legally enforceable contracts or purchase orders. Where it is not practically feasible to determine the legally enforceable portion of our obligation under certain of our long-term purchase agreements, we include additional expected purchase obligations beyond what may be legally enforceable. We enter into contractual purchase commitments with suppliers and service vendors to support our information technology that are either necessary to operate our business or are resulting from implementing strategic initiatives. In the following table, we show the timing of payments of total purchase obligations as of December 31, 2021:

(dollars in millions)	Total	Payments Due by Period			
		2022	2023-2024	2025-2026	Thereafter
Purchase obligations	\$ 1,192	\$ 1,134	\$ 51	\$ 6	\$ 1

Other Long-term Liabilities

Other long-term liabilities in the table below includes obligations relate to product service and warranty policies, estimated remediation costs and contractual indemnities, and are included in Other long-term liabilities on the "Consolidated Balance Sheets" in Item 8 of this Form 10-K. The timing of expected cash flows associated with these obligations is based upon management's estimates over the terms of these agreements and is largely based upon historical experience and were as follows as of December 31, 2021:

(dollars in millions)	Total	Payments Due by Period			
		2022	2023-2024	2025-2026	Thereafter
Other long-term liabilities	\$ 341	\$ 18	\$ 115	\$ 139	\$ 69

The balance above includes \$220 million of long-term contractual payables due to RTX for reimbursement of tax payments that RTX is responsible to pay after the Separation pursuant to the TMA. Otis will reimburse RTX for those tax payments through 2027.

Unrecognized Tax Benefits

Otis has unrecognized tax benefits of \$392 million as of December 31, 2021, the timing of which is uncertain to become payable. See "Note 16: Income Taxes" in Item 8 in this Form 10-K for additional discussion on unrecognized tax benefits.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to fluctuations in foreign currency exchange rates and commodity prices. To manage certain of those exposures, we use derivative instruments, including forward contracts. Derivative instruments utilized by us in our hedging activities are viewed as risk management tools, involve relatively little complexity and are not used for trading or speculative purposes. We diversify the counterparties used and monitor the concentration of risk to limit our counterparty exposure.

We have evaluated our exposure to changes in foreign currency exchange rates, commodity prices and interest rates in our market risk sensitive instruments, which are primarily cash, debt and derivative instruments, using a value at risk analysis. Based on a 95% confidence level and one-day holding period, as of December 31, 2021, the potential loss in fair value on our market risk sensitive instruments was not material in relation to our financial position, results of operations or cash flows. Our calculated value at risk exposure represents an estimate of reasonably possible net losses based on volatilities and correlations, and is not necessarily indicative of actual results. Additionally, any losses or gains on derivative instruments would be mostly offset by corresponding gains or losses in the remeasurement of the underlying transactions being hedged.

Refer to "Note 2: Summary of Significant Accounting Policies", "Note 10: Borrowings and Lines of Credit" and "Note 18: Financial Instruments" in Item 8 in this Form 10-K for additional discussion of foreign currency exchange, interest rates and financial instruments, including the aggregate notional amount of our outstanding foreign currency and commodity price hedges.

Foreign Currency Exposures

The value of certain foreign currencies as compared to the U.S. Dollar may impact Otis' financial results. We have a high volume of foreign currency exposures that result from our international sales, purchases, investments and other international transactions. International sales were approximately \$10.6 billion, \$9.3 billion and \$9.5 billion in 2021, 2020 and 2019, respectively. We manage foreign currency exposures that are associated with committed foreign currency purchases and sales as well as foreign currency denominated assets and liabilities that are created in the ordinary course of business. More than insignificant exposures, that cannot be naturally offset, are generally hedged with foreign currency derivatives.

For our non-U.S. based entities, a substantial portion of revenues are generated and costs are incurred in local currencies. We transact business in various foreign currencies, which exposes our cash flows and earnings to changes in foreign currency exchange rates. We periodically enter into sales contracts denominated in currencies other than the functional currency of the parties to the transaction, which can create foreign exchange exposure. While the objective of the hedging program is to minimize the foreign currency exchange impact on operating results, there are typically variances between the hedging gains or losses and the translational impact due to the length of hedging contracts, changes in the sales profile, volatility in the exchange rates and other such operational considerations. Otis does not enter into hedging contracts for speculative purposes.

As discussed in "Note 18: Financial Instruments" in Item 8 in this Form 10-K, as of December 31, 2021 we have ¥21.5 billion (\$189 million) of Japanese Yen denominated long-term debt, which qualifies as a net investment hedge against our investments in Japanese businesses. As of December 31, 2021, the net investment hedge is deemed to be effective.

As discussed in "Note 10: Borrowings and Lines of Credit" in Item 8 in this Form 10-K, as of December 31, 2021 we have €1,600 million (\$1,807 million) of Euro denominated long-term debt.

Commodity Price Risk

The fluctuation in prices of certain raw materials may impact Otis' financial results. We are exposed to volatility in the prices of commodities used in some of our products and component parts, such as steel, aluminum and copper, among others. When possible and appropriate, we maintain fixed price contracts on raw materials and component parts. However, we are prone to exposure as these contracts expire. When possible and appropriate, we also include price escalation linked to commodity prices in contracts with our customers and take pricing actions for future contracts. However, products and services delivered to our customers are often provided a year or more after being agreed to, and not all raw material price increases can be passed along to customers with existing contracts. Therefore, when commodity price risk is not mitigated by other methods, we may enter into hedging contracts. Otis does not enter into hedging contracts for speculative purposes.

Interest Rate Risk

Our long-term debt portfolio primarily consists of fixed-rate instruments. For any variable rate debt, interest rate changes in the London Interbank Offered Rate ("LIBOR") will impact future earnings and cash flows. From time to time, we may hedge floating rates using interest rate swaps. The hedges would be designated as fair value hedges and the gains and losses on the swaps would be reported in interest expense, reflecting that portion of interest expense at a variable rate.

For information concerning market risk sensitive instruments, see discussion under the headings "Foreign Exchange Exposures" and "Derivatives and Hedging Activity" in "Note 2: Summary of Accounting Policies," as well as "Note 18: Financial Instruments" in Item 8 in this Form 10-K for additional discussion on unrecognized tax benefits.

Item 8. Financial Statements and Supplementary Data

**INDEX TO CONSOLIDATED FINANCIAL STATEMENTS AND
FINANCIAL STATEMENT SCHEDULE**

	Page
<u>Management's Report on Internal Control Over Financial Reporting</u>	<u>53</u>
<u>Report of Independent Registered Public Accounting Firm (PCAOB ID 238)</u>	<u>54</u>
<u>Consolidated Statements of Operations for the years ended December 31, 2021, 2020 and 2019</u>	<u>56</u>
<u>Consolidated Statements of Comprehensive Income for the years ended December 31, 2021, 2020 and 2019</u>	<u>57</u>
<u>Consolidated Balance Sheets as of December 31, 2021 and 2020</u>	<u>58</u>
<u>Consolidated Statements of Changes in Equity for the years ended December 31, 2021, 2020 and 2019</u>	<u>59</u>
<u>Consolidated Statements of Cash Flows for the years ended December 31, 2021, 2020 and 2019</u>	<u>60</u>
<u>Notes to Consolidated Financial Statements</u>	<u>61</u>
<u>Financial Statement Schedule - Schedule II — Valuation and Qualifying Accounts for the years ended December 31, 2021, 2020 and 2019</u>	<u>101</u>

(All other schedules are not required and have been omitted)

Management's Report on Internal Control over Financial Reporting

The management of Otis is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with accounting principles generally accepted in the United States of America. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements.

Management has assessed the effectiveness of Otis' internal control over financial reporting as of December 31, 2021. In making its assessment, management has utilized the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control - Integrated Framework* (2013). Management concluded that based on its assessment, Otis' internal control over financial reporting was effective as of December 31, 2021. The effectiveness of Otis' internal control over financial reporting, as of December 31, 2021, has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included herein.

OTIS WORLDWIDE CORPORATION (Registrant)

by: /s/ JUDITH F. MARKS
 Judith F. Marks
 Chair, President and Chief Executive Officer

by: /s/ RAHUL GHAI
 Rahul Ghai
 Executive Vice President and Chief Financial Officer

by: /s/ MICHAEL P. RYAN
 Michael P. Ryan
 Vice President and Chief Accounting Officer

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Otis Worldwide Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Otis Worldwide Corporation and its subsidiaries (the “Company”) as of December 31, 2021 and 2020, and the related consolidated statements of operations, of comprehensive income, of changes in equity and of cash flows for each of the three years in the period ended December 31, 2021, including the related notes and financial statement schedule listed in the accompanying index (collectively referred to as the “consolidated financial statements”). We also have audited the Company's internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Revenue Recognition - Estimated Costs at Completion for New Equipment Contracts

As described in Notes 2 and 23 to the consolidated financial statements, the Company recognized \$6.4 billion of revenue from new equipment contracts for the year ended December 31, 2021. For new equipment contracts, equipment and installation are typically procured in a single contract providing the customer with a complete installed elevator or escalator unit. The combination of equipment and installation promises are typically a single performance obligation. For these performance obligations, revenue is recognized over time using costs incurred to date relative to total estimated costs at completion to measure progress. As disclosed by management, contract costs are usually incurred over a period of time, which can be several years, and the estimation of these costs requires management's judgment. The long-term nature of the contracts, the complexity of the products and the scale of the projects can affect management's ability to estimate costs precisely. Management reviews cost estimates on significant new equipment contracts on a quarterly basis and, for others, no less frequently than annually or when circumstances change and warrant a modification to a previous estimate. Management records changes in contract estimates using the cumulative catch-up method and reviews changes in contract estimates for their impact on net sales or operating profit in the consolidated financial statements. Contract costs included in the calculation are comprised of labor, materials, subcontractors' costs or other direct costs and indirect costs, which include indirect labor costs.

The principal considerations for our determination that performing procedures relating to revenue recognition - estimated costs at completion for new equipment contracts is a critical audit matter are the significant judgment by management to determine the estimated costs at contract completion, which in turn led to significant auditor judgment, subjectivity and effort in performing procedures and evaluating audit evidence related to the estimated expected labor and indirect labor costs used in the development of estimated costs at contract completion.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the revenue recognition process, including controls over the determination of the estimated costs at contract completion and development of the significant assumptions related to the estimated expected labor and indirect labor costs. These procedures also included, among others, evaluating and testing management's process for developing and modifying estimated costs at contract completion for a sample of contracts, which included evaluating the reasonableness of significant assumptions related to the estimated expected labor and indirect labor costs considered by management specific to each contract. Evaluating the reasonableness of the estimated expected labor and indirect labor costs involved assessing management's ability to reasonably estimate costs at completion by (i) testing costs incurred to date and obtaining a sample of executed contracts and related change orders, (ii) performing a comparison of the margin, driven by the estimated and actual costs incurred, to that of similar completed equipment contracts, and (iii) evaluating the timely identification of circumstances that may warrant a modification to estimated total cost to complete.

/s/ PricewaterhouseCoopers LLP
Hartford, Connecticut
February 4, 2022

We have served as the Company's auditor since 2019.

OTIS WORLDWIDE CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS

(dollars in millions, except per share amounts)

	2021	2020	2019
Net sales:			
Product sales	\$ 6,428	\$ 5,371	\$ 5,648
Service sales	7,870	7,385	7,470
	<u>14,298</u>	<u>12,756</u>	<u>13,118</u>
Costs and expenses:			
Cost of products sold	5,293	4,439	4,640
Cost of services sold	4,812	4,538	4,652
Research and development	159	152	163
Selling, general and administrative	1,948	1,924	1,810
	<u>12,212</u>	<u>11,053</u>	<u>11,265</u>
Other income (expense), net	22	(64)	(39)
Operating profit	<u>2,108</u>	<u>1,639</u>	<u>1,814</u>
Non-service pension cost (benefit)	11	6	(33)
Interest expense (income), net	136	122	(14)
Net income before income taxes	<u>1,961</u>	<u>1,511</u>	<u>1,861</u>
Income tax expense	541	455	594
Net income	<u>1,420</u>	<u>1,056</u>	<u>1,267</u>
Less: Noncontrolling interest in subsidiaries' earnings	174	150	151
Net income attributable to Otis Worldwide Corporation	<u><u>\$ 1,246</u></u>	<u><u>\$ 906</u></u>	<u><u>\$ 1,116</u></u>
Earnings per share (Note 3):			
Basic	\$ 2.91	\$ 2.09	\$ 2.55
Diluted	\$ 2.89	\$ 2.08	\$ 2.55
Weighted average number of shares outstanding			
Basic shares	427.7	433.2	433.1
Diluted shares	431.4	434.6	433.1

See accompanying Notes to Consolidated Financial Statements.

OTIS WORLDWIDE CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

<i>(dollars in millions)</i>	2021	2020	2019
Net income	\$ 1,420	\$ 1,056	\$ 1,267
Other comprehensive income (loss):			
Foreign currency translation adjustments, net of tax	(53)	8	(26)
Pension and postretirement benefit plan adjustments:			
Net actuarial gain (loss)	71	(43)	(28)
Amortization of actuarial loss and prior service credit	18	15	9
Other	13	(19)	(22)
	102	(47)	(41)
Tax benefit (expense)	(27)	11	9
Pension and postretirement benefit plan adjustments, net of tax	75	(36)	(32)
Change in unrealized cash flow hedging:			
Unrealized cash flow hedging gain (loss)	(1)	10	(3)
Adjustment for net (gain) loss realized and included in net income	4	(3)	—
Change in unrealized cash flow hedging, net of tax	3	7	(3)
Other comprehensive income (loss), net of tax	25	(21)	(61)
Comprehensive income	1,445	1,035	1,206
Less: Comprehensive income attributable to noncontrolling interest	(147)	(186)	(140)
Comprehensive income attributable to Otis Worldwide Corporation	\$ 1,298	\$ 849	\$ 1,066

See accompanying Notes to Consolidated Financial Statements.

OTIS WORLDWIDE CORPORATION
CONSOLIDATED BALANCE SHEETS

<i>(dollars in millions)</i>	2021	2020
<u>Assets</u>		
Cash and cash equivalents	\$ 1,565	\$ 1,782
Restricted cash	1,910	17
Accounts receivable (net of allowance for expected credit losses of \$175 and \$161)	3,232	3,148
Contract assets	550	458
Inventories, net	622	659
Other current assets	382	429
Total Current Assets	8,261	6,493
Future income tax benefits	335	334
Fixed assets, net	774	774
Operating lease right-of-use assets	526	542
Intangible assets, net	419	484
Goodwill	1,667	1,773
Other assets	297	310
Total Assets	\$ 12,279	\$ 10,710
<u>Liabilities and (Deficit) Equity</u>		
Short-term borrowings	\$ 24	\$ 701
Accounts payable	1,556	1,453
Accrued liabilities	1,993	1,977
Contract liabilities	2,674	2,542
Total Current Liabilities	6,247	6,673
Long-term debt	7,249	5,262
Future pension and postretirement benefit obligations	558	654
Operating lease liabilities	336	367
Future income tax obligations	267	321
Other long-term liabilities	606	634
Total Liabilities	15,263	13,911
Commitments and contingent liabilities (Note 22)		
Redeemable noncontrolling interest	160	194
Shareholders' (Deficit) Equity:		
Common Stock and additional paid-in-capital	119	59
Treasury Stock	(725)	—
Accumulated deficit	(2,256)	(3,106)
Accumulated other comprehensive income (loss)	(763)	(815)
Total Shareholders' (Deficit) Equity	(3,625)	(3,862)
Noncontrolling interest	481	467
Total (Deficit) Equity	(3,144)	(3,395)
Total Liabilities and (Deficit) Equity	\$ 12,279	\$ 10,710

See accompanying Notes to Consolidated Financial Statements.

OTIS WORLDWIDE CORPORATION
CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

<i>(dollars in millions, except per share amounts)</i>	Common Stock and Additional Paid-In Capital	Treasury Stock	Accumulated Deficit	UTC Net Investment (Deficit)	Accumulated Other Comprehensive Income (Loss)	Total Shareholders' (Deficit) Equity	Noncontrolling Interest	Total (Deficit) Equity	Redeemable Noncontrolling Interest
Balance as of January 1, 2019	\$ —	\$ —	\$ —	\$ 2,262	\$ (708)	\$ 1,554	\$ 458	\$ 2,012	\$ 203
Net transfers (to) from UTC	—	—	—	(935)	—	(935)	—	(935)	—
Net income	—	—	—	1,116	—	1,116	147	1,263	4
Other comprehensive income (loss), net of tax	—	—	—	—	(50)	(50)	(9)	(59)	(2)
Dividends attributable to noncontrolling interest	—	—	—	—	—	—	(146)	(146)	(17)
Acquisitions, disposals and other changes	—	—	—	(13)	—	(13)	6	(7)	10
Balance as of December 31, 2019	\$ —	\$ —	\$ —	\$ 2,430	\$ (758)	\$ 1,672	\$ 456	\$ 2,128	\$ 198
Adoption of credit loss standard, net of tax (Note 2)	—	—	—	(25)	—	(25)	—	(25)	—
Net transfers (to) from UTC and Separation-related transactions	—	—	—	(6,150)	—	(6,150)	—	(6,150)	—
Issuance of Common Stock and reclassification of deficit	4	—	(3,584)	3,580	—	—	—	—	—
Net income	—	—	741	165	—	906	138	1,044	12
Other comprehensive income (loss), net of tax	—	—	—	—	(57)	(57)	34	(23)	2
Stock-based compensation and Common Stock issued under employer plans	55	—	—	—	—	55	—	55	—
Cash dividends declared (\$0.60 per Common Share)	—	—	(260)	—	—	(260)	—	(260)	—
Dividends attributable to noncontrolling interest	—	—	—	—	—	—	(138)	(138)	—
Acquisitions, disposals and other changes	—	—	(3)	—	—	(3)	(23)	(26)	(9)
Balance as of December 31, 2020	\$ 59	\$ —	\$ (3,106)	\$ —	\$ (815)	\$ (3,862)	\$ 467	\$ (3,395)	\$ 194
Net income	—	—	1,246	—	—	1,246	163	1,409	11
Other comprehensive income (loss), net of tax	—	—	—	—	52	52	(15)	37	(12)
Stock-based compensation and Common Stock issued under employer plans	62	—	(2)	—	—	60	—	60	—
Cash dividends declared (\$0.92 per Common Share)	—	—	(393)	—	—	(393)	—	(393)	—
Repurchase of Common Shares	—	(725)	—	—	—	(725)	—	(725)	—
Dividends attributable to noncontrolling interest	—	—	—	—	—	—	(145)	(145)	(11)
Acquisitions, disposals and other changes	(2)	—	(1)	—	—	(3)	11	8	(22)
Balance as of December 31, 2021	\$ 119	\$ (725)	\$ (2,256)	\$ —	\$ (763)	\$ (3,625)	\$ 481	\$ (3,144)	\$ 160

See accompanying Notes to Consolidated Financial Statements.

OTIS WORLDWIDE CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS

<i>(dollars in millions)</i>	2021	2020	2019
Operating Activities:			
Net income	\$ 1,420	\$ 1,056	\$ 1,267
Adjustments to reconcile net income to net cash flows provided by operating activities, net of acquisitions:			
Depreciation and amortization	203	191	180
Deferred income tax expense (benefit)	(92)	(51)	(8)
Stock compensation cost	65	63	37
Losses on fixed asset impairment or disposal of business	—	71	26
Change in:			
Accounts receivable, net	(152)	(163)	(191)
Contract assets and liabilities, current	53	282	97
Inventories, net	14	(76)	60
Other current assets	43	28	30
Accounts payable	130	20	6
Accrued liabilities	72	(14)	(34)
Pension contributions	(37)	(64)	(32)
Other operating activities, net	31	137	31
Net cash flows provided by operating activities	1,750	1,480	1,469
Investing Activities:			
Capital expenditures	(156)	(183)	(145)
Investments in businesses and intangible assets, net of cash acquired (Note 9)	(80)	(53)	(47)
Proceeds from sale of (investments in) equity securities	40	(51)	—
Receipts (payments) on settlements of derivative contracts	73	(69)	(5)
Other investing activities, net	34	3	(6)
Net cash flows used in investing activities	(89)	(353)	(203)
Financing Activities:			
Net proceeds from (repayments of) borrowings (maturities of 90 days or less)	(304)	647	6
Proceeds from borrowings (maturities longer than 90 days)	152	—	—
Repayments of borrowings (maturities longer than 90 days)	(503)	—	—
Proceeds from issuance of long-term debt	2,030	6,300	—
Payment of debt issuance costs	(25)	(43)	—
Repayment of long-term debt	—	(1,000)	—
Dividends paid on Common Stock	(393)	(260)	—
Repurchases of Common Stock	(725)	—	—
Dividends paid to noncontrolling interest	(155)	(149)	(163)
Net transfers to UTC	—	(6,330)	(972)
Other financing activities, net	(19)	(9)	(4)
Net cash flows provided by (used in) financing activities	58	(844)	(1,133)
Effect of foreign exchange rate changes on cash and cash equivalents	(43)	59	(20)
Net increase in cash and cash equivalents	1,676	342	113
Cash, cash equivalents and restricted cash, beginning of year	1,801	1,459	1,346
Cash, cash equivalents and restricted cash, end of year	3,477	1,801	1,459
Less: Restricted cash	1,912	19	13
Cash and cash equivalents, end of period	\$ 1,565	\$ 1,782	\$ 1,446
Supplemental cash flow information:			
Interest paid (including related party interest of \$0, \$0 and \$18)	\$ 129	\$ 81	\$ 18
Income taxes paid, net of (refunds) (including related party of \$0, \$(15) and \$255)	552	561	632

See accompanying Notes to Consolidated Financial Statements.

Note 1: Business Overview

Otis (as defined below) is the world's largest elevator and escalator manufacturing, installation and service company. Our operations are classified into two segments: New Equipment and Service. Through the New Equipment segment, we design, manufacture, sell and install a wide range of passenger and freight elevators, as well as escalators and moving walkways, for residential and commercial building and infrastructure projects. The Service segment provides maintenance and repair services for both our products and those of other manufacturers, and provides modernization services to upgrade elevators and escalators.

On November 26, 2018, United Technologies Corporation, subsequently renamed to Raytheon Technologies Corporation on April 3, 2020 ("UTC" or "RTX", as applicable), announced its intention to spin-off its Otis reportable segment and its Carrier reportable segment into two separate publicly-traded companies (the "Separation"). On April 3, 2020, the Company became an independent publicly-traded company through a pro-rata distribution of 0.5 shares of Common Stock for every share of UTC common stock held at the close of business on the record date of March 19, 2020 ("Distribution"). Otis began to trade as a separate public company (New York Stock Exchange ("NYSE"): OTIS) on April 3, 2020.

Unless the context otherwise requires, references to "Otis", "we", "us", "our" and "the Company" refer to (i) Otis Worldwide Corporation's business prior to the Separation and (ii) Otis Worldwide Corporation and its subsidiaries following the Separation, as applicable. References to "UTC" relate to pre-Separation matters, and references to "RTX" relate to post-Separation matters.

The Separation was completed pursuant to a Separation and Distribution Agreement ("Separation Agreement") and other agreements with our former parent, UTC, related to the Separation, including but not limited to a transition services agreement (the "Transition Services Agreement" or "TSA"), a tax matters agreement (the "Tax Matters Agreement" or "TMA"), an employee matters agreement (the "Employee Matters Agreement" or "EMA") and an intellectual property agreement (the "Intellectual Property Agreement"). For further discussion on these agreements, see Note 5, "Related Parties".

Zardoya Otis Tender Offer

In September 2021, the Company announced a tender offer, subject to the terms and conditions thereof, to acquire all of the issued and outstanding shares of Zardoya Otis, S.A. ("Zardoya Otis") not owned by the Company at a price of €7.00 per share in cash (the "Tender Offer"), subject to adjustment for dividends and other distributions declared and paid by Zardoya Otis after the announcement, and its intention to delist the shares of Zardoya Otis from the Spanish stock exchanges subsequent to the Tender Offer. The price per share of the Tender Offer was first adjusted to €6.93 for the dividend paid on October 11, 2021. On December 21, 2021, the Company announced it reached an agreement for Euro Syns S.A. (a non-controlling equity owner in Zardoya Otis) to irrevocably tender its shares in the Tender Offer at an offer price of €7.14 per share in cash (€7.07 per share after adjusting for dividends paid by Zardoya Otis on January 10, 2022). As a result of this agreement, the Company increased the tender price to all shareholders to €7.07 per share in cash after adjusting for the dividends paid. The Tender Offer is subject to approval by the CNMV, which is still pending as of February 4, 2022. The value of the issued and outstanding shares of Zardoya Otis not owned by the Company is €1.66 billion based on the adjusted tender price of €7.07.

The Company owned a controlling interest and had operational control of Zardoya Otis as of and for the years ended December 31, 2021, 2020 and 2019, and therefore its financial results are included in our Consolidated Financial Statements. As of December 31, 2021, the Company owned 50.02% of Zardoya Otis. See Note 10, "Borrowings and Lines of Credit" and Note 20, "Guarantees" for additional information regarding financing and guarantee agreements entered into by the Company and its subsidiaries in connection with the Tender Offer.

Note 2: Summary of Significant Accounting Policies

Principles of Consolidation and Basis of Presentation. Prior to the Separation on April 3, 2020, our historical financial statements were prepared on a standalone combined basis and were derived from the consolidated financial statements and accounting records of our former parent, UTC. For the period subsequent to April 3, 2020, our financial statements are presented on a consolidated basis as the Company became a standalone public company (collectively, the financial statements for all periods presented, including the historical results of the Company prior to April 3, 2020, are now referred to as "Consolidated Financial Statements" to reflect this change). They have been prepared in accordance with the instructions to Form 10-K.

Prior to the Separation on April 3, 2020, the Consolidated Statements of Operations included all revenues and costs directly attributable to Otis, including costs for facilities, functions and services used by Otis. Costs for certain functions and services performed by centralized UTC organizations were directly charged to Otis based on specific identification when possible or based on a reasonable allocation driver such as net sales, headcount, usage or other allocation methods. All charges and allocations for facilities, functions and services performed by UTC organizations have been deemed settled in cash by Otis to UTC in the period in which the cost was recorded on the Consolidated Statements of Operations. Current and deferred income taxes were determined based on the standalone results of Otis. However, because the Company was included in our former parent UTC's tax group in certain jurisdictions, the Company's actual tax balances may differ from those reported. The Company's portion of its domestic income taxes and certain income taxes for jurisdictions outside the U.S. are deemed to have been settled in the period the related tax expense was recorded prior to the Separation.

The Consolidated Financial Statements include the accounts of Otis and its controlled subsidiaries, as well as entities where Otis has a variable interest and is the primary beneficiary as defined by Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 810, *Consolidation*. The factors we use to determine the primary beneficiary of a variable interest entity ("VIE") may include decision authority, control over management of day-to-day operations and the amount of our equity investment in relation to others' investments.

All significant intracompany accounts and transactions within the Company have been eliminated in the preparation of the Consolidated Financial Statements.

Certain amounts for prior years have been reclassified to conform to the current year presentation, which are immaterial.

Use of Estimates. The preparation of the Consolidated Financial Statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities. In addition, estimates and assumptions may impact the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

We assessed certain accounting matters that generally require consideration of forecasted financial information in the context of the information reasonably available to us and the unknown future impacts of coronavirus ("COVID-19") as of December 31, 2021 and 2020, and through the date of this report. The accounting matters assessed included, but were not limited to, our allowance for credit losses, the carrying value of our goodwill and other long-lived assets, financial assets and revenue recognition. While there was not a material impact to our Consolidated Financial Statements as of and for the years ended December 31, 2021 and 2020 resulting from our assessments of these matters, future assessment of our current expectations at that time of the magnitude and duration of COVID-19, as well as other factors, could result in material impacts to our Consolidated Financial Statements in future reporting periods.

Risks and Uncertainties. As the global COVID-19 pandemic continues and the economic recovery is ongoing, the Company continues to closely monitor and manage the impact of the COVID-19 pandemic on its business globally. It is difficult to estimate at this time the duration and extent of the continued impact of the pandemic and ongoing economic recovery on the Company's business, financial position, cash flow and results of operations. The results of our operations and overall financial performance were impacted during the years ended December 31, 2021 and 2020, including impacts to customer demand for our new equipment, maintenance and repair and modernization businesses, cancellations or delays of customer orders, customer liquidity constraints and related credit reserves, and supplier and raw material capacity constraints, delays and related costs. Primarily in 2020, there were also temporary closures and reduced capacity of our operations, limited new equipment job site closures and challenges in accessing units to provide maintenance and repair services that also impacted our results.

Due to existing conditions and uncertainty, COVID-19 and ongoing economic recovery could have an impact on our business, cash flow and results of operations into 2022. The extent of the impact will depend largely on future developments, which are highly uncertain, including the severity of the outbreak and variants of COVID-19, efficacy, availability and distribution of vaccines, actions taken by government authorities to further contain the outbreak or address its impact and its longer-term impacts on the global economy, among other factors.

Cash and Cash Equivalents. Cash and cash equivalents includes cash on hand, demand deposits and short-term cash investments that are highly liquid in nature and have original maturities of three months or less.

Restricted Cash. In certain circumstances we are required to maintain cash deposits with certain banks with respect to contractual or other legal obligations, and therefore the use of these cash deposits for general operational purposes is restricted. Restricted cash as of December 31, 2021 is primarily cash of \$1.9 billion required to be held in escrow to fund the Tender

Offer, which is expected to be completed in 2022. The non-current portion of restricted cash is \$2 million as of December 31, 2021 and 2020, and is included in Other assets on the Consolidated Balance Sheets.

Accounts Receivable. The Company records accounts receivables when the right to consideration becomes unconditional. We regularly evaluate the collectability of our accounts receivable and maintain reserves for expected credit losses. See Note 6, "Accounts Receivable, Net" for additional information on the Company's policy for evaluation of expected credit losses. We do not believe that accounts receivable represent significant concentrations of credit risk because of the diversified portfolio of individual customers and geographic areas.

Retainage and Unbilled Receivables. Current and long-term accounts receivable as of December 31, 2021 and 2020 include retainage of \$75 million and \$61 million, respectively, and unbilled receivables of \$109 million and \$104 million, respectively. Retainage represents amounts that, pursuant to the applicable contract, are not due until after project completion and acceptance by the customer. Unbilled receivables represent revenues that are earned but may not be currently billable to the customer under the terms of the contract. These items are expected to be billed and collected in the ordinary course of business. Unbilled receivables where we have an unconditional right to payment are included in Accounts receivable, net as of December 31, 2021 and 2020.

Customer Financing Notes Receivable. Through financing arrangements with our customers, we extend payment terms, which are generally not more than one year in duration.

Factoring. The Company may sell certain trade accounts and notes receivable to lending institutions to manage credit risk. Financial assets sold under these arrangements are excluded from Accounts receivable, net in the Company's Consolidated Balance Sheets at the time of sale if the Company has surrendered control over the related assets. Whether control has been relinquished requires, among other things, an evaluation of relevant legal considerations and an assessment of the nature and extent of the Company's continuing involvement with the assets transferred. Gains and losses stemming from transfers reported as sales are included in Interest expense (income), net in the accompanying Consolidated Statements of Operations.

Contract Assets and Liabilities. Contract assets and liabilities represent the difference in the timing of revenue recognition from receipt of cash from our customers and billings.

Contract assets reflect revenue recognized and performance obligations satisfied in advance of customer billing. Performance obligations partially satisfied in advance of customer billings are included in Contract assets, current. Contract liabilities relate to payments received in advance of the satisfaction of performance under the contract. We receive payments from customers based on the terms established in our contracts. See Note 4, "Contract Assets and Liabilities" for further discussion of contract assets and liabilities.

Inventories. Inventories are stated at the lower of cost or estimated realizable value and are primarily based on a first-in, first-out ("FIFO") method. Valuation reserves for excess, obsolete and slow-moving inventory are estimated by comparing the inventory levels of individual parts to both future sales forecasts or production requirements and historical usage rates in order to identify inventory where the resale value or replacement value is less than inventoriable cost. See Note 7, "Inventories, Net" for further details of the inventories by classification.

Fixed Assets. Fixed assets, including software capitalized for internal-use, are recorded at cost. Depreciation of fixed assets is computed over the fixed assets' useful lives on a straight-line basis, unless another systematic and rational basis is more representative of the fixed asset's pattern of use. See Note 8, "Fixed Assets" for further details of useful lives.

Internal-use software. The Company capitalizes direct costs of services used in the development of, and external software acquired for use as, internal-use software. Amounts capitalized are amortized over a period ranging from three to five years, on a straight-line basis, unless another systematic and rational basis is more representative of the software's use. Amounts are reported as a component of Machinery and equipment.

Asset Retirement Obligations. The Company records the fair value of legal obligations associated with the retirement of tangible long-lived assets in the period in which the legal obligations are determined to exist. Upon initial recognition of a liability, the Company capitalizes the cost of the asset retirement obligation by increasing the carrying amount of the related long-lived asset. Over time, the liability is adjusted for changes in its present value and the capitalized cost is depreciated over the useful life of the related asset.

Fair Value of Financial Instruments. The fair value hierarchy is based on inputs to valuation techniques that are used to measure fair value that are either observable or unobservable. Observable inputs reflect assumptions market participants would use in pricing an asset or liability based on market data obtained from independent sources, while unobservable inputs reflect a reporting entity's pricing based upon their own market assumptions. The fair value hierarchy consists of the following three levels:

Level I – Quoted prices for identical instruments in active markets.

Level II – Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations whose inputs are observable or whose significant value drivers are observable.

Level III – Instruments whose significant value drivers are unobservable.

The carrying amount of current trade receivables, accounts payable and accrued expenses approximates fair value due to the short maturity (less than one year) of the instruments.

Equity Method Investments. Entities in which we have the ability to exercise significant influence, but do not control, are accounted for under the equity method of accounting and are included in Other assets on the Consolidated Balance Sheets. Under this method of accounting, our share of the net earnings or losses of the investee entity is included in Other income (expense), net in the Consolidated Statements of Operations since the activities of the investee entity are closely aligned with the operations of the Company. We evaluate our equity method investments whenever events or changes in circumstance indicate that the carrying amounts of such investments may be impaired. If a decline in the value of an equity method investment is determined to be other than temporary, a loss is recorded in earnings in the current period.

Business Combinations. We account for transactions that are classified as business combinations in accordance with the FASB ASC Topic 805: *Business Combinations*. Once a business is acquired, the fair values of the identifiable assets acquired and liabilities assumed are determined with the excess cost recorded to goodwill. As required, preliminary fair values are determined once a business is acquired, with the final determination of the fair values being completed within the one-year measurement period from the date of acquisition.

Goodwill, Intangible Assets and Long-Lived Assets. Goodwill represents costs in excess of fair values assigned to the underlying net assets of acquired businesses. Intangible assets consist of service portfolios, patents, trademarks/trade names, customer relationships and other intangible assets. Acquired intangible assets are recognized at fair value during acquisition accounting and then amortized to Cost of products and services sold and Selling, general and administrative over the applicable useful lives.

Goodwill and Indefinite-Lived Intangible Assets. Goodwill and intangible assets deemed to have indefinite lives are not amortized. Goodwill and indefinite-lived intangible assets are subject to impairment testing annually or when a triggering event occurs using the guidance and criteria described in FASB ASC Topic 350: *Intangibles – Goodwill and Other*. This testing compares carrying values to fair values and, when appropriate, the carrying value of these assets is reduced to fair value.

We test goodwill for impairment at a level within the Company referred to as the reporting unit, which is one level below the operating segment level. When testing goodwill for impairment, the Company may first assess qualitative factors. If an initial qualitative assessment identified that it is more likely than not that the fair value of a reporting unit is less than its carrying value, additional quantitative testing is performed. The Company may also elect to skip the qualitative testing and proceed directly to the quantitative testing. If the quantitative testing indicates that goodwill is impaired, an impairment charge is recognized based on the difference between the reporting unit's carrying value and its fair value. When it is determined that a quantitative analysis is required, the Company primarily utilizes a discounted cash flow methodology to calculate the fair value of its reporting units. The Company completed its most recent annual impairment testing as of July 1, 2021, and determined in the qualitative assessment that quantitative testing is not necessary. There were no triggering events since the annual impairment test.

Finite-Lived Intangible Assets and Long-Lived Assets. Useful lives of finite-lived intangible assets are estimated based upon the nature of the intangible asset. These intangible assets are amortized based on the pattern in which the economic benefits of the intangible assets are consumed or if straight-line amortization approximates the pattern of economic benefit, a straight-line amortization method may be used. The range of estimated useful lives is as follows:

Purchased service portfolios	5 to 25 years
Patents, trademarks/trade names	4 to 40 years
Customer relationships and other	1 to 20 years

The Company evaluates the potential impairment of long-lived assets, including finite-lived intangible assets whenever events or changes in circumstances indicate that the related carrying amounts may not be recoverable. If the carrying value of other long-lived assets held and used exceeds the sum of the undiscounted expected future cash flows, the carrying value is written down to fair value. See Note 8, "Fixed Assets" and Note 9, "Business Acquisitions, Goodwill and Intangible Assets" for additional information regarding intangible assets and other long-lived assets.

Income Taxes. In the ordinary course of business, there is inherent uncertainty in quantifying our income tax positions. We assess our income tax positions and record tax benefits for all years subject to examination based upon management's evaluation of the facts, circumstances and information available at the reporting date. For those tax positions where it is more-likely-than-not that a tax benefit will be sustained, we have recorded the largest amount of tax benefit with a greater than 50% likelihood of being realized upon ultimate settlement with a taxing authority that has full knowledge of all relevant information. For those income tax positions where it is not more-likely-than-not that a tax benefit will be sustained, no tax benefit has been recognized in the financial statements. Where applicable, associated interest expense has also been recognized. We recognize accrued interest related to unrecognized tax benefits in Interest expense (income), net. Penalties, if incurred, would be recognized as a component of Income tax expense.

The U.S. Tax Cuts and Jobs Act ("TCJA") subjects the Company to a tax on Global Intangible Low-Taxed Income ("GILTI"). GILTI is a tax on foreign income in excess of a deemed return on tangible assets of foreign corporations. We account for GILTI as a period cost as incurred.

Income taxes as presented in the Consolidated Financial Statements of the Company for periods prior to the Separation attribute current and deferred income taxes of our former parent, UTC, to the Company's stand-alone financial statements in a manner that is systematic, rational and consistent with the asset and liability method prescribed by FASB ASC Topic 740: *Income Taxes* ("ASC 740"). Accordingly, the Company's income tax provision for periods prior to the Separation was prepared following the separate return method. The separate return method applies ASC 740 to the stand-alone financial statements of each member of the consolidated group as if the group members were a separate taxpayer and a stand-alone enterprise. The calculation of our income taxes on a separate return basis requires a considerable amount of judgment and use of both estimates and allocations. As a result, actual transactions included in the consolidated financial statements of UTC may not be included in the Consolidated Financial Statements of the Company. Similarly, the tax treatment of certain items reflected in the Consolidated Financial Statements of the Company may not be reflected in the consolidated financial statements and tax returns of UTC. Therefore, such items as net operating losses, credit carry-forwards and valuation allowances may exist in the stand-alone financial statements that may or may not exist in UTC's consolidated financial statements. As such, the income taxes of the Company as presented in the Consolidated Financial Statements prior to the Separation may not be indicative of the income taxes that the Company will report in the future.

See Note 5, "Related Parties" and Note 16, "Income Taxes" for additional information.

Revenue Recognition. We recognized revenue in accordance with FASB ASC Topic 606: *Revenue from Contracts with Customers* and its related amendments, (referred to, collectively, as "ASC 606"). The Company's revenue streams include new equipment, maintenance and repair, and modernization. New equipment, modernization and repair services revenue are recognized over time as we are enhancing an asset the customer controls. Maintenance revenue is recognized on a straight-line basis over the life of the maintenance contract.

New Equipment, Modernization and Repair services. For new equipment and modernization transactions, equipment and installation are typically procured in a single contract providing the customer with a complete installed elevator or escalator unit. The combination of equipment and installation promises are typically a single performance obligation. For repair services, the customer typically contracts for specific short-term services which form a single performance obligation.

For these performance obligations, revenue is recognized over time using costs incurred to date relative to total estimated costs at completion to measure progress. Incurred costs represent work performed, which corresponds with and best depicts transfer of control or the enhancement of the customer's assets. Contract costs included in the calculation are comprised of labor, materials, subcontractors' costs or other direct costs and indirect costs, which include indirect labor costs. Specific to new equipment and modernization arrangements, the Company, based on project progression, reviews cost estimates on significant contracts on a quarterly basis, and for others, no less frequently than annually or when circumstances change and warrant a modification to a previous estimate. These estimates form the basis for the amount of revenue to be recognized and include the latest updated total transaction price, costs and risks for each contract. These estimates for our ongoing contracts may materially change due to the change and completions of the contract scopes, cost estimates and customers' plans, among other factors.

For performance obligations recognized under the cost to cost method, we record changes in contract estimates using the cumulative catch-up method. Modifications are recognized as a cumulative catch-up or treated as a separate accounting contract if the modification adds distinct goods or services and the modification is priced at its stand-alone selling price.

Maintenance. Our customers purchase maintenance contracts which include services such as required periodic maintenance procedures, preventive services and stand ready obligations to remediate issues with the elevator/escalator when and if they arise. Given the continuous nature of these services throughout the year, we recognize revenue on maintenance contracts on a straight-line basis which aligns with the cost profile of these services. Contractual changes are typically recognized prospectively as most modifications are extensions of the existing arrangement.

Transaction Price Considerations. Our contracts typically include fixed payments which are generally received as we progress under our contracts. As a result, we have not identified any significant financing elements in our contract, and our contracts do not have significant estimates related to variable consideration except in the case of a project having an underlying performance issue, which is rare. In situations where multiple performance obligations in a single contract (e.g., new equipment and maintenance) exist, the transaction price is allocated to each performance obligation in proportion to their stand-alone selling prices. Estimates are made to account for changes in transaction prices attributable to pricing disputes that occur subsequent to the inception of contracts, based upon historical experience and the status of contracts.

Certain costs to obtain or fulfill contracts. Certain costs to obtain or fulfill a contract with a customer must be capitalized, to the extent recoverable from the associated contract margin, and subsequently amortized as the products or services are delivered to the customer. Sales commissions related to new equipment, modernization and maintenance contracts, excluding renewals, are capitalized as contract fulfillment costs and are amortized consistent with the pattern of transfer of the goods or services. Customer contract costs, which do not qualify for capitalization as contract fulfillment costs, are expensed as incurred.

Loss Contracts. Loss provisions on contracts are recognized to the extent that estimated contract costs exceed the estimated consideration from the products contemplated under the contractual arrangement. For new commitments, we generally record loss provisions at contract inception. For existing commitments, anticipated losses on contractual arrangements are recognized in the period in which losses become probable.

Remaining Performance Obligations ("RPO"). RPO represents the aggregate amount of total contract transaction price that is unsatisfied or partially unsatisfied. As of December 31, 2021, our total RPO was approximately \$17.1 billion. Of the total RPO as of December 31, 2021, we expect approximately 89% will be recognized as sales over the following 24 months.

Additional disclosure required by ASC 606 is provided in Note 23, "Segment Financial Data", including disaggregation of revenue into categories that depict how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors.

Self-Insurance. The Company is primarily self-insured for a number of risks including, but not limited to, workers' compensation, general liability, automobile liability and employee-related healthcare benefits. The Company has obtained insurance coverage for amounts exceeding individual and aggregate loss limits. The Company accrues for known future claims and incurred but not reported losses within Accrued liabilities and Other long-term liabilities on the Consolidated Balance Sheets, totaling \$287 million and \$299 million as of December 31, 2021 and 2020, respectively.

Derivatives and Hedging Activity. We have used derivative instruments, principally forward contracts, to help manage certain foreign currency and commodity price exposures. Derivative instruments are viewed as risk management tools by us and are not used for trading or speculative purposes. By their nature, all financial instruments involve market and credit risks. We enter into derivative and other financial instruments with major investment grade financial institutions and have policies to monitor

the credit risk of those counterparties. We limit counterparty exposure and concentration of risk by diversifying counterparties. While there can be no assurance, we do not anticipate any material non-performance by any of these counterparties.

Designated Derivative Instruments. Derivatives used for hedging purposes may be designated and effective as a hedge of the identified risk exposure at the inception of the contract. All derivative instruments are recorded on the Consolidated Balance Sheets at fair value. Derivatives used to hedge foreign currency denominated balance sheet items and commodity prices for materials recognized in cost of sales, and are reported directly in earnings along with offsetting transaction gains and losses on the items being hedged. Derivatives used to hedge forecasted cash flows associated with foreign currency commitments or forecasted commodity purchases may be accounted for as cash flow hedges, as deemed appropriate. Gains and losses on derivatives designated as cash flow hedges are recorded in other comprehensive income (loss), net of tax and reclassified to earnings as a component of product sales or expenses, as applicable, when the hedged transaction occurs. Gains and losses on derivatives designated as cash flow hedges are recorded in Other operating activities, net within the Consolidated Statement of Cash Flows. To the extent that a previously designated hedging transaction is no longer an effective hedge, any ineffectiveness measured in the hedging relationship is recorded currently in earnings in the period it occurs.

Additional information pertaining to net investment hedging is included in Note 18, "Financial Instruments".

Non-designated Derivative Instruments. To the extent the hedge accounting criteria are not applied, the foreign currency forward contracts and commodity price contracts are utilized as economic hedges and changes in the fair value of these contracts are recorded currently in earnings in the period in which they occur. Additional information pertaining to these contracts is included in Note 18, "Financial Instruments".

In addition, the Company periodically enters into sales contracts denominated in currencies other than the functional currency of the parties to the transaction. The Company accounts for these transactions separately valuing the embedded derivative component of these contracts. The changes in the fair value of these embedded derivatives are recorded in Other income (expense), net in the Consolidated Statements of Operations. For the years ended December 31, 2021, 2020 and 2019, we recognized a gain of \$1 million, a loss of \$3 million and a loss of \$27 million, respectively, due to the changes in fair value of embedded derivatives.

Environmental. Environmental investigatory, remediation, operating and maintenance costs are accrued when it is probable that a liability has been incurred and the amount can be reasonably estimated. The most likely cost to be incurred is accrued based on an evaluation of currently available facts with respect to each individual site, including current laws, regulations and prior remediation experience. Where no amount within a range of estimates is more likely, the minimum is accrued. Liabilities with fixed or reliably determinable future cash payments are discounted. Accrued environmental liabilities are not reduced by potential insurance reimbursements. See Note 22, "Contingent Liabilities" for additional details on the environmental remediation activities.

Research and Development. These costs are expensed in the period incurred and are shown on a separate line of the Consolidated Statements of Operations. Research and development expenses, covering research and the advancement of potential new and improved products and their uses, primarily include salaries and other employment costs.

Other Income (Expense), Net. Other income (expense), net includes the impact of changes in the fair value and settlement of derivatives, gains or losses on sale of businesses and fixed assets, earnings from equity method investments, fair value changes on equity securities, impairments, non-recurring Separation-related expenses, gains on insurance recoveries and certain other infrequent operating income and expense items.

Foreign Exchange. We conduct business in many different currencies and, accordingly, are subject to the inherent risks associated with foreign exchange rate movements. The financial position and results of operations of substantially all of our foreign subsidiaries are measured using the local currency as the functional currency. Foreign currency denominated assets and liabilities are translated into U.S. Dollars at the exchange rates existing at the respective balance sheet dates, and income and expense items are translated at the average exchange rates during the respective periods. The aggregate effects of translating the balance sheets of these subsidiaries are deferred within Accumulated other comprehensive income (loss).

Pension and Postretirement Obligations. Guidance under FASB ASC Topic 715: *Compensation – Retirement Benefits* requires balance sheet recognition of the overfunded or underfunded status of pension and postretirement benefit plans. Under this guidance, actuarial gains and losses, prior service costs or credits and any remaining transition assets or obligations that have not been recognized under previous accounting standards must be recognized in other comprehensive income (loss), net of tax effects, until they are amortized as a component of net periodic benefit cost. Pension and postretirement obligation balances

and related costs reflected within the Consolidated Financial Statements include both costs directly attributable to plans dedicated to Otis, as well as an allocation of costs for Otis employees' participation in our former parent, UTC's plans prior to Separation. See Note 13, "Employee Benefit Plans" for additional information.

Additional Paid-in Capital. Additional paid-in capital includes the value of stock-based award activity, as well as the difference between the cost of acquiring the Noncontrolling interest in consolidated subsidiaries and Otis' carrying value of the Noncontrolling interest associated with those subsidiaries.

In 2021, the Company recorded in Additional paid-in capital \$2 million for transaction costs associated with the anticipated acquisition of shares of Zardoya Otis not owned by the Company. Refer to Note 1, "Business Overview" for additional information on the Tender Offer.

Noncontrolling Interest. Ownership interest in the Company's consolidated subsidiaries held by parties other than the Company are presented separately from Shareholders' (Deficit) Equity as "Noncontrolling interest" within equity on the Consolidated Balance Sheets. The amount of net income attributable to Otis Worldwide Corporation and the noncontrolling interest are both presented on the Consolidated Statements of Operations.

All noncontrolling interest with redemption features, such as put options or other contractual obligations to acquire the noncontrolling interest, that are not solely within our control are redeemable noncontrolling interest. Redeemable noncontrolling interest are reported in the mezzanine section of the Consolidated Balance Sheets, between Liabilities and equity (deficit), at the greater of redemption value or initial carrying value.

In 2021, the Company identified a misclassification between noncontrolling interest and redeemable noncontrolling interest. The impact of the correction of the misclassification to the Consolidated Balance Sheets as of January 1, 2019 was an increase to redeemable noncontrolling interest of \$94 million, a decrease to noncontrolling interest of \$79 million and a decrease to UTC Net Investment of \$15 million. The impact of the correction of the misclassification to the Consolidated Balance Sheets as of December 31, 2019 was an increase to redeemable noncontrolling interest of \$103 million, a decrease to noncontrolling interest of \$75 million and a decrease to UTC Net Investment of \$28 million. The impact of the correction of the misclassification to the Consolidated Balance Sheets as of December 31, 2020 was an increase to redeemable noncontrolling interest of \$111 million, a decrease to noncontrolling interest of \$81 million and a decrease to Accumulated Deficit of \$30 million. Additionally, the impact of redeemable noncontrolling interest to net income attributable to common shareholders was a reduction of \$0.03 to basic and diluted earnings per share of Common Stock in 2019. There was no impact to basic or diluted earnings per share of Common Stock in 2020.

The activity attributable to noncontrolling interest and redeemable noncontrolling interest for the years ended December 31, 2021, 2020 and 2019 are presented in the Consolidated Statements of Changes in Equity.

UTC Net Investment. For periods prior to the Separation, UTC's Net Investment in the Company was presented as "UTC Net Investment (Deficit)" on the Consolidated Balance Sheets. The Consolidated Statements of Changes in Equity includes activity in UTC Net Investment (Deficit) for corporate allocations, net cash transfers and other property transfers between our former parent, UTC, and the Company, as well as related party receivables, payables and long-term debt between the Company and other UTC affiliates that were settled on a current basis. Prior to the Separation, UTC performed cash management and other treasury-related functions on a centralized basis for nearly all of its legal entities, which included the Company, and, consequently, the net cash generated by the Company in legal entities that participated in UTC's centralized cash management and financing programs was transferred to UTC through the related party accounts. See Note 5, "Related Parties" for additional information.

Recent Accounting Pronouncements

In June 2016, the FASB issued ASU 2016-13, Financial Instruments - Credit Losses (Topic 326): *Measurement of Credit Losses on Financial Instruments*. This ASU and its related amendments (collectively, the "Credit Loss Standard") modifies the impairment model to utilize an expected loss methodology in place of the incurred loss methodology for financial instruments including trade receivables, contract assets, long term receivables and off-balance sheet credit exposures. The Credit Loss Standard requires consideration of a broader range of information to estimate expected credit losses, including historical information and current conditions through a reasonable forecast period. The Credit Loss Standard requires that the income statement reflect the measurement of credit losses for newly recognized financial assets as well as the expected increase or decrease of expected credit losses that have taken place during the period, which may result in earlier recognition of certain losses. We adopted this standard effective January 1, 2020 utilizing a modified retrospective approach. A cumulative-effect non-cash after-tax adjustment to retained earnings as of January 1, 2020 of \$25 million was recorded.

In August 2018, the FASB issued ASU 2018-13, Fair Value Measurement (Topic 820): *Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement*. The new standard removes the disclosure requirements for the amount of and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy. The provisions of this ASU were effective for years beginning after December 15, 2019, with early adoption permitted. The Company adopted this standard effective January 1, 2020. The adoption of this ASU did not have a material impact on our Consolidated Financial Statements.

In August 2018, the FASB issued ASU 2018-15, Intangibles—Goodwill and Other—Internal-Use Software (Subtopic 350-40): *Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract*. The new standard provides updated guidance surrounding implementation costs associated with cloud computing arrangements that are service contracts. The provisions of this ASU were effective for years beginning after December 15, 2019. The Company adopted this standard prospectively effective January 1, 2020. The adoption of this ASU did not have a material impact on our Consolidated Financial Statements.

In February 2018, the FASB issued ASU 2018-02, Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income (Topic 220). The new standard allows companies to reclassify to retained earnings the stranded tax effects in Accumulated other comprehensive income from the then-newly-enacted TCJA. The new standard was effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years, with early adoption permitted. The Company adopted the standard and elected to reclassify the income tax effects of the TCJA from Accumulated other comprehensive (loss) to UTC Net Investment effective January 1, 2019. The adoption of this standard did not have a material impact on our Consolidated Financial Statements.

In August 2018, the FASB issued ASU 2018-14, Compensation—Retirement Benefits—Defined Benefit Plans - *General (Subtopic 715-20): Disclosure Framework—Changes to the Disclosure Requirements for Defined Benefit Plans*. The new standard includes updates to the disclosure requirements for defined benefit plans including several additions, deletions and modifications to the disclosure requirements. The provisions of this ASU were effective for years ending after December 15, 2020, with early adoption permitted. The Company adopted this standard effective January 1, 2020. The adoption of this ASU did not have a material impact on our Consolidated Financial Statements.

In December 2019, the FASB issued ASU 2019-12, Income Taxes (Topic 740): *Simplifying the Accounting for Income Taxes*. The amendments in this update remove certain exceptions of Topic 740 including: exception to the incremental approach for intraperiod tax allocation when there is a loss from continuing operations and income or gain from other items; exception to the requirement to recognize a deferred tax liability for equity method investments when a foreign subsidiary becomes an equity method investment; exception to the ability not to recognize a deferred tax liability for a foreign subsidiary when a foreign equity method investment becomes a subsidiary; exception to the general methodology for calculating income taxes in an interim period when a year-to-date loss exceeds the anticipated loss for the year. There are also additional areas of guidance in regards to: franchise and other taxes partially based on income and the interim recognition of enactment of tax laws and rate changes. The provisions of this ASU were effective for years beginning after December 15, 2020, with early adoption permitted. The Company adopted this standard effective January 1, 2021. The adoption of this ASU did not have a material impact on our Consolidated Financial Statements.

Future Accounting Pronouncements

In March 2020, the FASB issued ASU 2020-04, Reference Rate Reform (Topic 848): *Facilitation of the Effects of Reference Rate Reform on Financial Reporting* ("ASU 2020-04"), which provides temporary optional expedients and exceptions for applying generally accepted accounting principles to contracts, hedging relationships and other transactions

affected by reference rate reform if certain criteria are met. The amendments in ASU 2020-04 apply only to contracts, hedging relationships, and other transactions that reference LIBOR or another reference rate expected to be discontinued because of reference rate reform. ASU 2020-04 may be adopted and upon adoption may be applied prospectively to contract modifications made on or before December 31, 2022. We are currently evaluating the impact of adopting this standard but do not expect it to have a material impact on our Consolidated Financial Statements.

In October 2021, the FASB issued ASU 2021-08, Business Combinations (Topic 805): *Accounting for Contract Assets and Contract Liabilities from Contracts with Customers*. This ASU clarifies that an acquirer of a business should recognize and measure contract assets and contract liabilities in a business combination in accordance with Accounting Standards Codification ("ASC") Topic 606, Revenue from Contracts with Customers. ASU 2021-08 is effective for fiscal years beginning after December 15, 2022, with early application permitted. We are currently evaluating the impact of adopting this standard, however we do not expect it to have a material impact on our Consolidated Financial Statements.

Note 3: Earnings per Share

On April 3, 2020, the date of consummation of the Separation, 433,079,455 shares of the Common Stock, par value \$0.01 per share, were distributed to UTC shareholders of record as of March 19, 2020. This share amount is being utilized for the calculation of basic and diluted earnings per share for all periods presented prior to the Separation as all shares were owned by UTC prior to the Separation. For the 2019 calculations, these shares are treated as issued and outstanding at January 1, 2019 for purposes of calculating historical basic and diluted earnings per share.

<i>(dollars in millions, except per share amounts; shares in millions)</i>	2021	2020	2019
Net income attributable to Otis Worldwide Corporation	\$ 1,246	\$ 906	\$ 1,116
Impact of redeemable noncontrolling interest	—	—	(13)
Net income attributable to common shareholders	\$ 1,246	\$ 906	\$ 1,103
Basic weighted average number of shares outstanding	427.7	433.2	433.1
Stock awards and equity units (share equivalent)	3.7	1.4	—
Diluted weighted average number of shares outstanding	431.4	434.6	433.1
Earnings Per Share of Common Stock:			
Basic	\$ 2.91	\$ 2.09	\$ 2.55
Diluted	\$ 2.89	\$ 2.08	\$ 2.55

The computation of diluted earnings per share excludes the effect of the potential exercise of stock awards, including stock appreciation rights and stock options, when the average market price of the Common Stock is lower than the exercise price of the related stock awards during the period because the effect would be anti-dilutive. In addition, the computation of diluted earnings per share excludes the effect of the potential exercise of stock awards when the awards' assumed proceeds exceed the average market price of the common shares during the period. There were 0.1 million and 4.6 million of anti-dilutive stock awards excluded from the computation for 2021 and 2020, respectively.

Prior to the Separation, Otis employees participated in UTC's equity incentive plans, pursuant to which they were granted stock options, stock appreciation rights, restricted stock units, and performance-based restricted stock units. All awards granted under these plans were related to UTC common shares. Upon Separation, outstanding awards held by Otis employees under UTC's equity incentive plans were converted in accordance with the EMA using the conversion ratios set forth in the EMA. Depending on whether the awards held on the Separation date were in an unvested or vested status, Otis employees either received converted awards solely in Otis based shares (unvested status) or a combination of Otis, UTC and Carrier share based awards (vested status). Former Otis employees, and current and former legacy UTC and Carrier employees, who on the Separation date were holding outstanding UTC awards in a vested status also received a combination of Otis, UTC and Carrier awards post-spin. The conversion methodology used was calculated in accordance with the EMA and with the purpose of maintaining the aggregate intrinsic value of the award immediately after the Separation when compared to the aggregate intrinsic value immediately prior to the Separation. See Note 13, "Employee Benefit Plans" for further detail.

For the purpose of the above diluted earnings per share computation, we only included the units associated with the converted Otis share-based awards. These awards were assumed to be outstanding beginning from the Separation date.

Note 4: Contract Assets and Liabilities

Contract assets reflect revenue recognized in advance of customer billing. Contract liabilities are recognized when a customer pays consideration, or we have a right to receive an amount of unconditional consideration, in advance of the satisfaction of performance obligations under the contract. We typically receive progress payments from our customers as we perform our work over time.

Total Contract assets and Contract liabilities as of December 31, 2021 and 2020 are as follows:

<i>(dollars in millions)</i>	2021	2020
Contract assets, current	\$ 550	\$ 458
Total contract assets	550	458
Contract liabilities, current	2,674	2,542
Contract liabilities, noncurrent (included within Other long-term liabilities)	52	44
Total contract liabilities	2,726	2,586
Net contract liabilities	\$ 2,176	\$ 2,128

Contract assets increased by \$92 million during the year ended December 31, 2021 as a result of the progression of current contracts and timing of billing on customer contracts. Contract liabilities increased by \$140 million during the year ended December 31, 2021 primarily due to contract billings in excess of revenue earned. During the years ended December 31, 2021 and 2020, we recognized revenue of \$2.0 billion and \$1.6 billion related to the contract liabilities as of January 1, 2021 and as of January 1, 2020, respectively.

Note 5: Related Parties

In connection with the Separation as further described in Note 1, "Business Overview", the Company entered into several agreements with our former parent, UTC, and Carrier. These agreements include a separation and distribution agreement that sets forth certain agreements with UTC and Carrier regarding the principal actions to be taken in connection with the Separation, including identifying the assets transferred, the liabilities assumed and the contracts transferred to each of UTC, Carrier and Otis as part of the Separation.

Under the TSA, which is substantially completed as of December 31, 2021, RTX provided the Company certain services and we provided certain services to RTX. The EMA allocates among Otis, UTC and Carrier the liabilities and responsibilities relating to employment matters, employee compensation and benefit plans, benefit programs and other related matters.

We entered into the TMA with our former parent UTC and Carrier that governs the parties' respective rights, responsibilities and obligations with respect to tax matters (including responsibility for taxes, entitlement to refunds, allocation of tax attributes, preparation of tax returns, control of tax contests and other tax matters). Subject to certain exceptions set forth in the TMA, Otis generally is responsible for federal, state and foreign taxes imposed on a separate return basis on Otis (or any of its subsidiaries) with respect to taxable periods (or portions thereof) that ended on or prior to the date of the Distribution. The TMA provides special rules that allocate responsibility for tax liabilities arising from a failure of the Separation transactions to qualify for tax-free treatment based on the reasons for such failure. The TMA also imposes restrictions on Otis during the two-year period following the Distribution that are intended to prevent certain transactions from failing to qualify as transactions that are generally tax-free.

Net Transfers from (to) UTC and Separation Transactions. In connection with the Separation, certain assets and liabilities were contributed to the Company by our former parent, UTC, leading up to and at the time of the Separation. During 2020 prior to the Separation, net liabilities of \$43 million were contributed to the Company by our former parent, UTC, primarily consisting of deferred tax assets and liabilities and fixed assets. Prior to the Separation, these non-cash contributions were recorded as Net transfers (to) from UTC on the Consolidated Statements of Changes in Equity through UTC Net Investment.

Upon Separation, the following were recorded as Net transfers (to) from UTC and Separation-related transactions on the Consolidated Statements of Changes in Equity through UTC Net Investment:

<i>(dollars in millions)</i>	
Cash and cash equivalents	\$ 220
Taxes and other	187
Total	\$ 407

Prior to the Separation, our former parent, UTC, paid Otis Cash and cash equivalents of \$190 million in connection with the Separation Agreement, and \$30 million as settlement of related party receivables due from UTC to Otis as a result of a cash overdraft as of March 31, 2020.

Additionally, the TCJA imposed a non-recurring toll charge, paid in installments over an 8-year period on deemed repatriated earnings of foreign subsidiaries as of December 31, 2017. Under the terms of the TMA, Otis will indemnify RTX for a percentage of the toll charge installment payments due after April 3, 2020. As a result, a portion of Otis' balance of Future income tax obligations corresponding to the toll charge was reclassified as a contractual indemnity obligation within Other long-term liabilities on the Consolidated Balance Sheets. The TMA also provides for RTX to indemnify Otis for certain foreign tax obligations as a result of Otis' inclusion in certain foreign consolidated tax returns prior to the Separation. As a result, Otis reflected this contractual indemnification asset within Other current assets and the related tax obligations within Accrued liabilities on the Consolidated Balance Sheets. As a result of the Separation and the provisions of the TMA, Otis' total net tax-related liabilities on April 3, 2020 were reduced by \$191 million, comprising the following impacts to the Consolidated Balance Sheets:

<i>(dollars in millions)</i>	Increase (Decrease)
<u>Assets</u>	
Other current assets	\$ 167
Total Current Assets	167
Future income tax benefits	(4)
Total Assets	\$ 163
<u>Liabilities and (Deficit) Equity</u>	
Accrued liabilities	\$ 110
Total Current Liabilities	110
Future income tax obligations	(377)
Other long-term liabilities	239
Total Liabilities	(28)
Total Shareholders' (Deficit) Equity	191
Total (Deficit) Equity	191
Total Liabilities and (Deficit) Equity	\$ 163

There were also \$4 million of Other long-term liabilities recorded upon Separation on the Consolidated Balance Sheet.

In addition to Income taxes paid, net of (refunds) on the Consolidated Statements of Cash Flows, as a result of the TMA, the Company made payments of \$56 million and \$86 million in 2021 and 2020, respectively, for foreign tax obligations that were reimbursed by RTX.

Shared Costs. The Consolidated Financial Statements have been prepared on a standalone basis for the periods prior to the Separation on April 3, 2020, and for those periods are derived from the consolidated financial statements and accounting records of our former parent, UTC. Prior to the Separation, the Company had been managed and operated in the normal course of business with other affiliates of UTC, and UTC incurred corporate costs such as treasury, tax, accounting, human resources, audit, legal, purchasing, information technology and other such services. The costs associated with these services generally included all payroll and benefit costs, as well as overhead costs related to certain functions. All such amounts have been

deemed to have been incurred and settled by the Company in the period in which the costs were recorded.

Accordingly, prior to the Separation, shared costs of \$16 million and \$80 million were allocated to the Company for 2020 and 2019, respectively, primarily reflected in Selling, general and administrative expense on the Consolidated Statements of Operations. There were no allocated centralized costs for the periods after the Separation.

Separation Costs. We have incurred non-recurring Separation costs as follows:

<i>(dollars in millions)</i>	2021	2020	2019
Separation costs	\$ 27	\$ 119	\$ 43

Separation-related costs prior to the Separation primarily consisted of employee-related costs, costs to establish certain standalone functions and information technology systems, professional services fees, costs to exit from certain services previously provided under the TSA and other transaction-related costs to transition to being a standalone public company. Costs after the Separation primarily consist of costs to exit from certain services previously provided under the TSA and other transaction-related costs to transition to being a standalone public company. Separation costs of \$16 million, \$106 million and \$43 million, in 2021, 2020 and 2019, respectively, are recorded in Selling, general and administrative expense on the Consolidated Statements of Operations. Additional Separation-related items, which are recorded in Other income (expense), net, include adjustments to indemnification assets due from RTX related to the finalization of tax settlements in accordance with the TMA and other Separation-related costs.

Separation costs in 2021, 2020 and 2019 are partially offset by income tax benefits of \$15 million, \$20 million and \$6 million, respectively.

Cash Management and Financing. Prior to the Separation, the Company participated in UTC's centralized cash management and financing programs. Disbursements were made through centralized accounts payable systems which were operated by our former parent, UTC. Cash receipts were transferred to centralized accounts, which were also maintained by UTC. As cash was received and disbursed by UTC, it was accounted for by the Company through UTC Net Investment. All short and long-term debt was financed by UTC prior to the issuance of the notes and the term loan in connection with the Separation, and the financing decisions for wholly and majority owned subsidiaries were determined by UTC. The cash reflected on the Consolidated Statements of Cash Flows as of December 31, 2019 represents cash on hand at certain foreign entities that did not participate in the centralized cash management program and were specifically identifiable to the Company.

Long-Term Debt, Accounts Receivable and Accounts Payable. Certain related party transactions between the Company and our former parent, UTC, have been included within UTC Net Investment on the Consolidated Balance Sheets in the historical periods presented prior to the Separation. The UTC Net Investment includes related party receivables due from UTC and its affiliates of \$7.7 billion as of December 31, 2019. The UTC Net Investment includes related party payables due to UTC and its affiliates of \$750 million as of December 31, 2019, which primarily related to centralized cash management and financing programs. The UTC Net Investment includes related party debt due to UTC and its affiliates of \$100 million as of December 31, 2019. The interest income and interest expense related to the activity with UTC that was included in Otis' results is presented on a net basis in the Consolidated Statements of Operations as this is settled in cash. Interest income and interest expense on the activity with our former parent UTC in 2019 was \$23 million and \$18 million, respectively. There was no interest income or interest expense activity with our former parent, UTC, in 2021 or 2020. The total effect of the settlement of these related party transactions is reflected as a financing activity on the Consolidated Statements of Cash Flows for the historical periods presented.

Note 6: Accounts Receivable, Net

Accounts receivable, net consisted of the following as of December 31:

<i>(dollars in millions)</i>	2021	2020
Trade receivables	\$ 3,117	\$ 2,987
Unbilled receivables	109	104
Customer financing notes receivable	93	130
Miscellaneous receivables	88	88
	<u>3,407</u>	<u>3,309</u>
Less: allowance for expected credit losses	175	161
Balance	<u>\$ 3,232</u>	<u>\$ 3,148</u>

Credit Losses. We are exposed to credit losses primarily through our net sales of products and services to our customers which are recorded as Accounts Receivable, net on the Consolidated Balance Sheets. We evaluate each customer's ability to pay through assessing customer creditworthiness, historical experience and current economic conditions through a reasonable forecast period. Factors considered in our evaluation of assessing collectability and risk include: underlying value of any collateral or security interests, significant past due balances, historical losses and existing economic conditions including country and political risk. There can be no assurance that actual results will not differ from estimates or that consideration of these factors in the future will not result in an increase or decrease to the allowance for credit losses. We may require collateral or prepayment to mitigate credit risk.

We estimate expected credit losses of financial assets with similar risk characteristics. We determine an asset is impaired when our assessment identifies there is a risk that we will be unable to collect amounts due according to the contractual terms of the agreement. We monitor our ongoing credit exposure through reviews of customer balances against contract terms and due dates, current economic conditions and dispute resolution. Estimated credit losses are written off in the period in which the financial asset is no longer collectible.

The changes in allowance for credit losses related to Accounts receivable, net for the years ended December 31, 2021 and 2020 are as follows:

<i>(dollars in millions)</i>	2021	2020
Balance as of January 1	\$ 161	\$ 83
Impact of credit standard adoption	—	28
Provision for expected credit losses	37	40
Write-offs charged against the allowance for expected credit losses	(15)	(20)
Foreign exchange and other	(8)	30
Balance as of December 31	<u>\$ 175</u>	<u>\$ 161</u>

During 2020, there was approximately \$26 million of previously reserved balances reclassified to allowance for credit losses. As a result, there was no impact to the Consolidated Statements of Operations for 2020.

Note 7: Inventories, Net

<i>(dollars in millions)</i>	2021	2020
Raw materials and work-in-process	\$ 140	\$ 113
Finished goods	482	546
Total	<u>\$ 622</u>	<u>\$ 659</u>

Raw materials and work-in-process and Finished goods are net of valuation reserves of \$99 million and \$112 million as of December 31, 2021 and 2020, respectively.

Note 8: Fixed Assets

<i>(dollars in millions)</i>	Estimated Useful Lives	2021	2020
Land		\$ 43	\$ 48
Buildings and improvements	20 - 40 Years	596	616
Machinery and equipment	3 - 12 Years	1,166	1,175
Assets under construction		125	132
		1,930	1,971
Less: Accumulated depreciation		(1,156)	(1,197)
		<u>\$ 774</u>	<u>\$ 774</u>

Depreciation expense was \$116 million, \$100 million and \$85 million in 2021, 2020 and 2019, respectively.

In 2020, as a result of reviewing our technology strategies following the Separation, the Company recorded a pre-tax loss for the write-off of Assets under construction of approximately \$71 million within Other income (expense), net in the Consolidated Statements of Operations.

Fixed assets acquired during the year that are accrued within Accounts payable at year end is considered to be a non-cash investing activity and is excluded from cash used for capital expenditures in the Consolidated Statements of Cash Flows. Capital expenditures of \$2 million, \$15 million and \$8 million were accrued within Accounts payable in the Consolidated Balance Sheets as of December 31, 2021, 2020 and 2019, respectively.

Note 9: Business Acquisitions, Goodwill and Intangible Assets

Business Acquisitions. Our investments in businesses and intangible assets, net of cash acquired, totaled \$80 million, \$55 million (including debt assumed) and \$47 million in 2021, 2020 and 2019, respectively. The acquisitions and investments consisted of a number of acquisitions primarily in our Service segment. Transaction costs incurred were not considered significant.

In 2019, the Company recorded a pre-tax loss on the sale of a business of \$19 million within Other income (expense), net on the Consolidated Statement of Operations. There were no significant disposals of businesses for the years ended December 31, 2021 or 2020.

Goodwill. Changes in our Goodwill balances in 2021 were as follows:

<i>(dollars in millions)</i>	Balance as of January 1, 2021	Goodwill Resulting From Business Combinations	Foreign Currency Translation and Other	Balance as of December 31, 2021
New Equipment	\$ 357	\$ —	\$ (21)	\$ 336
Service	1,416	2	(87)	1,331
Total	<u>\$ 1,773</u>	<u>\$ 2</u>	<u>\$ (108)</u>	<u>\$ 1,667</u>

Changes in our Goodwill balances in 2020 were as follows:

<i>(dollars in millions)</i>	Balance as of January 1, 2020	Goodwill Resulting From Business Combinations	Foreign Currency Translation and Other	Balance as of December 31, 2020
New Equipment	\$ 337	\$ —	\$ 20	\$ 357
Service	1,310	30	76	1,416
Total	<u>\$ 1,647</u>	<u>\$ 30</u>	<u>\$ 96</u>	<u>\$ 1,773</u>

Intangible Assets. Identifiable intangible assets are comprised of the following:

(dollars in millions)	2021		2020	
	Gross Amount	Accumulated Amortization	Gross Amount	Accumulated Amortization
Amortized:				
Purchased service portfolios	\$ 2,025	\$ (1,638)	\$ 2,123	\$ (1,661)
Patents, trademarks/trade names	21	(17)	22	(16)
Customer relationships and other	64	(43)	54	(45)
	<u>2,110</u>	<u>(1,698)</u>	<u>2,199</u>	<u>(1,722)</u>
Unamortized:				
Trademarks and other	7	—	7	—
Total	<u>\$ 2,117</u>	<u>\$ (1,698)</u>	<u>\$ 2,206</u>	<u>\$ (1,722)</u>

Fully amortized service portfolios of \$117 million were written off during 2020.

Amortization of intangible assets was \$87 million, \$91 million and \$95 million in 2021, 2020 and 2019, respectively. Excluding the impact of currency translation adjustments, there were no other significant changes in our Intangible Assets during 2021, 2020 and 2019.

The estimated future amortization of intangible assets is as follows:

(dollars in millions)	2022	2023	2024	2025	2026
Future amortization	\$ 81	\$ 69	\$ 61	\$ 54	\$ 40

Note 10: Borrowings and Lines of Credit

(dollars in millions)	2021	2020
Commercial paper	\$ —	\$ 664
Other borrowings	24	37
Total short-term borrowings	<u>\$ 24</u>	<u>\$ 701</u>

Commercial Paper. As of December 31, 2021, we had an aggregate \$1.5 billion unsecured, unsubordinated commercial paper programs in place, and no borrowings outstanding under such programs. We use our commercial paper borrowings for general corporate purposes including to finance acquisitions, pay dividends and for debt refinancing. The need for commercial paper borrowings may arise if the use of domestic cash for general corporate purposes exceeds the sum of domestic cash generation and foreign cash repatriated to the U.S.

In September 2020, we issued €420 million of Euro denominated commercial paper. The Euro denominated commercial paper, while outstanding, qualified as a net investment hedge against our investments in European businesses. During 2021, we fully repaid the Euro denominated commercial paper and there is no longer a related net investment hedge as of December 31, 2021. Refer to Note 18, "Financial Instruments" for further details on net investment hedges.

We also issued \$150 million of U.S. Dollar commercial paper in November 2020, which was fully repaid during 2021. The commercial paper issued in 2020 was used to pay down the term loan described further below under "Long-term debt".

Long-term debt. As of December 31, 2021, we have a credit agreement, as amended, with various banks providing for a \$1.5 billion unsecured, unsubordinated 5-year revolving credit facility, effective as of April 3, 2020, with an interest rate of LIBOR plus 125 basis points and a commitment fee rate of 12.5 basis points. As of December 31, 2021, there were no borrowings under the revolving credit facility. The undrawn portion of the revolving credit facility serves as a backstop for the issuance of commercial paper.

On February 10, 2020, we entered into a term loan credit agreement, as amended, providing for a \$1.0 billion unsecured, unsubordinated 3-year term loan credit facility (the "term loan"). The Company drew on the full amount of the term loan on March 27, 2020 and then prepaid the full amount during 2020, resulting in the termination of the term loan credit agreement. Additionally, on February 27, 2020, we issued \$5.3 billion unsecured, unsubordinated notes. The net proceeds of the term loan and the notes of approximately \$6.3 billion were distributed to our former parent, UTC, prior to the Separation.

On March 11, 2021, we issued ¥21.5 billion Japanese Yen denominated (\$199 million), unsecured, unsubordinated 5-year notes due March 2026 (the "Yen Notes"). The net proceeds of the Yen Notes were used to repay a portion of our outstanding Euro denominated commercial paper. The Yen Notes qualify as a net investment hedge against our investments in Japanese businesses. As of December 31, 2021, the net investment hedge is deemed to be effective. Refer to Note 18, "Financial Instruments" for further details on net investment hedges.

On September 22, 2021, we entered into a €1.65 billion bridge loan credit agreement (the "Bridge Credit Facility") and related guarantees in connection with the Tender Offer, which was intended to be drawn only to the extent we did not obtain permanent debt financing prior to the settlement date of the Tender Offer. On November 12, 2021, we issued €1.6 billion Euro denominated (\$1.8 billion), unsecured, unsubordinated notes (the "Euro Notes"). The net proceeds of the Euro Notes will be used to fund the Tender Offer. Upon issuing the Euro Notes, the Bridge Credit Facility and related guarantees were terminated.

The revolving credit agreement and indentures contain affirmative and negative covenants customary for financings of these types that, among other things, limit the Company's and its subsidiaries' ability to incur additional liens, to make certain fundamental changes and to enter into sale and leaseback transactions. In addition, the revolving credit agreement requires that we maintain a maximum consolidated leverage ratio, as defined in the agreement. The revolving credit agreement and indentures also contain events of default customary for financings of these types. The Company is in compliance with all covenants in the revolving credit agreement and the indentures governing all notes as of December 31, 2021.

Long-term debt consisted of the following as of December 31:

<i>(dollars in millions)</i>	2021	2020
LIBOR plus 45 bps floating rate notes due 2023 ^{1,2}	\$ 500	\$ 500
0.000% notes due 2023 (€500 million principal value) ²	565	—
2.056% notes due 2025 ²	1,300	1,300
0.37% notes due 2026 (¥21.5 billion principal value) ²	189	—
0.318% notes due 2026 (€600 million principal value) ²	677	—
2.293% notes due 2027 ²	500	500
2.565% notes due 2030 ²	1,500	1,500
0.934% notes due 2031 (€500 million principal value) ²	565	—
3.112% notes due 2040 ²	750	750
3.362% notes due 2050 ²	750	750
Other (including finance leases)	4	5
Total principal long-term debt	\$ 7,300	\$ 5,305
Other (premiums, discounts and debt issuance costs)	(51)	(43)
Total long-term debt	7,249	5,262
Less: current portion	—	—
Long-term debt, net of current portion	\$ 7,249	\$ 5,262

¹ The three-month LIBOR rate as of December 31, 2021 was approximately 0.21%.

² We may redeem these notes at our option pursuant to certain terms.

Debt issuance costs are presented as a reduction of debt on the Consolidated Balance Sheets and are amortized as a component of interest expense over the term of the related debt using the effective interest method. The Consolidated Statements of Operations for the years ended December 31, 2021, 2020 and 2019 reflects the following:

<i>(dollars in millions)</i>	2021	2020	2019
Debt issuance costs amortization	\$ 6	\$ 5	\$ —
Total interest expense on debt (including debt issuance costs amortization)	136	124	—

The unamortized debt issuance costs as of December 31, 2021 and 2020 were \$51 million and \$43 million, respectively. In addition to interest on debt, Interest expense (income), net on the Consolidated Statements of Operations in 2021 includes the write-off of \$11 million in financing costs associated with the Bridge Credit Facility and related guarantees that were terminated.

The average maturity of our long-term debt as of December 31, 2021 is approximately 8.9 years. The average interest expense rate on our borrowings as of December 31, 2021 and 2020 was as follows:

	December 31,	
	2021	2020
Short-term borrowings	— %	(0.2)%
Total long-term debt	1.9 %	2.4 %

The average interest expense rate on our borrowings for the years ended December 31, 2021 and 2020 was as follows:

	2021	2020
Short-term borrowings	(0.3)%	(0.2)%
Total long-term debt	2.3 %	2.3 %

The schedule of principal payments required on long-term debt for the next five years and thereafter is:

<i>(dollars in millions)</i>	Principal Payments
2022	\$ —
2023	1,066
2024	1
2025	1,301
2026	867
Thereafter	4,065
Total	\$ 7,300

Note 11: Accrued Liabilities

<i>(dollars in millions)</i>	2021	2020
Accrued salaries, wages and employee benefits	\$ 603	\$ 556
Accrued interest	221	223
Operating lease liabilities	181	167
Accrued income taxes payable	142	182
VAT and other non-income tax payables	97	102
Other liabilities	749	747
Total	\$ 1,993	\$ 1,977

Accrued interest primarily consists of interest accrued for uncertain tax positions and the German tax litigation as described in Note 22, "Contingent Liabilities", as well as \$46 million and \$45 million of interest accrued for borrowings as of December 31, 2021 and 2020, respectively, as described in Note 10, "Borrowings and Lines of Credit".

Note 12: Other Long-term Liabilities

<i>(dollars in millions)</i>	2021	2020
Contractual indemnity obligation	\$ 220	\$ 239
General, product and auto liability	154	152
Employee benefits	105	113
Other liabilities	127	130
Total	<u>\$ 606</u>	<u>\$ 634</u>

The Contractual indemnity obligation consists of a payable to RTX, resulting from the TMA. See Note 5, "Related Parties" for further details.

Note 13: Employee Benefit Plans

The Company sponsors numerous single-employer domestic and international employee benefit plans and, prior to the Separation, certain of our employees participated in employee benefit plans ("Shared Plans") sponsored by our former parent, UTC, that included participants of the other UTC businesses. We have accounted for our participation in the Shared Plans prior to the Separation as multiemployer benefit plans, as discussed below.

Employee Savings Plans. We sponsor various employee savings plans. Prior to the Separation, our former parent, UTC, also sponsored and contributed to defined contribution employee savings plans in which certain Otis employees participated. Our contributions to employer-sponsored defined contribution plans were \$62 million, \$54 million and \$41 million for 2021, 2020, and 2019, respectively.

Pension Plans. We sponsor both funded and unfunded domestic and international defined benefit pension plans that cover a large number of our employees. While we sponsor domestic pension plans that provide retirement benefits to certain employees, they are not a material component of the projected benefit obligation. Our plans use a December 31 measurement date consistent with our fiscal year.

<i>(dollars in millions)</i>	2021	2020
Change in benefit obligation:		
Beginning balance	\$ 1,225	\$ 1,092
Service cost	43	40
Interest cost	13	16
Actuarial (gain) loss	(50)	40
Benefits paid	(24)	(28)
Net settlement, curtailment and special termination benefits	(31)	(26)
Other	(50)	91
Ending balance	<u>\$ 1,126</u>	<u>\$ 1,225</u>
Change in plan assets:		
Beginning balance	\$ 703	\$ 622
Actual return on plan assets	43	24
Employer contributions	37	64
Benefits paid	(24)	(28)
Settlements	(31)	(26)
Other	(38)	47
Ending balance	<u>\$ 690</u>	<u>\$ 703</u>
Funded status:		
Fair value of plan assets	\$ 690	\$ 703
Benefit obligations	(1,126)	(1,225)
Funded status of plan	<u>\$ (436)</u>	<u>\$ (522)</u>
Amounts recognized in the Consolidated Balance Sheets consist of:		
Noncurrent assets	\$ 106	\$ 87
Current liability	(23)	(21)
Noncurrent liability	(519)	(588)
Net amount recognized	<u>\$ (436)</u>	<u>\$ (522)</u>
Amounts recognized in Accumulated other comprehensive loss consist of:		
Net actuarial loss	\$ 176	\$ 280
Prior service credit	2	(1)
Net amount recognized	<u>\$ 178</u>	<u>\$ 279</u>

The amounts included in "actuarial (gain) loss" in the above table primarily are due to changes in discount rate assumptions driven by changes in corporate bond yields. The amounts included in "Other" in the above table primarily reflect the impact of foreign exchange translation, primarily for plans in Australia, Canada, Germany, Japan, Spain, South Korea and Switzerland.

In 2021, 2020 and 2019 we made cash contributions to our defined benefit pension plans of \$37 million, \$64 million and \$32 million, respectively.

Information for pension plans with accumulated benefit obligations in excess of plan assets:

<i>(dollars in millions)</i>	2021	2020
Projected benefit obligation	\$ 567	\$ 787
Accumulated benefit obligation	499	685
Fair value of plan assets	49	205

Information for pension plans with projected benefit obligations in excess of plan assets:

<i>(dollars in millions)</i>	2021	2020
Projected benefit obligation	\$ 806	\$ 991
Accumulated benefit obligation	694	846
Fair value of plan assets	263	383

The accumulated benefit obligation for all defined benefit pension plans was \$1.0 billion and \$1.1 billion as of December 31, 2021, and 2020, respectively.

The components of the net periodic pension cost are as follows:

<i>(dollars in millions)</i>	2021	2020	2019
Service cost	\$ 43	\$ 40	\$ 33
Interest cost	13	16	21
Expected return on plan assets	(23)	(25)	(24)
Amortization of prior service credit	—	(1)	(1)
Recognized actuarial net loss	18	16	10
Net settlement, curtailment and special termination benefits loss (gain)	2	5	2
Net periodic pension cost – employer	<u>\$ 53</u>	<u>\$ 51</u>	<u>\$ 41</u>

Other changes in plan assets and benefit obligations recognized in other comprehensive loss are as follows:

<i>(dollars in millions)</i>	2021	2020	2019
Current year actuarial (gain) loss	\$ (70)	\$ 41	\$ 28
Amortization of actuarial loss	(18)	(16)	(10)
Amortization of prior service credit	—	1	1
Net settlement and curtailment (loss) gain	(2)	(5)	(2)
Other	(11)	24	27
Total recognized in other comprehensive (income) loss	<u>\$ (101)</u>	<u>\$ 45</u>	<u>\$ 44</u>
Net recognized in net periodic pension cost and other comprehensive (income) loss	<u>\$ (48)</u>	<u>\$ 96</u>	<u>\$ 85</u>

The amounts included in “Other” in the above table primarily reflect the impact of foreign exchange translation, primarily for plans in Australia, France, Germany, Canada and Switzerland.

Major assumptions used in determining the benefit obligation and net cost for pension plans are presented in the following table as weighted-averages:

	Benefit Obligation		Net Cost		
	2021	2020	2021	2020	2019
Discount rate:					
Projected benefit obligation	1.5 %	1.1 %	1.1 %	1.5 %	2.5 %
Salary scale	3.0 %	3.0 %	3.0 %	3.1 %	3.3 %
Expected return on plan assets	—	—	3.6 %	4.5 %	5.2 %
Interest crediting rate	1.0 %	0.6 %	0.6 %	0.7 %	1.5 %

The weighted-average discount rates used to measure pension benefit obligations and net costs are set by reference to specific analyses using each plan's specific cash flows and are then comparing them to high-quality bond indices for reasonableness.

In determining the expected return on plan assets, we consider the relative weighting of plan assets, the historical performance of total plan assets and individual asset classes, and economic and other indicators of future performance. In addition, we may consult with, and consider the opinions of, financial and other professionals in developing appropriate capital market assumptions. Return projections are also validated using a simulation model that incorporates yield curves, credit spreads and risk premiums to project long-term prospective returns.

The plans' investment management objectives include providing the liquidity and asset levels needed to meet current and future benefit payments, while maintaining a prudent degree of portfolio diversification considering interest rate risk and market volatility. Globally, investment strategies target a mix of approximately 50% of growth-seeking assets and 50% of income-generating and hedging assets using a wide diversification of asset types, fund strategies and investment managers. The growth seeking allocation consists of global public equities in developed and emerging countries, and alternative-asset class strategies. Within the income-generating assets, the fixed income portfolio consists of mainly government and broadly diversified high-quality corporate bonds.

The fair values of pension plan assets as of December 31, 2021 and 2020 by asset category are as follows:

<i>(dollars in millions)</i>	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Not Subject to Leveling	Total
Asset category					
Public equities:					
Global Equity Commingled Funds ⁽¹⁾	\$ 70	\$ 2	\$ —	\$ —	\$ 72
Global Equity Funds at net asset value ⁽⁵⁾	—	—	—	196	196
Fixed income securities:					
Governments	19	—	—	—	19
Corporate Bonds	42	1	—	—	43
Fixed income securities at net asset value ⁽⁵⁾	—	—	—	117	117
Real estate ^{(2) (5)}	11	14	—	11	36
Other ^{(3) (5)}	4	126	—	24	154
Cash and cash equivalents ^{(4) (5)}	4	1	—	44	49
Total	\$ 150	\$ 144	\$ —	\$ 392	686
Other assets and liabilities ⁽⁶⁾					4
Total as of December 31, 2021					\$ 690

<i>(dollars in millions)</i>	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Not Subject to Leveling	Total
Asset category					
Public equities:					
Global Equity Commingled Funds ⁽¹⁾	\$ 52	\$ 39	\$ —	\$ —	\$ 91
Global Equity Funds at net asset value ⁽⁵⁾	—	—	—	154	154
Fixed income securities:					
Governments	20	41	—	—	61
Corporate Bonds	49	4	—	—	53
Fixed income securities at net asset value ⁽⁵⁾	—	—	—	90	90
Real estate ^{(2) (5)}	12	6	—	12	30
Other ^{(3) (5)}	2	129	—	25	156
Cash and cash equivalents ^{(4) (5)}	6	1	—	41	48
Total	\$ 141	\$ 220	\$ —	\$ 322	\$ 683
Other assets and liabilities ⁽⁶⁾					20
Total as of December 31, 2020					\$ 703

⁽¹⁾ Represents investments in mutual funds and investments in commingled funds that invest primarily in common stocks.

⁽²⁾ Represents investments in real estate including commingled funds.

⁽³⁾ Represents insurance contracts and global-balanced-risk commingled funds consisting mainly of equity, bonds and some commodities.

⁽⁴⁾ Represents short-term commercial paper, bonds and other cash or cash-like instruments.

⁽⁵⁾ In accordance with FASB ASU 2015-07, Fair Value Measurement (Topic 820), certain investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented for the total pension benefits plan assets.

⁽⁶⁾ Represents trust receivables and payables that are not leveled.

Quoted market prices are used to value investments when available. Investments in securities traded on exchanges, including listed futures and options, are valued at the last reported sale prices on the last business day of the year or, if not available, the last reported bid prices. Fixed income securities are primarily measured using a market approach pricing methodology, where observable prices are obtained by market transactions involving identical or comparable securities of issuers with similar credit ratings. Over-the-counter securities and government obligations are valued at the bid prices or the average of the bid and ask prices on the last business day of the year from published sources or, if not available, from other sources considered reliable, generally broker quotes. Temporary cash investments are stated at cost, which approximates fair value.

We expect to make total contributions of approximately \$34 million to our global defined benefit pension plans in 2022, including benefit payments to be paid directly from corporate assets.

Benefit payments, including amounts to be paid from corporate assets, and reflecting expected future service, as appropriate, are expected to be paid as follows: \$60 million in 2022, \$65 million in 2023, \$62 million in 2024, \$66 million in 2025, \$66 million in 2026, and \$339 million from 2027 through 2031.

Postretirement Benefit Plans. We sponsor postretirement benefit plans that provide health benefits to eligible retirees. The postretirement plans are unfunded. The benefit obligation was \$10 million and \$11 million as of December 31, 2021, and 2020, respectively. The net periodic cost was \$1 million for 2021, 2020 and 2019, respectively. Other comprehensive gain of \$1 million was recognized during 2021 and other comprehensive loss of \$2 million was recognized during 2020, related to changes in benefit obligations.

The projected benefit obligation discount rate was 5.0% and 4.3% as of December 31, 2021 and 2020, respectively. The Net Cost discount rate was 4.3%, 4.7% and 5.3% for 2021, 2020 and 2019, respectively.

Benefit payments, including amounts to be paid from corporate assets, and reflecting expected future service, as appropriate, are expected to be paid as follows: \$1 million each year from 2022 through 2026, and \$3 million from 2027 through 2031.

Multiemployer Benefit Plans. We contribute to various domestic and international multiemployer defined benefit pension plans. The risks of participating in these multiemployer plans are different from single-employer plans in that assets contributed are pooled and may be used to provide benefits to employees of other participating employers. If a participating employer stops contributing to the plan, the unfunded obligations of the plan may be borne by the remaining participating employers. Lastly, if we choose to stop participating in some of our multiemployer plans, we may be required to pay those plans a withdrawal liability based on the underfunded status of the plan.

Our participation in these plans for the annual periods ended December 31 is outlined in the table below. Unless otherwise noted, the most recent Pension Protection Act (“PPA”) zone status available in 2021 and 2020 is for the plan’s year-end at June 30, 2020 and June 30, 2019, respectively. The zone status is based on information that we received from the plan and is certified by the plan’s actuary. Our significant plan is in the green zone which represents a plan that is at least 80% funded and does not require a financial improvement plan (“FIP”) or a rehabilitation plan (“RP”). An extended amortization provision of ten years was utilized to recognize investment gains or losses for our significant plan through June 30, 2019.

<i>(dollars in millions)</i>		PPA Zone Status		FIP/RP Status	Contributions			Surcharge Imposed	Expiration Date of Collective-Bargaining Agreement
Pension Fund	EIN/Pension Plan Number	2021	2020	Pending/Implemented	2021	2020	2019		
National Elevator Industry Pension Plan	23-2694291	Green	Green	No	\$ 128	\$ 131	\$ 127	No	7/8/2022
Other funds					8	7	9		
					<u>\$ 136</u>	<u>\$ 138</u>	<u>\$ 136</u>		

For the plan years ended June 30, 2020 and 2019, respectively, we were listed in the National Elevator Industry Pension Plan’s Forms 5500 as providing more than 5% of the total contributions for the plan. At the date these financial statements were

issued, the Form 5500 was not available for the plan year ending June 30, 2021.

In addition, we participate in multiemployer arrangements that provide postretirement benefits other than pensions, with the National Elevator Industry Health Benefit Plan being the most significant. These arrangements generally provide medical and life benefits for eligible active employees and retirees and their dependents. Contributions to multiemployer plans that provide postretirement benefits other than pensions were \$20 million, \$20 million and \$21 million for 2021, 2020 and 2019, respectively.

UTC Sponsored Defined Benefit Plans. Defined benefit pension and postretirement benefit plans were sponsored by our former parent, UTC, and have been accounted for as multi-employer plans in these Consolidated Financial Statements, in accordance with FASB ASC Topic 715-30: *Defined Benefit Plans – Pension* and FASB ASC Topic 715-60: *Defined Benefit Plans – Other Postretirement*. The Company's participation in the defined pension and postretirement benefit plans sponsored by our former parent, UTC, concluded upon the completion of the Separation. The amounts for pension and postretirement expenses for Service cost and Non-service pension benefit were \$1 million and \$5 million, respectively, in 2020, and \$15 million and \$42 million, respectively, in 2019.

Stock-based Compensation. In connection with the Separation, the Company adopted the 2020 Long-Term Incentive Plan (the "Plan"). The Plan became effective on April 3, 2020. A total of 45 million shares of common stock are authorized under the Plan. The Plan provides for the grant of various types of awards including restricted share unit awards, stock appreciation rights, stock options, and performance-based awards. Under the Plan, the exercise price of awards, if any, is set on the grant date and may not be less than the fair market value per share on that date. Generally, stock appreciation rights and stock options have a term of ten years and a three-year vesting period, subject to limited exceptions. In the event of retirement, annual stock appreciation rights, stock options, and restricted share units held for more than one year may become vested and exercisable (if applicable), subject to certain terms and conditions. Awards with performance-based vesting generally have a minimum three-year vesting period and vest based on actual performance against pre-established metrics. In the event of retirement, performance-based awards held for more than one year remain eligible to vest based on actual performance relative to target metrics. All other restricted awards generally have a three-year vesting period. We currently intend to issue new shares for share option exercises and conversions under our equity compensation arrangements, and will continue to evaluate this policy in connection with our share repurchase program. As of December 31, 2021, approximately 26 million shares remain available for awards under the 2020 Plan.

In connection with the Separation, and in accordance with the EMA, the Company's employees with outstanding former UTC stock-based awards received replacement stock-based awards under the Plan at Separation. The value of the replaced stock-based awards was designed to preserve the aggregate intrinsic value of the award immediately after the Separation when compared to the aggregate intrinsic value of the award immediately prior to Separation. The incremental expense incurred by the Company was not material.

Prior to the Separation, certain of the Company's employees participated in stock-based compensation plans sponsored by our former parent, UTC. The UTC stock-based compensation plans included various types of market and performance-based incentive awards, including stock options, stock appreciation rights, restricted stock units, and performance-based share units. All awards granted under the plans were based on UTC common shares, and only the activity attributable to Otis employees from these awards, as converted at the Separation, is reflected in the accompanying Consolidated Financial Statements for the years ended December 31, 2021 and 2020.

Stock-based Compensation Expense

We measure the cost of all share-based payments, including stock options, at fair value on the grant date and recognize this cost in the Consolidated Statements of Operations. A forfeiture rate assumption is applied on grant date to adjust the expense recognition for awards that are not expected to vest.

Stock-based compensation expense and the resulting tax benefits were as follows:

(dollars in millions)	Year Ended		
	2021	2020	2019
Stock-based compensation expense (Share-based)	\$ 65	\$ 63	\$ 37
Stock-based compensation expense (Cash-based)	2	(4)	10
Total gross stock-based compensation expense	67	59	47
Less: future tax benefit	8	7	5
Stock-based compensation expense, net of tax	\$ 59	\$ 52	\$ 42

For periods prior to the Separation, stock-based compensation expense includes expense attributable to Otis, and the fair value assumptions are based on the awards and terms previously granted under the UTC incentive compensation plan to Otis employees. Accordingly, the amounts presented for the years ended December 31, 2020 and 2019 are not necessarily indicative of future awards and do not necessarily reflect the results that Otis would have experienced as an independent publicly-traded company.

For the years ended December 31, 2021, 2020 and 2019, the amount of cash received from the exercise of stock options was \$4 million, \$3 million and \$10 million, respectively, with an associated tax benefit realized of \$4 million, \$2 million and \$6 million, respectively. In addition, for the years ended December 31, 2021, 2020 and 2019, the associated tax benefit realized from the vesting of performance share units and other restricted awards was \$4 million, \$1 million and \$4 million, respectively. The 2021 and 2020 amounts were computed using current U.S. federal and state tax rates.

As of December 31, 2021, there was approximately \$57 million of total unrecognized compensation cost related to non-vested equity awards granted under the Plan. This cost is expected to be recognized ratably over a weighted-average period of 2.0 years.

A summary of the transactions under Otis' plans for the year ended December 31, 2021 follows:

(shares in thousands)	Stock Appreciation Rights		Restricted Share Units		Performance Share Units		Stock Options	
	Shares	Average Price*	Shares	Average Price**	Shares	Average Price**	Shares	Average Price*
Outstanding at:								
December 31, 2020	12,177	\$ 60.63	1,710	\$ 63.94	—	\$ —	454	\$ 55.31
Granted ⁽¹⁾	1,344	64.81	483	68.67	334	67.58	19	71.93
Exercised / Earned ⁽¹⁾	(2,269)	51.67	(458)	68.31	—	—	(96)	46.41
Cancelled	(537)	66.72	(83)	67.60	(4)	67.71	(1)	80.97
December 31, 2021	10,715	\$ 62.74	1,652	\$ 63.91	330	\$ 67.58	376	\$ 58.31

* Weighted-average grant price

** Weighted-average grant fair value

⁽¹⁾ Includes annual retainer awards issued to the Board of Directors

The weighted-average grant date fair value of stock options and stock appreciation rights granted by Otis and our former parent, UTC, during 2021, 2020 and 2019 was \$14.83, \$10.38 and \$20.92, respectively. The weighted-average grant date fair value of performance share units, which vest upon achieving certain performance metrics, and other restricted stock awards granted by Otis and UTC during 2021, 2020 and 2019 was \$68.22, \$54.29 and \$109.17, respectively. The total intrinsic value (which is the amount by which the stock price exceeded the exercise price on the date of exercise) of stock options and stock appreciation rights exercised during 2021, 2020 and 2019 was \$74 million, \$13 million and \$53 million, respectively. The total fair value (which is the stock price at vesting) of performance share units and other restricted awards vested was \$32 million, \$10 million and \$33 million during the years ended December 31, 2021, 2020 and 2019, respectively.

The following table summarizes information about equity awards outstanding that are vested and expected to vest and equity awards outstanding that are exercisable as of December 31, 2021:

(shares in thousands; aggregate intrinsic value in millions)	Equity Awards Vested and Expected to Vest				Equity Awards That Are Exercisable			
	Awards	Average Price*	Aggregate Intrinsic Value	Remaining Term**	Awards	Average Price*	Aggregate Intrinsic Value	Remaining Term**
Stock Options/Stock Appreciation Rights	11,027	\$ 62.53	\$ 271	5.4 years	6,846	\$ 57.62	\$ 202	3.9 years
Performance Share Units/ Restricted Stock	1,921	—	\$ 167	1.4 years				

* Weighted-average grant price per share

** Weighted-average contractual remaining term in years

The fair value of each option award is estimated on the date of grant using a binomial lattice model. The following table indicates the assumptions used in estimating fair value for the years ended December 31, 2021, 2020 and 2019. For periods prior to the Separation, these assumptions represent those utilized by our former parent, UTC, and are not necessarily indicative of assumptions that would be used by Otis as a standalone company. Lattice-based option models incorporate ranges of assumptions for inputs; those ranges are as follows:

	2021	2020	2019
Expected volatility	26.9%	25.5%	18.8% - 19.7%
Weighted-average volatility	26.9%	25.5%	19.5%
Expected term (in years)	6.3	6.8	6.5 - 6.6
Expected dividend yield	1.3%	1.8%	2.4%
Risk-free rate	0.7%	0.5%	2.3% - 2.7%

Due to the lack of trading history of Otis' stock at the time of valuation efforts, the expected volatility for Otis was calculated based on the average of the volatility of the peer group within the industry. UTC's historical data for Otis employees was used to estimate equity award exercise and employee termination behavior within the valuation model. The expected term represents an estimate of the period of time equity awards are expected to remain outstanding. The risk-free rate is based on the term structure of interest rates at the time of equity award grant.

The Company uses a Monte Carlo simulation approach based on a three-year measurement period to determine fair value of performance share units. This approach includes the use of assumptions regarding the future performance of the Company's stock and those of a peer group. Those assumptions include expected volatility, risk-free interest rates, correlations and dividend yield.

Note 14: Stock

Preferred Stock. There are 125 million shares of \$0.01 par value authorized Preferred Stock, of which none were issued or outstanding as of December 31, 2021 or 2020.

Common Stock. There are 2 billion shares of \$0.01 par value Common Stock authorized. As of December 31, 2021, 434.7 million shares of Common Stock were issued, which includes 9.7 million shares of treasury stock. As of December 31, 2020, 433.4 million shares of Common Stock were issued and outstanding.

Share Repurchase Program. As of December 31, 2021, the Company was authorized by the Board of Directors to purchase up to \$1 billion of Common Stock under a share repurchase program, of which \$725 million had been utilized. During 2021, the Company repurchased 9.7 million shares of Common Stock for approximately \$725 million. The Company's share repurchase program does not obligate it to acquire any specific number of shares. Under this program, shares may be purchased on the open market, in privately negotiated transactions, under accelerated share repurchase programs or under plans complying with rules 10b5-1 and 10b-18 under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). As a result of the increased debt incurred to fund the Tender Offer, we have temporarily suspended our share repurchases as we focus on deleveraging.

Note 15: Accumulated Other Comprehensive Income (Loss)

A summary of the changes in each component of Accumulated other comprehensive income (loss), net of tax for the years ended December 31, 2021, 2020 and 2019 is provided below:

<i>(dollars in millions)</i>	Foreign Currency Translation	Defined Benefit Pension and Postretirement Plans	Unrealized Hedging Gains (Losses)	Accumulated Other Comprehensive Income (Loss)
Balance as of December 31, 2018	\$ (573)	\$ (135)	\$ —	\$ (708)
Other comprehensive income (loss) before reclassifications, net	(15)	(50)	(3)	(68)
Amounts reclassified, pre-tax	—	9	—	9
Tax expense (benefit) reclassified	—	9	—	9
Balance as of December 31, 2019	\$ (588)	\$ (167)	\$ (3)	\$ (758)
Other comprehensive income (loss) before reclassifications, net	(28)	(47)	10	(65)
Amounts reclassified, pre-tax	—	15	(3)	12
Tax expense (benefit) reclassified	—	(4)	—	(4)
Balance as of December 31, 2020	\$ (616)	\$ (203)	\$ 4	\$ (815)
Other comprehensive income (loss) before reclassifications, net	(26)	62	(1)	35
Amounts reclassified, pre-tax	—	18	4	22
Tax expense (benefit) reclassified	—	(5)	—	(5)
Balance as of December 31, 2021	\$ (642)	\$ (128)	\$ 7	\$ (763)

Amounts reclassified that relate to defined benefit pension and postretirement plans include amortization of prior service costs and actuarial net losses recognized during each period presented. These costs are recorded as components of net periodic pension cost for each period presented. See Note 13, "Employee Benefit Plans" for additional information.

Note 16: Income Taxes

Income Before Income Taxes. The sources of income from operations before income taxes are:

<i>(dollars in millions)</i>	2021	2020	2019
United States	\$ 420	\$ 105	\$ 470
Foreign	1,541	1,406	1,391
	<u>\$ 1,961</u>	<u>\$ 1,511</u>	<u>\$ 1,861</u>

Following enactment of the TCJA, and as part of the historical UTC assertion, the Company determined that it no longer intends to reinvest certain undistributed earnings of its international subsidiaries that have been previously taxed in the U.S. As such, in 2018 Otis recorded the international taxes associated with the future remittance of these earnings. As part of the Separation process, the Company re-assessed this position as a standalone company. The Company no longer intends to reinvest certain undistributed earnings of its international subsidiaries that have been previously taxed in the U.S. The international taxes recorded relative to this assertion differ from those recorded in 2018. As a result of the change in assertion and changes in planned debt repayments and in estimates related to Otis' pre-Separation tax attributes, the Company recognized two benefits: one of \$10 million during the year ended December 31, 2020, and one of \$16 million during the year ended December 31, 2021. For the remainder of the Company's undistributed international earnings, unless tax effective to repatriate, Otis will continue to permanently reinvest these earnings. As of December 31, 2021, such undistributed earnings were approximately \$5.1 billion, excluding other comprehensive income amounts. It is not practicable to estimate the amount of tax that might be payable on the remaining amounts.

Provision for Income Taxes. The income tax expense (benefit) for the years ended December 31, 2021, 2020 and 2019 consisted of the following components:

<i>(dollars in millions)</i>	2021	2020	2019
Current:			
United States:			
Federal	\$ 77	\$ 42	\$ 103
State	32	26	38
Foreign	524	438	461
	<u>633</u>	<u>506</u>	<u>602</u>
Future:			
United States:			
Federal	(13)	8	11
State	(6)	(8)	—
Foreign	(73)	(51)	(19)
	<u>(92)</u>	<u>(51)</u>	<u>(8)</u>
Income tax expense	<u>\$ 541</u>	<u>\$ 455</u>	<u>\$ 594</u>
Attributable to items (charged) credited to (deficit) equity	<u>\$ (25)</u>	<u>\$ (6)</u>	<u>\$ (14)</u>

Reconciliation of Effective Income Tax Rate. Differences between effective income tax rates and the statutory U.S. federal income tax rate are as follows:

	2021	2020	2019
Statutory U.S. federal income tax rate	21.0 %	21.0 %	21.0 %
State income taxes	0.8 %	0.9 %	1.7 %
Tax on international activities	4.7 %	4.4 %	6.5 %
U.S. tax effect of foreign earnings	0.5 %	3.4 %	2.9 %
Other	0.6 %	0.4 %	(0.2)%
Effective income tax rate	<u>27.6 %</u>	<u>30.1 %</u>	<u>31.9 %</u>

The 2021, 2020, and 2019 effective tax rates are higher than the statutory U.S. rate primarily due to higher international tax rates as compared to the lower U.S. federal statutory rate and foreign earnings subject to U.S. tax under the provisions of the TCJA.

The 2021 effective tax rate is lower than the 2020 effective tax rate primarily due to a \$16 million tax benefit related to the repatriation of foreign earnings as a result of changes to planned debt repayments and in estimates related to Otis' pre-Separation tax attributes and a decrease of \$16 million in U.S. tax related to base erosion and anti-abuse tax in 2021. In addition, the lower effective tax rate is due to the absence of the tax cost resulting from Separation-related expenses and fixed asset impairment in 2020, and the net impact of income tax settlements related to the Separation, as discussed in Note 5, "Related Parties".

The 2020 effective tax rate is lower than the 2019 effective tax rate primarily due to a \$10 million tax benefit related to our change in assertion of no longer intending to reinvest certain undistributed earnings of our international subsidiaries made during 2020 as compared to the liability previously recorded by UTC, a decrease as a result of tax regulations related to the TCJA that were enacted during 2020, as well as a recognition of a Separation-related foreign tax loss, all partially offset by incremental withholding taxes in 2020.

Deferred Tax Assets and Liabilities. Future income taxes represent the tax effects of transactions which are reported in different periods for tax and financial reporting purposes. These amounts consist of the tax effects of temporary differences between the tax and financial reporting balance sheets and tax carryforwards. Future income tax benefits and payables within the same tax paying component of a particular jurisdiction are offset for presentation in the Consolidated Balance Sheets.

The tax effects of temporary differences and tax carryforwards which gave rise to future income tax benefits and payables as of December 31, 2021 and 2020 are as follows:

<i>(dollars in millions)</i>	2021	2020
Future income tax benefits:		
Insurance and employee benefits	\$ 185	\$ 201
Other asset basis differences	143	149
Other liability basis differences	320	299
Tax loss carryforwards	200	197
Tax credit carryforwards	46	38
Valuation allowances	(247)	(242)
	<u>\$ 647</u>	<u>\$ 642</u>
Future income taxes payable:		
Intangible assets	\$ 168	\$ 182
Other assets basis differences	284	335
	<u>\$ 452</u>	<u>\$ 517</u>

Valuation allowances have been established primarily for tax credit carryforwards, tax loss carryforwards, and certain foreign temporary differences to reduce the future income tax benefits to expected realizable amounts.

Tax Credit and Loss Carryforwards. As of December 31, 2021, tax credit carryforwards, principally state and foreign, and tax loss carryforwards, principally state and foreign, were as follows:

<i>(dollars in millions)</i>	Tax Credit Carryforwards	Tax Loss Carryforwards
Expiration period:		
2022-2026	\$ 1	\$ 53
2027-2031	14	20
2032-2041	1	71
Indefinite	30	668
	<u>\$ 46</u>	<u>\$ 812</u>

Unrecognized Tax Benefits. As of December 31, 2021, the Company had gross tax-effected unrecognized tax benefits of \$392 million, all of which, if recognized, would impact the effective tax rate. A reconciliation of the beginning and ending amounts of unrecognized tax benefits and interest expense related to unrecognized tax benefits for the years ended December 31, 2021, 2020 and 2019 is as follows:

<i>(dollars in millions)</i>	2021	2020	2019
Balance at January 1	\$ 397	\$ 379	\$ 380
Additions for tax positions related to the current year	23	16	18
Additions for tax positions of prior years	1	41	15
Reductions for tax positions of prior years	(22)	(31)	(15)
Settlements	(7)	(8)	(19)
Balance at December 31	<u>\$ 392</u>	<u>\$ 397</u>	<u>\$ 379</u>
Gross interest expense related to unrecognized tax benefits	\$ 2	\$ 10	\$ 8
Total accrued interest balance at December 31	<u>\$ 152</u>	<u>\$ 153</u>	<u>\$ 141</u>

Otis conducts business globally and, as a result, Otis or one or more of its subsidiaries files income tax returns in the U.S. federal jurisdiction and various state and foreign jurisdictions.

In the ordinary course of business, Otis could be subject to examination by taxing authorities throughout the world, including such major jurisdictions as Austria, Belgium, Brazil, Canada, China, France, Germany, Hong Kong, India, Italy, Japan, Mexico, Netherlands, Portugal, Russia, South Korea, Spain, Switzerland, the United Kingdom and the U.S. With few exceptions, Otis is no longer subject to U.S. federal, state and local, or non-U.S. income tax examinations for years before 2010.

A subsidiary of Otis engaged in litigation in Belgium received a favorable appellate court decision in 2018. The Belgian Tax Authorities appealed the decision to the Court of Cassation (the equivalent of Supreme Court in Belgium). On December 4, 2020, the Court of Cassation overturned the decision of the appellate court and remanded the case to the appellate court for reconsideration. It is not known how much time will elapse prior to the issuance of the appellate court's decision. The associated tax and interest have been fully reserved.

In the ordinary course of business, there is inherent uncertainty in quantifying our income tax positions. We assess our income tax positions and record tax benefits for all years subject to examination based upon management's evaluation of the facts, circumstances, and information available at the reporting date. It is reasonably possible that a range of a \$20 million increase to a \$360 million reduction of unrecognized tax benefits and a range of a \$5 million increase to a \$150 million reduction in associated interest may occur within the next 12 months as a result of additional worldwide uncertain tax positions, the closure of tax statutes, or the revaluation of current uncertain tax positions arising from the issuance of legislation, regulatory or other guidance or developments in examinations, in appeals or in the courts.

See Note 22, "Contingent Liabilities" for discussion regarding uncertain tax positions, included in the above range, related to pending litigation with respect to certain deductions claimed in Germany.

Note 17: Restructuring Costs

We initiate restructuring actions to keep our cost structure competitive. Charges generally arise from severance related to workforce reductions, and to a lesser degree, facility exit and lease termination costs associated with the consolidation of office and manufacturing operations.

During the years ended December 31, 2021, 2020 and 2019, we recorded pre-tax restructuring costs totaling \$56 million, \$77 million and \$54 million, respectively, for new and ongoing restructuring actions. We recorded restructuring charges in our operating segments as follows:

<i>(dollars in millions)</i>	2021	2020	2019
New Equipment	\$ 23	\$ 30	\$ 19
Service	33	47	35
Total	<u>\$ 56</u>	<u>\$ 77</u>	<u>\$ 54</u>

Restructuring charges incurred in the years ended December 31, 2021, 2020 and 2019 primarily relate to actions initiated during 2021, 2020 and 2019, and were recorded as follows:

<i>(dollars in millions)</i>	2021	2020	2019
Cost of products and services sold	\$ 22	\$ 22	\$ 19
Selling, general and administrative	34	55	35
Total	<u>\$ 56</u>	<u>\$ 77</u>	<u>\$ 54</u>

Restructuring Actions. During 2021, we recorded restructuring costs of \$41 million for restructuring actions initiated in 2021, consisting of \$13 million in Cost of products and services sold and \$28 million in Selling, general and administrative expenses. During 2021, we recorded restructuring costs totaling \$13 million for restructuring actions initiated in 2020, consisting of \$9 million in Cost of products and services sold and \$4 million in Selling, general and administrative expenses. During 2021, we also recorded restructuring costs totaling \$2 million for restructuring actions initiated in 2019 and prior.

We are targeting to complete in 2022 the majority of remaining restructuring actions initiated in 2021 and 2020.

The following table summarizes the accrual balance and utilization for the 2021 and 2020 restructuring actions, which are primarily for severance costs:

<i>(dollars in millions)</i>	2021 Actions	2020 Actions
Restructuring accruals as of December 31, 2020	\$ —	\$ 42
Restructuring costs	41	13
Utilization, foreign exchange and other costs	(19)	(30)
Balance as of December 31, 2021	\$ 22	\$ 25

The following table summarizes expected, incurred and remaining costs for the 2021 and 2020 restructuring actions by segment:

<i>(dollars in millions)</i>	Expected Costs	Cost Incurred During 2020	Costs Incurred During 2021	Remaining Costs as of December 31, 2021
New Equipment	\$ 15	\$ —	\$ (14)	\$ 1
Service	33	—	(27)	6
Total 2021 Actions	\$ 48	\$ —	\$ (41)	\$ 7
New Equipment	\$ 36	\$ (29)	\$ (7)	\$ —
Service	48	(42)	(6)	—
Total 2020 Actions	\$ 84	\$ (71)	\$ (13)	\$ —

Note 18: Financial Instruments

We enter into derivative instruments primarily for risk management purposes, including derivatives designated as hedging instruments under ASC 820, *Fair Value Measurement*. We operate internationally and, in the normal course of business, are exposed to fluctuations in interest rates, commodity prices and foreign exchange rates. These fluctuations can increase the costs of financing, investing in and operating the business. We may use derivative instruments, including swaps, forward contracts and options, to manage certain foreign currency, commodity price and interest rate exposures.

The average of the notional amount of foreign exchange contracts hedging foreign currency transactions was \$3.3 billion and \$3.0 billion as of December 31, 2021 and 2020, respectively. The average of the notional amount of contracts hedging commodity purchases was \$16 million and \$0 million as of December 31, 2021 and 2020, respectively.

The following table summarizes the fair value and presentation on the Consolidated Balance Sheets for derivative instruments as of December 31:

<i>(dollars in millions)</i>	Balance Sheet Classification	2021	2020
Derivatives designated as Cash flow hedging instruments:			
	<u>Asset Derivatives:</u>		
Foreign exchange contracts	Other current assets	\$ 7	\$ 9
Foreign exchange contracts	Other assets	1	4
	Total asset derivatives	<u>\$ 8</u>	<u>\$ 13</u>
	<u>Liability Derivatives:</u>		
Foreign exchange contracts	Accrued liabilities	\$ (3)	\$ (7)
Foreign exchange contracts	Other long-term liabilities	—	(4)
	Total liability derivatives	<u>\$ (3)</u>	<u>\$ (11)</u>
Derivatives not designated as Cash flow hedging instruments:			
	<u>Asset Derivatives:</u>		
Foreign exchange contracts	Other current assets	\$ 23	\$ 23
Foreign exchange contracts	Other assets	5	10
	Total asset derivatives	<u>\$ 28</u>	<u>\$ 33</u>
	<u>Liability Derivatives:</u>		
Foreign exchange contracts	Accrued liabilities	\$ (11)	\$ (24)
Foreign exchange contracts	Other long-term liabilities	(2)	(8)
	Total liability derivatives	<u>\$ (13)</u>	<u>\$ (32)</u>

Derivatives designated as Cash flow hedging instruments

The amount of gain or (loss) attributable to foreign exchange contract activity reclassified from Accumulated other comprehensive income (loss) was immaterial for the years ended December 31, 2021, 2020 and 2019, respectively.

The effect of cash flow hedging relationships on Accumulated other comprehensive income (loss) as of December 31, 2021 and 2020 are presented in the table below.

<i>(dollars in millions)</i>	December 31,	
	2021	2020
Gain (loss) recorded in Accumulated other comprehensive income (loss)	\$ 7	\$ 4

The Company utilizes the critical terms match method in assessing firm commitment derivatives for hedge effectiveness. Accordingly, the hedged items and derivatives designated as hedging instruments are highly effective.

Assuming current market conditions continue, a pre-tax gain of \$4 million is expected to be reclassified from Accumulated other comprehensive income (loss) into Cost of product sold to reflect the fixed prices obtained from foreign exchange hedging within the next 12 months. All derivative contracts accounted for as cash flow hedges as of December 31, 2021 will mature by December 2024.

Net Investment Hedges

We have foreign-denominated long-term debt balances that qualify as net investment hedges. Changes in the value of these net investment hedges due to foreign currency gains or losses are deferred as foreign currency translation adjustments in Other comprehensive income (loss) on the Consolidated Statements of Comprehensive Income, and will remain in Accumulated other comprehensive income (loss) until the hedged investment is sold or substantially liquidated. We evaluate the effectiveness of the net investment hedges each quarter.

In September 2020, we issued €420 million of Euro denominated commercial paper. The Euro denominated commercial paper while outstanding qualified as a net investment hedge against our investments in European businesses and was deemed to be effective as of December 31, 2020. During 2021, we fully repaid the Euro denominated commercial paper and there is no longer a net investment hedge as of December 31, 2021. During 2021 and 2020, we recognized \$16 million of gains and \$18 million of losses, respectively, associated with this net investment hedge in Other comprehensive income (loss).

We have ¥21.5 billion of Japanese Yen denominated long-term debt, which qualifies as a net investment hedge against our investments in Japanese businesses. As of December 31, 2021, the net investment hedge is deemed to be effective. During 2021, we recognized \$10 million of gains associated with this net investment hedge in Other comprehensive income (loss).

Derivatives not designated as Cash flow hedging instruments

The net effect of derivatives not designated as Cash flow hedging instruments within Other income (expense) net, on the Consolidated Statements of Operations was as follows:

(dollars in millions)	Year Ended December 31,		
	2021	2020	2019
Foreign exchange contracts	\$ 9	\$ (4)	\$ (9)

Note 19: Fair Value Measurements

In accordance with the provisions of ASC 820: *Fair Value Measurements*, the following tables provide the valuation hierarchy classification of assets and liabilities that are carried at fair value and measured on a recurring and non-recurring basis in our Consolidated Balance Sheets as of December 31, 2021 and 2020:

(dollars in millions)	December 31, 2021			
	Total	Level 1	Level 2	Level 3
Recurring fair value measurements:				
Equity securities	\$ 25	\$ 25	\$ —	\$ —
Derivative assets	36	—	36	—
Derivative liabilities	(16)	—	(16)	—
(dollars in millions)	December 31, 2020			
	Total	Level 1	Level 2	Level 3
Recurring fair value measurements:				
Equity securities	\$ 59	\$ 59	\$ —	\$ —
Derivative assets	46	—	46	—
Derivative liabilities	(43)	—	(43)	—

Valuation Techniques. Our equity securities include equity investments that are traded in active markets, either domestically or internationally, and are measured at fair value using closing stock prices from active markets. The fair value gains or losses related to our equity securities are recorded through net income. Our derivative assets and liabilities include foreign exchange and commodity contracts that are measured at fair value using internal models based on observable market inputs such as forward rates, interest rates, our own credit risk and our counterparties' credit risks.

As of December 31, 2021, there has not been any significant impact to the fair value of our derivative liabilities due to our own credit risk. Similarly, there has not been any significant adverse impact to our derivative assets based on our evaluation of our counterparties' credit risks.

The fair values of the current portion of the Company's financial instruments not carried at fair value approximated their carrying values because of the short-term nature of the current portion. The fair value of receivables, including customer financing notes receivable, net, that were issued long-term are based on the discounted values of their related cash flows at interest rates reflecting the attributes of the counterparties, including geographic location. Customer-specific risk, including credit risk, is already considered in the carrying value of those receivables. Our long-term debt, as described in Note 10, "Borrowings and Lines of Credit", are measured at fair value using closing bond prices from active markets.

The following table provides carrying amounts and fair values of financial instruments that are not carried at fair value in our Consolidated Balance Sheets as of December 31, 2021 and 2020:

<i>(dollars in millions)</i>	December 31, 2021		December 31, 2020	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Long-term receivables, net	\$ 65	\$ 63	\$ 65	\$ 62
Customer financing notes receivable, net	77	76	128	126
Short-term borrowings	(24)	(24)	(701)	(701)
Long-term debt (excluding leases and other)	(7,296)	(7,420)	(5,300)	(5,717)
Long-term liabilities (including current portion)	(253)	(240)	(263)	(234)

Long-term liabilities (including current portion) as of December 31, 2021 includes \$239 million of payables to RTX for reimbursement of tax payments that RTX is responsible to pay after the Separation as a result of the TMA.

The following tables provide the valuation hierarchy classification of assets and liabilities that are not carried at fair value in the Consolidated Balance Sheets as of December 31, 2021 and 2020:

<i>(dollars in millions)</i>	December 31, 2021			
	Total	Level 1	Level 2	Level 3
Long-term receivables, net	\$ 63	\$ —	\$ 63	\$ —
Customer financing notes receivable, net	76	—	76	—
Short-term borrowings	(24)	—	(24)	—
Long-term debt (excluding leases and other)	(7,420)	—	(7,420)	—
Long-term liabilities (including current portion)	(240)	—	(240)	—

<i>(dollars in millions)</i>	December 31, 2020			
	Total	Level 1	Level 2	Level 3
Long-term receivables, net	\$ 62	\$ —	\$ 62	\$ —
Customer financing notes receivable, net	126	—	126	—
Short-term borrowings	(701)	—	(701)	—
Long-term debt (excluding leases and other)	\$ (5,717)	—	(5,717)	—
Long-term liabilities (including current portion)	(234)	—	(234)	—

Note 20: Guarantees

The Company provides service and warranty on its products beyond normal service and warranty policies. The changes in the carrying amount of service and product guarantees for the years ended December 31, 2021 and 2020 are as follows:

<i>(dollars in millions)</i>	2021	2020
Balance as of January 1	\$ 25	\$ 27
Warranties	3	12
Settlements made	(9)	(14)
Other	1	—
Balance as of December 31	<u>\$ 20</u>	<u>\$ 25</u>

The Company provides certain financial guarantees to third parties. As of December 31, 2021, Otis has stand-by letters of credit with maximum potential payment totaling \$154 million. We accrue costs associated with guarantees when it is probable that a liability has been incurred and the amount can be reasonably estimated. The most likely cost to be incurred is accrued based on an evaluation of currently available facts, and where no amount within a range of estimates is more likely, the minimum is accrued. In accordance with the FASB ASC Topic 460: *Guarantees*, we record these liabilities at fair value. As of December 31, 2021, Otis has determined there are no estimated costs probable under these guarantees.

In connection with the Tender Offer, the Company entered into certain arrangements whereby third party banks agreed to provide financial guarantees to the CNMV in an amount equal to the original total price of the Tender Offer of €1.63 billion, as required by the Spanish takeover code. On November 12, 2021, the financial guarantees to the CNMV were terminated upon deposit into escrow of an amount equal to the total price of the Tender Offer. See Note 10, "Borrowings and Lines of Credit" for additional discussion of the Euro Notes issued to fund the Tender Offer.

Note 21: Leases

ASU 2016-02, *Leases (Topic 842)* and its related amendments (collectively, "Lease Accounting Standard") establishes a right-of-use ("ROU") model that requires a lessee to record a ROU asset and a lease liability on the Consolidated Balance Sheets for all leases with terms longer than 12 months. Leases are classified as either finance or operating, with classification affecting the pattern of expense recognition on the Consolidated Statements of Operations.

We enter into lease agreements for the use of real estate space, vehicles and certain other equipment under operating and finance leases. We determine if an arrangement contains a lease at inception. Operating leases are included in Operating lease ROU assets, Accrued liabilities, and Operating lease liabilities in our Consolidated Balance Sheets. Finance leases are not considered significant to our Consolidated Balance Sheets or Consolidated Statements of Operations. We apply the practical expedient for short-term leases, whereby a lease ROU asset and liability is not recognized and the expense is recognized in a straight-line basis over the lease term.

ROU assets represent our right to use an underlying asset for the lease term and lease liabilities represent our obligation to make lease payments arising from the lease. Lease ROU assets and liabilities are recognized at commencement date based on the present value of lease payments over the lease term. As most of our leases do not provide an implicit rate, we use our incremental borrowing rate based on the information available at commencement date in determining the present value of lease payments, and use the implicit rate when readily determinable. We determine our incremental borrowing rate through market sources including relevant industry rates. Our lease ROU assets also include any lease pre-payments and exclude lease incentives. Certain of our leases include variable payments, which may vary based upon changes in facts or circumstances after the start of the lease. We exclude variable payments from lease ROU assets and lease liabilities, to the extent not considered fixed, and instead, expense variable payments as incurred. Variable lease expense and lease expense for short duration contracts is not a material component of lease expense. Our leases generally have remaining lease terms of 1 to 20 years, some of which include options to extend leases. The majority of our leases with options to extend are up to five years with the ability to terminate the lease within one year. The exercise of lease renewal options is at our sole discretion and our lease ROU assets and liabilities reflect only the options we are reasonably certain that we will exercise. Lease expense is recognized on a straight-line basis over the lease term.

Operating lease expense for the years ended December 31, 2021, 2020 and 2019 as \$147 million, \$148 million and \$152 million, respectively. The Company made immaterial adjustments to the prior year footnote disclosure of operating lease expense in 2020 and 2019, which did not impact the amounts recorded in the Consolidated Statements of Operations for the years ended December 31, 2020 and 2019.

Supplemental cash flow information related to operating leases for the years ended December 31, 2021, 2020 and 2019 were as follows:

<i>(dollars in millions)</i>	2021	2020	2019
Cash paid for amounts included in the measurement of operating lease liabilities:			
Operating cash outflows from operating leases	\$ (154)	\$ (162)	\$ (134)
Non-cash operating lease activity:			
ROU assets obtained in exchange for operating lease liabilities	135	126	157

Operating lease ROU assets and liabilities are reflected on our Consolidated Balance Sheets as follows:

<i>(dollars in millions)</i>	December 31,	
	2021	2020
Operating lease ROU assets	\$ 526	\$ 542
Accrued liabilities	\$ 181	\$ 167
Operating lease liabilities	336	367
Total operating lease liabilities	\$ 517	\$ 534

Supplemental information related to operating leases was as follows:

	December 31,	
	2021	2020
Weighted Average Remaining Lease Term (in years)	4.4	5.0
Weighted Average Discount Rate	2.6 %	2.9 %

Undiscounted maturities of operating lease liabilities, including options to extend lease terms that are reasonably certain of being exercised, as of December 31, 2021 are as follows:

<i>(dollars in millions)</i>	Total
2022	\$ 171
2023	136
2024	102
2025	52
2026	32
Thereafter	52
Total undiscounted lease payments	545
Less: imputed interest	(28)
Total discounted lease payments	\$ 517

Note 22: Contingent Liabilities

Except as otherwise noted, while we are unable to predict the final outcome, based on information currently available, we do not believe that resolution of any of the following matters will have a material adverse effect upon our competitive position, results of operations, cash flows or financial condition. In addition to the specific amounts noted below, where we have recorded loss contingency accruals for other matters described below, the amounts in aggregate are not material. Legal costs generally are expensed when incurred.

Environmental. As previously disclosed, the Company's operations are subject to environmental regulation by authorities with jurisdiction over its operations. The Company has accrued for the costs of environmental remediation activities, including, but not limited to, investigatory, remediation, operating and maintenance costs and performance guarantees, and periodically reassesses these amounts. Management believes that the likelihood of incurring losses materially in excess of amounts accrued is remote. The outstanding liability for environmental obligations was \$12 million as of December 31, 2021 and December 31, 2020, and is principally included in Other long-term liabilities on the Consolidated Balance Sheets.

Legal Proceedings.

German Tax Litigation

As previously disclosed, we have been involved in administrative review proceedings with the German Tax Office, which concern approximately €215 million (approximately \$243 million as of December 31, 2021) of tax benefits that we have claimed related to a 1998 reorganization of the corporate structure of our operations in Germany. Upon audit, these tax benefits were disallowed by the German Tax Office. We estimate interest associated with the aforementioned tax benefits is an additional approximately €118 million (approximately \$134 million as of December 31, 2021).

On August 3, 2012, a suit was filed in the local German Tax Court (Berlin-Brandenburg). In 2015, our former parent UTC made tax and interest payments to German tax authorities of €275 million (approximately \$300 million) in order to avoid additional interest accruals pending final resolution of this matter. In March 2016, the local German Tax Court dismissed the suit, and we appealed this decision to the German Federal Tax Court. Following a hearing on July 24, 2018, the German Federal Tax Court remanded the matter to the local German Tax Court for further proceedings. On December 7, 2020, the local Tax Court ruled against the Company. We have filed an appeal with the Federal Tax Court and expect a decision on our appeal in the first quarter of 2022. There is no assurance, however, that the German Federal Tax Court will agree to hear the appeal or, if it does, rule in the Company's favor, and the decision of the German Tax Office ultimately could be sustained.

Pursuant to the TMA, the Company retains the liability associated with the remaining interest, and has recorded an interest accrual of €45 million (approximately \$50 million as of December 31, 2021), net of payments and other deductions, included within Accrued liabilities on the Consolidated Balance Sheets as of December 31, 2021. In the event that RTX and the Company prevail in this matter, any recoveries would be allocated between RTX and the Company pursuant to the terms of the TMA.

Asbestos Matters

As previously disclosed, we have been named as defendants in lawsuits alleging personal injury as a result of exposure to asbestos. While we have never manufactured any asbestos-containing component parts, and no longer incorporate asbestos in any current products, certain of our historical products have contained components manufactured by third parties incorporating asbestos. A substantial majority of these asbestos-related claims have been dismissed without payment or were covered in full or in part by insurance or other forms of indemnity. Additional cases were litigated and settled without any insurance reimbursement. The amounts involved in asbestos related claims were not material individually or in the aggregate as of, and for the years ended, December 31, 2021 and December 31, 2020.

The estimated range of total liabilities to resolve all pending and unasserted potential future asbestos claims through 2059 is \$22 million to \$45 million as of December 31, 2021, and \$23 million to \$45 million as of December 31, 2020. Because no amount within the range of estimates is more likely to occur than any other, we recorded the minimum amount of \$22 million and \$23 million as of December 31, 2021 and 2020, respectively, which is principally recorded in Other long-term liabilities on our Consolidated Balance Sheets. Amounts are on a pre-tax basis, not discounted, and excludes the Company's legal fees to defend the asbestos claims (which will continue to be expensed as they are incurred). In addition, the Company has an insurance recovery receivable for probable asbestos related recoveries of approximately \$5 million, which is principally recorded in Other assets on our Consolidated Balance Sheets as of December 31, 2021 and December 31, 2020.

Putative Class Action Lawsuit

On August 12, 2020, a putative class action lawsuit, (Geraud Darnis et al. v. Raytheon Technologies Corporation et al.), was filed in the United States District Court for the District of Connecticut against Otis, Raytheon Technologies Corporation ("RTX"), Carrier, each of their directors, and various incentive and deferred compensation plans. On September 13, 2021, plaintiffs filed an amended complaint against the three company defendants only. The named plaintiffs are former employees of UTC and its current and former subsidiaries, including Otis and Carrier. They seek to recover monetary damages, as well as related declaratory and equitable relief, based on claimed decreases in the value of long-term incentive awards and deferred compensation under nonqualified deferred compensation plans allegedly caused by the formula used to calculate the adjustments to such awards and deferred compensation from RTX, Carrier, and Otis following the spin-offs of Carrier and Otis and the subsequent combination of UTC and Raytheon Company. Otis believes that the claims against the Company are without merit. At this time, Otis is unable to predict the outcome, or reasonably estimate the possible loss or range of loss, if any, which could result from this action.

Other. As previously disclosed, we have commitments and contingent liabilities related to legal proceedings, self-insurance programs and matters arising out of the normal course of business. We accrue contingencies based on a range of possible outcomes. If no amount within this range is a better estimate than any other, we accrue the minimum amount. While it is not possible to determine the ultimate disposition of each of these claims and whether they will be resolved consistent with our beliefs, we expect that the outcome of such claims, individually or in the aggregate, will not have a material adverse effect on our business, financial condition, cash flows or results of operations.

As previously disclosed, in certain European countries, claims for overcharges on elevators and escalators related to civil cartel cases have been made, which we have accrued for based on our evaluation of the claims. While it is not possible to determine the ultimate disposition of each of these claims and whether they will be resolved consistent with our beliefs, historical settlement experience of these cases have not been material to the business, financial condition, cash flows or results of operations, however the future outcome of these cases cannot be determined.

As previously disclosed, in the ordinary course of business, the Company is also routinely a defendant in, party to or otherwise subject to many pending and threatened legal actions, claims, disputes and proceedings. These matters are often based on alleged violations of contract, product liability, warranty, regulatory, environmental, health and safety, employment, intellectual property, tax and other laws. In some of these proceedings, claims for substantial monetary damages are asserted against the Company and its subsidiaries and could result in fines, penalties, compensatory or treble damages or non-monetary relief. We do not believe that these matters will have a material adverse effect upon our competitive position, results of operations, cash flows or financial condition.

Note 23: Segment Financial Data

Our operations are classified into two operating segments: New Equipment and Service. Through the New Equipment segment, we design, manufacture, sell and install a wide range of passenger and freight elevators as well as escalators and moving walkways to customers in the residential and commercial building and infrastructure projects. The Service segment provides maintenance and repair services for both our products and those of other manufacturers, and provides modernization services to upgrade elevators and escalators. The operating segments are generally based on the management structure of the Company, how management allocates resources, assesses performance and makes strategic and operational decisions.

Segment Information. Segment information for the years ended December 31 are as follows:

(dollars in millions)	Net Sales			Operating Profit		
	2021	2020	2019	2021	2020	2019
New Equipment	\$ 6,428	\$ 5,371	\$ 5,648	\$ 459	\$ 318	\$ 393
Service	7,870	7,385	7,470	1,762	1,611	1,603
Total segments	14,298	12,756	13,118	2,221	1,929	1,996
General corporate expenses and other ⁽¹⁾	—	—	—	(113)	(290)	(182)
Total	\$ 14,298	\$ 12,756	\$ 13,118	\$ 2,108	\$ 1,639	\$ 1,814

⁽¹⁾ The decrease in General corporate expenses and other during 2021 compared to 2020 is primarily driven by fixed asset impairment charges of \$71 million and associated license costs of \$14 million in 2020, as well as lower non-recurring Separation-related and shared costs of \$106 million in 2021 compared with 2020.

Total assets are not presented for each segment as they are not presented to, or reviewed by, the Chief Operating Decision Maker.

Geographic External Sales. Geographic Net sales are attributed to the geographic regions based on their location of origin. With the exception of the U.S. and China, there were no individually significant countries with sales exceeding 10% of Net sales during the years ended December 31, 2021, 2020 and 2019.

(dollars in millions)	External Net Sales			Long Lived Assets		
	2021	2020	2019	2021	2020	2019
United States Operations	\$ 3,700	\$ 3,462	\$ 3,594	\$ 336	\$ 309	\$ 295
International Operations						
China	2,877	2,135	2,113	111	113	105
Other	7,721	7,159	7,411	327	352	321
Total	\$ 14,298	\$ 12,756	\$ 13,118	\$ 774	\$ 774	\$ 721

Segment Net sales disaggregated by product and service type for the years ended December 31, 2021, 2020 and 2019 are as follows:

(dollars in millions)	2021	2020	2019
Disaggregated Net sales by type			
New Equipment	\$ 6,428	\$ 5,371	\$ 5,648
Maintenance and Repair	6,472	6,047	6,120
Modernization	1,398	1,338	1,350
Total Service	7,870	7,385	7,470
Total	\$ 14,298	\$ 12,756	\$ 13,118

Major Customers. There were no customers that individually accounted for 10% or more of the Company's consolidated Net sales for the years ended December 31, 2021, 2020 and 2019.

Note 24: Subsequent Events

On January 14, 2022, the Company redeemed its \$500 million floating rate notes due in 2023, at par, using cash on hand and commercial paper borrowings. See Note 10, "Borrowings and Lines of Credit" for details of the long-term debt.

OTIS WORLDWIDE CORPORATION
SCHEDULE II - Valuation and Qualifying Accounts
Three years ended December 31, 2021
(Dollars in millions)

Allowance for Doubtful Accounts and Expected Credit Losses:

Balance, December 31, 2018	\$ 84
Provision charged to income	26
Doubtful accounts written off	(19)
Other	(8)
Balance, December 31, 2019	83
Impact of credit standard adoption	28
Provision for expected credit losses	40
Write-offs charged against the allowance for expected credit losses	(20)
Other	30
Balance, December 31, 2020	161
Provision for expected credit losses	37
Write-offs charged against the allowance for expected credit losses	(15)
Other	(8)
Balance, December 31, 2021	<u>\$ 175</u>

Future Income Tax Benefits - Valuation Allowance

Balance, December 31, 2018	\$ 29
Additions charged to income tax expense	28
Reductions credited to income tax expense	—
Other adjustments	(2)
Balance, December 31, 2019	55
Additions charged to income tax expense	63
Reductions credited to income tax expense	(13)
Other adjustments	137
Balance, December 31, 2020	242
Additions charged to income tax expense	30
Reductions credited to income tax expense	(10)
Other adjustments	(15)
Balance, December 31, 2021	<u>\$ 247</u>

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

As required by Rule 13a-15(e) under the Exchange Act, we carried out an evaluation under the supervision and with the participation of our management, including the President and Chief Executive Officer ("CEO"), the Executive Vice President and Chief Financial Officer ("CFO") and the Vice President and Chief Accounting Officer ("CAO"), of the effectiveness of the design and operation of our disclosure controls and procedures as of December 31, 2021. There are inherent limitations to the effectiveness of any system of disclosure controls and procedures, including the possibility of human error and the circumvention or overriding of the controls and procedures. Accordingly, even effective disclosure controls and procedures can only provide reasonable assurance of achieving their control objectives. Based upon our evaluation, our CEO, our CFO and our CAO have concluded that, as of December 31, 2021, our disclosure controls and procedures were effective to provide reasonable assurance that information required to be disclosed in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the applicable rules and forms, and that it is accumulated and communicated to our management, including our CEO, our CFO and our CAO, as appropriate, to allow timely decisions regarding required disclosure.

Management Report on Internal Control over Financial Reporting

The information required by Item 9A relating to Management's Annual Report on Internal Control Over Financial Reporting and Attestation Report of the Registered Public Accounting Firm is found in Item 8. Financial Statements and Supplementary Data of this Form 10-K and incorporated herein by reference.

Changes in Internal Control over Financial Reporting

There has been no change in our internal control over financial reporting during the quarter ended December 31, 2021, that materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not Applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by Item 10 with respect to directors, the Audit Committee of the Board of Directors and audit committee financial experts is incorporated herein by reference to the section of our Proxy Statement for the 2022 Annual Meeting of Shareholders titled "Corporate governance" (under the subheadings "Proposal 1: Election of directors", "Our Board leadership structure", "Board committees" and "Our board nominees").

Information about our Executive Officers

The following persons are executive officers of Otis Worldwide Corporation:

Name	Position	Other Business Experience Since 1/1/2017	Age as of 2/4/2022
Bernardo Calleja Fernandez	President, Otis EMEA (since November 2020)	President of Otis South Europe & Africa, Otis; President, Otis South Europe & Turkey, Otis	59
James F. Cramer	President, Otis Americas (since June 2020)	Regional Vice President, U.S. Western Region, Otis	57
Rahul Ghai	Executive Vice President and Chief Financial Officer (since April 2020)	Vice President and Chief Financial Officer, Otis; Senior Vice President and Chief Financial Officer, Harris Corporation	50
Nora E. LaFreniere	Executive Vice President and General Counsel (since July 2021)	Executive Vice President, Chief General Counsel and Corporate Secretary, Vice President, General Counsel, Otis	50
Abbe Luersman	Executive Vice President and Chief People Officer (since July 2021)	Chief Human Resource Officer, Ahold Delhaize	54
Judith F. Marks	Chair, President and Chief Executive Officer (since February 2022)	President and Chief Executive Officer; President, Otis; Chief Executive Officer, Siemens USA and Dresser-Rand (a Siemens company); Executive Vice President, New Equipment Solutions, Dresser-Rand	58
Stephane de Montlivault	President, Otis Asia Pacific (since April 2020)	President, Otis Asia Pacific; President, Otis Northeast Asia, Otis President, Northeast Asia and President of Nippon Otis Elevator Company	62
Michael P. Ryan	Vice President and Chief Accounting Officer (since April 2020)	Vice President and Assistant Controller, UTC; and Executive Director, Corporate Accounting and Controls, UTC	52
Peiming Zheng (Perry)	President, Otis China and Chief Customer Product Officer (since December 2021)	President, Otis China; President, Business & Industrial Systems China, Otis	54

All of the officers serve at the pleasure of the Board of Directors of Otis Worldwide Corporation.

Information concerning Section 16(a) compliance is incorporated herein by reference to the section of our Proxy Statement for the 2022 Annual Meeting of Shareholders titled "Other important information" under the subheading "Delinquent section 16(a) reports." We have adopted a code of ethics, the Otis Absolutes, that applies to all our directors, officers, employees and representatives. This code is publicly available on our website at <http://www.otis.com/How-We-Work/Ethics-And-Compliance/Pages/Default.aspx>. Amendments to the code of ethics and any grant of a waiver from a provision of the code requiring disclosure under applicable SEC rules will be disclosed on our website. Our Corporate Governance Guidelines and the charters of our Board of Directors' Audit Committee, Compensation Committee and Nominations and Governance Committee are available on our website at <http://www.otis.com/Who-We-Are/Corporate-Governance/Pages/default.aspx>. These materials may also be requested in print free of charge by writing to our Investor Relations Department at Otis Worldwide Corporation, One Carrier Place, Investor Relations, Farmington, CT 06032.

Item 11. Executive Compensation

The information required by Item 11 is incorporated herein by reference to the sections of our Proxy Statement for the 2022 Annual Meeting of Shareholders titled "Executive compensation", "Compensation of directors" and "Report of the compensation committee".

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information relating to security ownership of certain beneficial owners and management is incorporated herein by reference to the section of our Proxy Statement for the 2022 Annual Meeting of Shareholders titled "Other important information" under the subheading "Stock ownership" ("Beneficial stock ownership of directors and executive officers" and "Certain beneficial owners").

Equity Compensation Plan Information

The following table provides information as of December 31, 2021 concerning Common Stock issuable under Otis' equity compensation plans.

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a) (c)
Equity compensation plans approved by shareholders	5,221,275	(1) \$52.97	25,645,407 (2)
Equity compensation plans not approved by shareholders	-	-	-

(1) Consists of the following issuable shares of Common Stock awarded under the Otis Worldwide Corporation 2020 Long-Term Incentive Plan ("LTIP"): (i) shares of Common Stock issuable upon the exercise of outstanding non-qualified stock options; (ii) shares of Common Stock issuable upon the exercise of outstanding Stock Appreciation Rights ("SARs"); (iii) shares of Common Stock issuable pursuant to outstanding restricted stock unit and performance share unit awards, assuming performance at the target level (up to an additional 330,204 shares of Common Stock could be issued if performance goals are achieved above target); and (iv) shares of Common Stock issuable upon the settlement of outstanding deferred stock units and restricted stock units under the Otis Worldwide Corporation Board of Directors Stock Unit Plan. Under the LTIP, each SAR is exercisable for a number of shares of Common Stock having a value equal to the increase in the market price of a share of such stock from the date the SAR was granted. For purposes of determining the total number of shares to be issued in respect of outstanding SARs, we have used the New York Stock Exchange ("NYSE") closing price for a share of Common Stock on December 31, 2021 of \$87.07. The weighted-average exercise price shown in the column above takes into account only the shares identified in clauses (i) and (ii).

(2) Represents the maximum number of shares of Common Stock available to be awarded under the LTIP as of December 31, 2021. Performance share units, deferred stock units and restricted stock units ("Full Share Awards") will result in a reduction in the number of shares of Common Stock available for delivery under the LTIP in an amount equal to twice the number of shares to which the award corresponds under the terms of the LTIP. Stock options and SARs do not constitute Full Share Awards and will result in a reduction in the number of shares of Common Stock available for delivery under the 2020 LTIP on a one-for-one basis.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by Item 13 is incorporated herein by reference to the sections of our Proxy Statement for the 2022 Annual Meeting of Shareholders titled "Corporate governance" under the subheading "Our board nominees" (including under the subheading "Director independence") and "Other important information" (under the subheading "Transactions with related persons").

Item 14. Principal Accounting Fees and Services

The information required by Item 14 is incorporated by reference to the section of our Proxy Statement for the 2022 Annual Meeting of Shareholders titled "Proposal 3: Appoint an independent auditor for 2022", including the information provided in that section with regard to "Audit Fees", "Audit-Related Fees", "Tax Fees" and "All Other Fees".

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) The following documents are filed as part of this Form 10-K:

- (1) Financial Statements. The financial statements are set forth in Item 8. "Financial Statements and Supplementary Data" in this Form 10-K.
- (2) Financial Statement Schedules. The following financial statement schedule is set forth in Item 8. "Financial Statements and Supplementary Data" in this Form 10-K. All other schedules have been omitted because they are not required, are not applicable or the required information is shown in the financial statements or the notes thereto.
 - Schedule II — Valuation and Qualifying Accounts
- (3) Exhibits. The following list of exhibits includes exhibits submitted with this Form 10-K as filed with the SEC and those incorporated by reference to other filings.

Exhibit Number	Exhibit Description
2.1	<u>Separation and Distribution Agreement, dated as of April 2, 2020, by and among United Technologies Corporation, Otis Worldwide Corporation and Carrier Global Corporation, incorporated by reference to Exhibit 2.1 of the Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on April 3, 2020.</u>
3.1	<u>Amended and Restated Certificate of Incorporation of Otis Worldwide Corporation, incorporated by reference to Exhibit 3.1(b) of Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on April 3, 2020.</u>
3.2	<u>Amended and Restated Bylaws of Otis Worldwide Corporation, incorporated by reference to Exhibit 3.2 of Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on April 3, 2020.</u>
4.1	<u>Indenture, dated February 27, 2020, between Otis Worldwide Corporation and The Bank of New York Mellon Trust Company, N.A., incorporated by reference to Exhibit 4.1 to Otis' Amendment No. 1 to Registration Statement on Form 10 (Commission file number 001-39221) filed with the SEC on March 11, 2020.</u>
4.2	<u>Supplemental Indenture No. 1, dated February 27, 2020, between Otis Worldwide Corporation and The Bank of New York Mellon Trust Company, N.A., incorporated by reference to Exhibit 4.2 to Otis' Amendment No. 1 to Registration Statement on Form 10 (Commission file number 001-39221) filed with the SEC on March 11, 2020.</u>
4.3	<u>Supplemental Indenture No. 2, dated as of March 11, 2021, between Otis Worldwide Corporation and The Bank of New York Mellon Trust Company, N.A., as trustee, incorporated by reference to Exhibit 4.1 to Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on March 11, 2021.</u>
4.4	<u>Indenture, dated as of November 12, 2021, among Otis Worldwide Corporation, Highland Holdings S.à r.l. and The Bank of New York Mellon Trust Company, N.A., as trustee, incorporated by reference to Exhibit 4.1 to Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on November 12, 2021.</u>
4.5	<u>Supplemental Indenture No. 1, dated as of November 12, 2021, among Otis Worldwide Corporation, Highland Holdings S.à r.l. and The Bank of New York Mellon Trust Company, N.A., as trustee, incorporated by reference to Exhibit 4.2 of Otis' Current Report on 8-K (Commission file number 001-39221) filed with the SEC on November 12, 2021).</u>
4.6	<u>Description of Securities*</u>
10.1	<u>Transition Services Agreement, dated as of April 2, 2020, by and among United Technologies Corporation, Otis Worldwide Corporation and Carrier Global Corporation, incorporated by reference to Exhibit 10.1 of Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on April 3, 2020.</u>
10.2	<u>Tax Matters Agreement, dated as of April 2, 2020, by and among United Technologies Corporation, Otis Worldwide Corporation and Carrier Global Corporation incorporated by reference to Exhibit 10.2 of Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on April 3, 2020.</u>

Exhibit Number	Exhibit Description
10.3	<u>Employee Matters Agreement, dated as of April 2, 2020, by and among United Technologies Corporation, Otis Worldwide Corporation and Carrier Global Corporation incorporated by reference to Exhibit 10.3 of Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on April 3, 2020.</u>
10.4	<u>Intellectual Property Agreement, dated as of April 2, 2020, by and among United Technologies Corporation, Otis Worldwide Corporation and Carrier Global Corporation, incorporated by reference to Exhibit 10.4 of Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on April 3, 2020.</u>
10.5	<u>Otis Worldwide Corporation 2020 Long-Term Incentive Plan, incorporated by reference to Exhibit 10.5 of Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on April 3, 2020.</u>
10.6	<u>Otis Worldwide Corporation Change in Control Severance Plan, incorporated by reference to Exhibit 10.6 of Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on April 3, 2020.</u>
10.7	<u>Otis Worldwide Corporation Executive Annual Bonus Plan incorporated by reference to Exhibit 10.7 of Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on April 3, 2020;</u> <u>Amendment No. 1 to Otis Worldwide Corporation Executive Annual Bonus Plan, incorporated by reference to Exhibit 10.3 to Otis' Quarterly Report on Form 10-Q for the quarter ended June 30, 2021 (Commission file number 001-39221) filed with the SEC on July 28, 2021.</u>
10.8	<u>Otis Worldwide Corporation Pension Preservation Plan, incorporated by reference to Exhibit 10.8 of Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on April 3, 2020.</u>
10.9	<u>Otis Worldwide Corporation Retirement Plan for Third Country National Employees, incorporated by reference to Exhibit 10.9 of Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on April 3, 2020.</u>
10.10	<u>Otis Worldwide Corporation Board of Directors Deferred Stock Unit Plan, incorporated by reference to Exhibit 10.10 of Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on April 3, 2020;</u> <u>Otis Worldwide Corporation Board of Directors Deferred Stock Unit Plan (Amended and Restated effective as of February 4, 2021), incorporated by reference to Exhibit 10.4 to Otis' Quarterly Report on Form 10-Q for the quarter ended June 30, 2021 (Commission file number 001-39221) filed with the SEC on July 28, 2021.</u>
10.11	<u>French Sub-Plan for Restricted Stock Units Granted Under the Otis Worldwide Corporation 2020 Long-Term Incentive Plan, incorporated by reference to Exhibit 10.11 of Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on April 3, 2020.</u>
10.12	<u>Schedule of Terms for Restricted Stock Unit Awards granted under the Otis Worldwide Corporation 2020 Long-Term Incentive Plan, incorporated by reference to Exhibit 10.8 to Otis' Registration Statement on Form 10 (Commission file number 001-39221) filed with the SEC on February 7, 2020.</u>
10.13	<u>Schedule of Terms for Restricted Stock Unit Awards (Off-Cycle) granted under the Otis Worldwide Corporation 2020 Long-Term Incentive Plan, incorporated by reference to Exhibit 10.9 to Otis' Registration Statement on Form 10 (Commission file number 001-39221) filed with the SEC on February 7, 2020.</u>
10.14	<u>Schedule of Terms for Stock Appreciation Right Awards granted under the Otis Worldwide Corporation 2020 Long-Term Incentive Plan, incorporated by reference to Exhibit 10.10 to Otis' Registration Statement on Form 10 (Commission file number 001-39221) filed with the SEC on February 7, 2020.</u>
10.15	<u>Schedule of Terms for Stock Appreciation Right Awards (Off-Cycle) granted under the Otis Worldwide Corporation 2020 Long-Term Incentive Plan, incorporated by reference to Exhibit 10.11 to Otis' Registration Statement on Form 10 (Commission file number 001-39221) filed with the SEC on February 7, 2020.</u>
10.16	<u>Schedule of Terms for Performance Share Unit Awards granted under the Otis Worldwide Corporation 2020 Long-Term Incentive Plan, incorporated by reference to Exhibit 10.12 to Otis' Registration Statement on Form 10 (Commission file number 001-39221) filed with the SEC on February 7, 2020.</u>
10.17	<u>Otis Worldwide Corporation Deferred Compensation Plan, incorporated by reference to Exhibit 10.14 to Otis' Registration Statement on Form 10 (Commission file number 001-39221) filed with the SEC on February 7, 2020;</u> <u>Amendment No. 1 to the Otis Worldwide Corporation Deferred Compensation Plan.*</u>

Exhibit Number	Exhibit Description
10.18	<p><u>Otis Worldwide Corporation Amended and Restated Savings Restoration Plan, incorporated by reference to Exhibit 10.15 to Otis' Amendment No. 1 to Registration Statement on Form 10 (Commission file number 001-39221) filed with the SEC on March 11, 2020;</u></p> <p><u>Amendment No. 1 to Otis Worldwide Corporation Amended and Restated Savings Restoration Plan, incorporated by reference to Exhibit 10.1 to Otis' Quarterly Report on Form 10-Q for the quarter ended March 31, 2021 (Commission file number 001-39221) filed with the SEC on April 28, 2021;</u></p> <p><u>Amendment No. 2 to the Otis Worldwide Corporation Amended and Restated Savings Restoration Plan.*</u></p>
10.19	<p><u>Otis Worldwide Corporation Company Automatic Contribution Excess Plan, incorporated by reference to Exhibit 10.16 to Otis' Registration Statement on Form 10 (Commission file number 001-39221) filed with the SEC on February 7, 2020;</u></p> <p><u>Amendment No. 1 to the Otis Worldwide Corporation Company Automatic Contribution Excess Plan.*</u></p>
10.20	<p><u>Otis Worldwide Corporation LTIP Performance Share Unit Deferral Plan, incorporated by reference to Exhibit 10.17 to Otis' Registration Statement on Form 10 (Commission file number 001-39221) filed with the SEC on February 7, 2020;</u></p> <p><u>Amendment No. 1 to the Otis Worldwide Corporation LTIP Performance Share Unit Deferral Plan.*</u></p>
10.21	<u>Legacy United Technologies Corporation Executive Leadership Group Agreements, incorporated by reference to Exhibit 10.19 to Otis' Registration Statement on Form 10 (Commission file number 001-39221) filed with the SEC on February 7, 2020.</u>
10.22	<u>Legacy Schedule of Terms for United Technologies Corporation Executive Leadership Group Restricted Stock Unit Retention Awards, incorporated by reference to Exhibit 10.20 to Otis' Registration Statement on Form 10 (Commission file number 001-39221) filed with the SEC on February 7, 2020.</u>
10.23	<u>Offer Letter with Rahul Ghai, dated June 27, 2019, incorporated by reference to Exhibit 10.24 to Otis' Registration Statement on Form 10 (Commission file number 001-39221) filed with the SEC on February 7, 2020.</u>
10.24	<p><u>Letter of Assignment with Stephane de Montlivault, dated December 18, 2019, incorporated by reference to Exhibit 10.25 to Otis' Registration Statement on Form 10 (Commission file number 001-39221) filed with the SEC on February 7, 2020;</u></p> <p><u>Letter of Assignment Extension with Stephane de Montlivault dated October 1, 2021.*</u></p>
10.25	<u>Letter of Appointment/Employment with Stephane de Montlivault, dated December 18, 2019, incorporated by reference to Exhibit 10.26 to Otis' Registration Statement on Form 10 (Commission file number 001-39221) filed with the SEC on February 7, 2020.</u>
10.26	<u>Letter Agreement with Judith F. Marks regarding LTIP award amendment, dated February 3, 2020, incorporated by reference to Exhibit 10.29 to Otis' Registration Statement on Form 10 (Commission file number 001-39221) filed with the SEC on February 7, 2020.</u>
10.27	<u>Summary of Compensation and Benefits for Non-Employee Directors.*</u>
10.28	<u>Otis Worldwide Corporation Executive Leadership Group Severance Plan, incorporated by reference to Exhibit 10.1 of Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on September 18, 2020.</u>
10.29	<u>Letter of Assignment for Peiming (Perry) Zheng, effective January 1, 2021, incorporated by reference to Exhibit 10.33 of Otis' Annual Report on Form 10-K for the year ended December 31, 2020 (Commission file number 001-39221) filed with the SEC on February 5, 2021.</u>
10.30	<u>Employment Contract (Foreign National or Hong Kong, Macao or Taiwan Resident) for Peiming (Perry) Zheng, effective January 1, 2021, incorporated by reference to Exhibit 10.34 of Otis' Annual Report on Form 10-K for the year ended December 31, 2020 (Commission file number 001-39221) filed with the SEC on February 5, 2021.</u>

Exhibit Number	Exhibit Description
10.31	<p><u>Revolving Credit Agreement, dated February 10, 2020, among Otis Worldwide Corporation, the subsidiary borrowers party thereto, the lenders and other parties party thereto and JPMorgan Chase Bank, N.A., incorporated by reference to Exhibit 10.30 to Otis' Amendment No. 1 to Registration Statement on Form 10 (Commission file number 001-39221) filed with the SEC on March 11, 2020;</u></p> <p><u>First Amendment dated as of September 4, 2020, to Revolving Credit Agreement, dated February 10, 2020, among Otis Worldwide Corporation, the subsidiary borrowers party thereto, the lenders and other parties party thereto and JPMorgan Chase Bank, N.A., incorporated by reference to Exhibit 10.1 to Otis' Quarterly Report on Form 10-Q for the quarter ended September 30, 2020 (Commission file number 001-39221) filed with the SEC on October 28, 2020;</u></p> <p><u>Suspension of Rights Agreement to the Revolving Credit Agreement, incorporated by reference to Exhibit 10.4 to Otis' Quarterly Report on Form 10-Q for the quarter ended September 30, 2021 (Commission file number 001-39221) filed with the SEC on October 26, 2021.</u></p>
10.32	<p><u>Employment Contract between Otis Elevator Worldwide SRL and Bernardo Calleja Fernández, dated January 29, 2021, incorporated by reference to Exhibit 10.2 to Otis' Quarterly Report on Form 10-Q for the quarter ended March 31, 2021 (Commission file number 001-39221) filed with the SEC on April 28, 2021;</u></p> <p><u>Termination of Employment Contract between Otis Elevator Worldwide SRL and Bernardo Calleja Fernández, dated November 14, 2021.*</u></p>
10.33	<p><u>Service Agreement between Zardoya Otis S.A and Bernardo Calleja Fernández, dated January 26, 2021, incorporated by reference to Exhibit 10.3 to Otis' Quarterly Report on Form 10-Q for the quarter ended March 31, 2021 (Commission file number 001-39221) filed with the SEC on April 28, 2021;</u></p> <p><u>Amendment Agreement to the Service Agreement between Zardoya Otis S.A and Bernardo Calleja Fernández, dated February 23, 2021, incorporated by reference to Exhibit 10.4 to Otis' Quarterly Report on Form 10-Q for the quarter ended March 31, 2021 (Commission file number 001-39221) filed with the SEC on April 28, 2021;</u></p> <p><u>Letter of Amendment to Service Agreement between Zardoya Otis S.A and Bernardo Calleja Fernández, dated May 19, 2021, incorporated by reference to Exhibit 10.2 to Otis' Quarterly Report on Form 10-Q for the quarter ended June 30, 2021 (Commission file number 001-39221) filed with the SEC on July 28, 2021;</u></p>
10.34	<u>Employment Contract between Otis International Sàrl and Bernardo Calleja Fernández, effective November 15, 2021.*</u>
10.35	<u>Schedule of Terms for Restricted Stock Unit Awards (February 5, 2021) granted under the Otis Worldwide Corporation 2020 Long-Term Incentive Plan, incorporated by reference to Exhibit 10.5 to Otis' Quarterly Report on Form 10-Q for the quarter ended March 31, 2021 (Commission file number 001-39221) filed with the SEC on April 28, 2021.</u>
10.36	<u>Schedule of Terms for Stock Appreciation Right Awards (February 5, 2021) granted under the Otis Worldwide Corporation 2020 Long-Term Incentive Plan, incorporated by reference to Exhibit 10.6 to Otis' Quarterly Report on Form 10-Q for the quarter ended March 31, 2021 (Commission file number 001-39221) filed with the SEC on April 28, 2021.</u>
10.37	<u>Schedule of Terms for Performance Share Unit Awards (February 5, 2021) granted under the Otis Worldwide Corporation 2020 Long-Term Incentive Plan, incorporated by reference to Exhibit 10.7 to Otis' Quarterly Report on Form 10-Q for the quarter ended March 31, 2021 (Commission file number 001-39221) filed with the SEC on April 28, 2021.</u>
10.38	<u>Form of Executive Award Statement under the Otis Worldwide Corporation 2020 Long-Term Incentive Plan, incorporated by reference to Exhibit 10.8 to Otis' Quarterly Report on Form 10-Q for the quarter ended March 31, 2021 (Commission file number 001-39221) filed with the SEC on April 28, 2021.</u>
10.39	<u>CNMV Guarantees Issuance Agreement, dated 22 September 2021, among Opal Spanish Holdings, S.A.U., Morgan Stanley Bank AG, as CNMV guarantee provider, Morgan Stanley Bank Senior Funding, Inc., as administrative agent, and the other financial institutions from time to time party thereto, incorporated by reference to Exhibit 10.1 of Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on September 23, 2021.</u>
10.40	<u>Company Guarantee Agreement, dated September 22, 2021, between Otis Worldwide Corporation and Morgan Stanley Senior Funding, Inc., as administrative agent, incorporated by reference to Exhibit 10.2 of Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on September 23, 2021.</u>

Exhibit Number	Exhibit Description
10.41	<u>Bridge Loan Credit Agreement, dated September 22, 2021, among Opal Spanish Holdings, S.A.U., Otis Worldwide Corporation, the lenders from time to time party thereto and Morgan Stanley Senior Funding, Inc., as administrative agent, incorporated by reference to Exhibit 10.3 of Otis' Current Report on Form 8-K (Commission file number 001-39221) filed with the SEC on September 23, 2021.</u>
10.42	<u>Offer Letter between Otis Worldwide Corporation and Abbe L. Luersman, dated March 27, 2021, incorporated by reference to Exhibit 10.5 to Otis' Quarterly Report on Form 10-Q for the quarter ended September 30, 2021 (Commission file number 001-39221) filed with the SEC on October 26, 2021.</u>
14	The Otis Absolutess. The Otis Absolutess may be accessed via Otis' website at https://www.otisinvestors.com/static-files/d4712262-a281-4b8b-8430-a35803762de3
21	<u>Subsidiaries of the Registrant.*</u>
23	<u>Consent of PricewaterhouseCoopers LLP.*</u>
24	<u>Powers of Attorney of Jeffrey H. Black, Kathy Hopinkah Hannan, Shailesh G. Jejurikar, Christopher J. Kearney, Judith F. Marks, Harold W. McGraw III, Margaret M.V. Preston, Shelley Stewart, Jr. and John H. Walker.*</u>
31.1	<u>Rule 13a-14(a)/15d-14(a) Certification.*</u>
31.2	<u>Rule 13a-14(a)/15d-14(a) Certification.*</u>
31.3	<u>Rule 13a-14(a)/15d-14(a) Certification.*</u>
32	<u>Section 1350 Certifications.*</u>
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.*
101.SCH	XBRL Taxonomy Extension Schema Document.*
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.*
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.*
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.*
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.*
104	Cover Page Interactive Data File - the cover page XBRL tags are embedded within the Inline XBRL document.

Notes to Exhibits List:

* Submitted electronically herewith.

Attached as Exhibit 101 to this report are the following formatted in XBRL (Extensible Business Reporting Language): (i) Consolidated Statements of Operations for the three years ended December 31, 2021, (ii) Consolidated Statements of Comprehensive Income for the three years ended December 31, 2021, (iii) Consolidated Balance Sheets as of December 31, 2021 and 2020, (iv) Consolidated Statements of Cash Flows for the three years ended December 31, 2021, (v) Consolidated Statements of Changes in Equity for the three years ended December 31, 2021, (vi) Notes to Consolidated Financial Statements, and (vii) Financial Schedule of Valuation and Qualifying Accounts.

Item 16. Form 10-K Summary

Not applicable.

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

**OTIS WORLDWIDE CORPORATION
(Registrant)**

Dated: February 4, 2022

by: /s/ RAHUL GHAI
Rahul Ghai
Executive Vice President and Chief Financial Officer
(on behalf of the Registrant and as the Registrant's Principal
Financial Officer)

Dated: February 4, 2022

by: /s/ MICHAEL P. RYAN
Michael P. Ryan
Vice President and Chief Accounting Officer
(on behalf of the Registrant and as the Registrant's Principal
Accounting Officer)

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signature	Title	Date
<u>/s/ JUDITH F. MARKS</u> Judith F. Marks	Director, Chair, President and Chief Executive Officer	February 4, 2022
<u>/s/ RAHUL GHAI</u> Rahul Ghai	Executive Vice President and Chief Financial Officer	February 4, 2022
<u>/s/ MICHAEL P. RYAN</u> Michael P. Ryan	Vice President and Chief Accounting Officer	February 4, 2022
<u>/s/ JEFFREY H. BLACK*</u> Jeffrey H. Black	Director	
<u>/s/ KATHY HOPINKAH HANNAN*</u> Kathy Hopinkah Hannan	Director	
<u>/s/ SHAILESH G. JEJURIKAR*</u> Shailesh G. Jejurikar	Director	
<u>/s/ CHRISTOPHER J. KEARNEY*</u> Christopher J. Kearney	Director	
<u>/s/ HAROLD W. MCGRAW III*</u> Harold W. McGraw III	Director	
<u>/s/ MARGARET M.V. PRESTON*</u> Margaret M.V. Preston	Director	
<u>/s/ SHELLEY STEWART, JR.*</u> Shelley Stewart, Jr.	Director	
<u>/s/ JOHN H. WALKER*</u> John H. Walker	Director	

*By: /s/ NORA E. LAFRENIERE
Executive Vice President and General Counsel, as
Attorney-in-fact

Date: February 4, 2022

Shareholder Information

CORPORATE OFFICE

Otis Worldwide Corporation
1 Carrier Place
Farmington, CT 06032 USA
www.otis.com

This report is made available to shareholders in advance of the 2022 Annual Meeting of Shareholders to be held as a virtual meeting at 9 a.m. ET, May 19, 2022. The proxy statement will be made available to shareholders on or about April 8, 2022, at which time proxies for the meeting will be requested.

For information on how to attend the virtual annual meeting, visit:
www.virtualshareholdermeeting.com/OTIS2022
and follow the instructions provided.

STOCK LISTING

New York Stock Exchange (ticker symbol OTIS)

TRANSFER AGENT AND REGISTRAR

Computershare Trust Company, N.A., is the transfer agent, registrar and dividend disbursing agent for Otis common stock. Questions and communications from registered shareholders regarding transfer of stock, replacement of lost certificates, dividends, address changes, and the Stock Purchase and Dividend Reinvestment Plan administered by Computershare should be directed to:

Computershare Trust Company, N.A.
462 South 4th Street, Suite 1600
Louisville, KY 40202 USA
866.524.0723
+1 781.575.3346 (outside U.S.)
800.952.9245 (TDD)
+1 781.575.4592 (TDD outside U.S.)
www-us.computershare.com/Investor/#Home



The papers utilized in the production of this annual report are all certified for Forest Stewardship Council® (FSC®) standards, which promote environmentally appropriate, socially beneficial and economically viable management of the world's forests. This annual report was printed in a facility that uses exclusively vegetable-based inks, 100% renewable wind energy and releases zero VOCs into the environment.

Otis Worldwide Corporation and its subsidiaries' names, abbreviations thereof, logos, and product and service designators are either the registered or unregistered trademarks or trade names of Otis Worldwide Corporation and its subsidiaries. Names of other companies, abbreviations thereof, logos of other companies, and product and service designators of other companies are either the registered or unregistered trademarks or trade names of their respective owners.

ELECTRONIC ACCESS OR DELIVERY OF SHAREHOLDER COMMUNICATIONS

Registered shareholders can help conserve natural resources and reduce printing and mailing costs incurred by Otis by signing up for electronic communications, including annual meeting materials, stock plan statements and tax documents, at: www-us.computershare.com/Investor/#Home.

Otis Worldwide Corporation and Computershare Investor Services do not have records of beneficial owners of Otis common stock. If you are a beneficial owner of Otis common stock, please contact your broker, bank or other nominee for assistance with any questions concerning ownership or dividends.

2021 ANNUAL REPORT ON FORM 10-K

Copies of the Otis Annual Report on Form 10-K as filed with the U.S. Securities and Exchange Commission can be accessed and downloaded via our website at:
www.otisinvestors.com/financials/sec-filings.

Copies can also be obtained, without charge, from:

Otis Corporate Secretary
Otis Worldwide Corporation
1 Carrier Place
Farmington, CT 06032 USA
www.otis.com
corpsecretary@otis.com

INVESTOR RELATIONS

Otis Worldwide Corporation
1 Carrier Place
Farmington, CT 06032 USA
investorrelations@otis.com



OTIS

Los Angeles World Airport

TECHNICAL MANAGEMENT

**ELEVATOR, ESCALATOR &
MOVING WALKWAY MAINTENANCE**

PROJECT LEADERSHIP

LOS ANGELES TEAM



ANDREA THOMAS
Territory Manager



JIM STRACHAN
Area Director
Greater LA Area



ROSS PEARE
Regional Sales
Manager



MIKE MEIJER
Regional Engineer



MARSHALL BENNETT
Lead Mechanic



DANIEL SANCHEZ
Lead Mechanic



AUGIE ECHEVERRIA
Service Mechanic

REGIONAL SUPPORT



MARCUS BURTON
Regional General
Manager



KEVIN HANSON
Commercial Leader
Maintenance



JASON BARNES
Field Ops Leader
Maintenance



JIM CRAMER
President,
Otis Americas



JULIE BRANDT
Vice President,
Western Region

EXECUTIVE COMMITMENT

LOS ANGELES ORGANIZATION HIGHLIGHTS



FIELD EMPLOYEES
260



OFFICE EMPLOYEES
44



SUPERINTENDENTS
12



UNITS ON SERVICE
4500+

MAINTENANCE SUPERVISORS/FOREMEN

FULLTIME ONSITE SUPERVISION PER SHIFT

	YEARS IN THE TRADE	YEARS LAWA EXPERIENCE
DANIEL SANCHEZ	17	13
AUGIE ECHEVERRIA	18	3
MARSHALL BENNETT	8	5

ONSITE MANAGEMENT

	YEARS IN THE TRADE	YEARS LAWA EXPERIENCE
PETER PARK NE/MOD	16	5
ANDREA THOMAS SITE MANAGER	7	1

OTIS TECHNICAL EXPERTS

SPECIALIZING IN CONVEYANCE SECURITY AND MONITORING SYSTEMS

MICHAEL BERNHARDT COMPASS DISPATCH & EMS SYSTEMS Regional Field Engineer, Advanced Technologies	MICHAEL MEIJER OSC SUPPORT Regional Field Engineer 24 years with Otis	MIKE JENNINGS VIRGINIA CONTROLS Virginia Controls Expert
---	---	---

WHY OTIS?

OTIS

EXPERIENCE. TEAM. APPROACH. DELIVERY



Otis installing over
65%
equipment at LAWA



Resident mechanic teams
with
24-7 coverage



Dedicated **Regional Field Engineers** to support competitor equipment



Uptime and equipment
availability
97%



Critical **spare parts** stored onsite
and customized **parts procurement** program for LAWA



Daily **communication** and
performance tracking










































Partnership with **Small Business Enterprises** and meeting all **inclusivity** plans



Proven track record at
LAWA with new installations
and service

PORTFOLIO EXPERIENCE

AIRPORTS	GLOBAL AIRPORTS	LOS ANGELES LANDMARKS	
Detroit Metro Airport  55  2  192	Abu Dhabi, UAE International Airport  122  161  58  341	Getty Center & Getty Villas  55  2  57	Disneyland Resort  186  23  209
Indianapolis International Airport  34  32  14  66	Shanghai, China Pudong Airport  79  158  121  358	Wilshire Grand  38  14  52	Century Plaza Tower  54  54
Anchorage International Airport  21  27  2  50	Hyderabad, India Airport Extension  75  71  146	SoFi Stadium  28  50  78	US Bank Tower  47  6  53

LAWA & OTIS PARTNERSHIP

OTIS



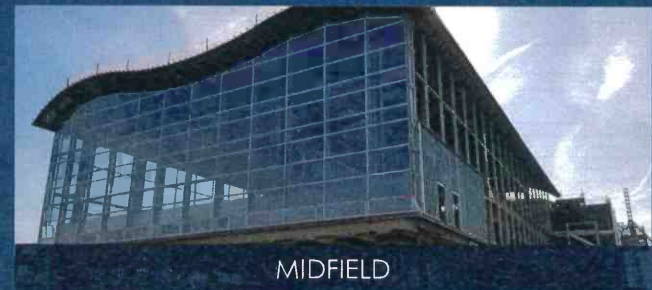
303

461

UNITS
INSTALLED
BY OTIS



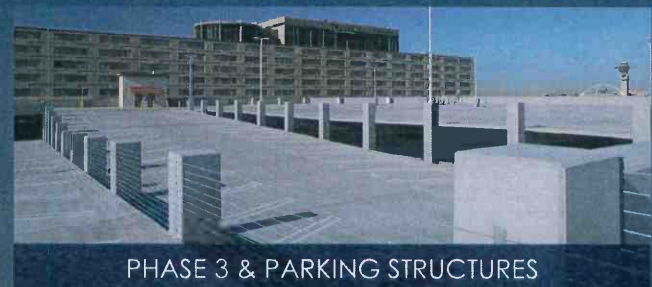
TOM BRADLEY INTERNATIONAL



MIDFIELD



T1, T2, T3, T4, T5, T7



PHASE 3 & PARKING STRUCTURES

COST PROPOSAL OVERVIEW

OTIS

24-7 PRESENCE

Bid Breakdown (USD/Monthly)	Total (\$)
Daily Non-Holiday & Holiday Staffing	929,011.54
Parts & Material (Includes Step Cleaning)	95,819.21
Reg 4	10,187.00
Total/Monthly (Not including onetime Mobilization/Start up)	1,035,017.75
Mobilization/Start Up (One Time Fee)	135,438.72

HOURLY RATE
\$183.41

Technician AM Shift, Regular Time

37%	Direct Wages
8%	Payroll Tax & WC
26%	Total Fringe
12%	Overhead & Consumables
20%	Markup

Attachment 3
Third Revised Cost Proposal Form

LOS ANGELES WORLD AIRPORTS: COST PROPOSAL FOR:
Elevator, Escalator and Moving Walkway Full Maintenance, Repairs, Modernization, Materials and Related Services at Los Angeles International Airport (LAX) and Van Nuys Airport (VNY)

Staffing requirement and hourly rate for holidays (OT) as requested by the City of Los Angeles	Hourly Rate	One Holiday Total	Annual Holiday Total	Annual Holiday Staffing Total	Annual Holiday Staffing Total
1. Escalator ASM	\$ 206.84	\$ 1,810.22	\$ 8,223.94	\$ 8,842.48	\$ 8,842.48
2. Escalator SMD	\$ 185.35	\$ 1,668.24	\$ 9,801.32	\$ 10,144.34	\$ 10,144.34
3. Escalator PM	\$ 275.85	\$ 2,482.64	\$ 11,059.12	\$ 11,425.57	\$ 11,425.57
4. Escalator AM	\$ 183.41	\$ 1,660.29	\$ 7,803.36	\$ 7,779.34	\$ 7,779.34
5. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
6. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
7. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
8. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
9. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
10. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
11. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
12. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
13. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
14. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
15. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
16. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
17. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
18. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
19. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
20. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
21. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
22. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
23. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
24. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
25. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
26. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
27. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
28. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
29. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
30. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
31. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
32. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
33. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
34. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
35. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
36. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
37. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
38. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
39. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
40. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
41. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
42. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
43. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
44. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
45. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
46. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
47. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
48. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
49. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
50. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
51. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
52. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
53. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
54. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
55. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
56. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
57. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
58. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
59. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
60. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
61. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
62. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
63. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
64. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
65. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
66. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
67. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
68. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
69. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
70. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
71. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
72. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
73. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
74. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
75. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
76. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
77. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
78. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
79. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
80. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
81. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
82. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
83. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
84. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
85. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
86. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
87. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
88. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
89. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
90. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
91. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
92. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
93. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
94. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
95. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
96. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
97. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
98. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
99. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06
100. Escalator SMD	\$ 117.85	\$ 1,057.65	\$ 4,816.06	\$ 4,816.06	\$ 4,816.06

ATTACHMENT 1

Parts & Materials - Cost Plan

The following is the mark-up that will be applied to all parts purchased on behalf of LAXWA. Parts purchased in-house and stock-up information will be required in monthly invoicing. (Please fill out only the cells shaded in blue)

Parts & Materials	Estimated Annual Parts Usage	Contract Term		
		Year 1	Year 2	Year 3
Mark-up A				
Mark-up B				
Mark-up C				
Mark-up D				
Mark-up E				
Mark-up F				
Mark-up G				
Mark-up H				
Mark-up I				
Mark-up J				
Mark-up K				
Mark-up L				
Mark-up M				
Mark-up N				
Mark-up O				
Mark-up P				
Mark-up Q				
Mark-up R				
Mark-up S				
Mark-up T				
Mark-up U				
Mark-up V				
Mark-up W				
Mark-up X				
Mark-up Y				
Mark-up Z				
Mark-up AA				
Mark-up AB				
Mark-up AC				
Mark-up AD				
Mark-up AE				
Mark-up AF				
Mark-up AG				
Mark-up AH				
Mark-up AI				
Mark-up AJ				
Mark-up AK				
Mark-up AL				
Mark-up AM				
Mark-up AN				
Mark-up AO				
Mark-up AP				
Mark-up AQ				
Mark-up AR				
Mark-up AS				
Mark-up AT				
Mark-up AU				
Mark-up AV				
Mark-up AW				
Mark-up AX				
Mark-up AY				
Mark-up AZ				
Mark-up BA				
Mark-up BB				
Mark-up BC				

INCLUSIVITY COMMITMENTS

OTIS
2022



CREATING A **CULTURE** OF INCLUSION

Inclusive leadership training
for 69,000 employees

OUR COMMITMENT TO **CHANGE**

Otis' commitment to diversity and
inclusion. Six steps to help us continue
to strengthen our culture

ESG GOALS

Environment and Impact
Health and Safety
People and Communities
Governance and Accountability

ACHIEVING GENDER **PARITY** BY 2030

Otis has pledged to realize parity of 50
percent women executives globally

America's Most Responsible Companies
NEWSWEEK

The World's Most Admired Companies
FORTUNE

Best Places to Work for LGBTQ+ Equality
HUMAN RIGHTS CAMPAIGN

World's Best Employers
FORBES

World's Top Female Friendly Companies
FORBES

INCLUSIVITY PLAN

OTIS

GOALS



Benchmark



Schedule



Monitor



Evaluate

PARTNER WITH LOCAL **SMALL BUSINESS ENTERPRISES** FOR 10%

		NAICS #	% OF CONTRACT VALUE
	Parts Supply Lift Solutions, Inc.	#423830	6.89
	Escalator Step Cleaning Supreme Facility Services Inc.	#561720	2.31
	Reg 4 Testing Reg 4 Elevator Testing	#238290	0.97

SBE OVERVIEW	\$	PERCENTAGE
Year 1 Total Cost	12, 555, 651.69	
Parts & Materials*	1,149,830.49	9.16
Reg 4	122, 244.00	1.0
TOTAL		10.16%

* Includes Step Cleaning

Subcontractor Utilization Report

LEADER-APPROVED SUBCONTRACTOR/ SUPPLIER/CLIMATE AND DIVERSITY	PERSON INFORMATION	AMOUNT BILLED	PROPOSED	% UTILIZED TO DATE	PROJECT DESCRIPTION - CONSOLE SUB TYPE
Name	Entity	For this period			
Address	Company		\$		
City/State/Zip	Federal ID				
Contact Name					
Telephone Number	Category Group	To date	\$	%	Year Order No.
Email Address	<input type="checkbox"/> MBE <input type="checkbox"/> DBE <input type="checkbox"/> ACDBE <input type="checkbox"/> WBE		\$	%	NAICS
Contract Agency					
Name	Entity	For this period			
Address	Company		\$		
City/State/Zip	Federal ID				
Contact Name					
Telephone Number	Category Group	To date	\$	%	Year Order No.
Email Address	<input type="checkbox"/> MBE <input type="checkbox"/> DBE <input type="checkbox"/> ACDBE <input type="checkbox"/> WBE		\$	%	NAICS
Contract Agency					
Name	Entity	For this period			
Address	Company		\$		
City/State/Zip	Federal ID				
Contact Name					
Telephone Number	Category Group	To date	\$	%	Year Order No.
Email Address	<input type="checkbox"/> MBE <input type="checkbox"/> DBE <input type="checkbox"/> ACDBE <input type="checkbox"/> WBE		\$	%	NAICS
Contract Agency					

OTIS AIRPORT MAINTENANCE

OTIS

Specialized Mechanics

Maintenance Mechanic Resident Team

Daniel Sanchez

Auggie Echeverria

Marshall Bennett

Service Management

Site Manager

Advance Scheduling

Real Time Updates

KPI Accountability

Accountability

Daily Huddle

Weekly Schedule Enforcement

Monthly Planning

Supervisor Quality Audits



**REGULATORY REQUIREMENT
COMPLIANCE**



**CONTRACT KICK OFF -
INITIAL EQUIPMENT
OVERVIEW**



**ONGOING
COMMUNICATION FOR
LARGE REPAIRS**



**DAILY CONVEYANCE OUT
OF SERVICE REPORT**



DAILY COMMUNICATION



**SERVICE RESPONSE
TIMES**



**ONGOING
REVIEWS/WEEKLY
MEETINGS**



**DEFICIENCIES NOTED
BY LAWA**

EXECUTION PLAN

OTIS

PHASE I Prior to Commencement

- Onboard and survey all units
- Order necessary spare parts
- Coordinate kick off with all key stakeholders
- Review and establish onsite processes

PHASE II Day 1

- Field operations surveys
- Perform safety inspections on units
- Test all elevator phones
- Verify all prints and tools are available and onsite

PHASE III Week 1

- Hold team meeting to ensure a smooth transition
- Familiarization of LAWA terminals with resident mechanics
- Within first 90 days, begin reviewing each piece of equipment for repairs, tests, etc.

PHASE IV Month 1

- Ongoing team meetings
- Ongoing quality and safety checks
- Review performance and coordinate any necessary repairs

PARTS PROCUREMENT

OTIS

Utilizing Inventory Software

Inventory Management Tracking
Physical Inventory Walk Throughs
Usage Reviews by Site Manager
Warehouse Plan – Check-in/Checkout parts

Parts to be held at LAWA Example Material Onsite

GAL DOOR OPERATORS
DOOR OPERATOR BOARDS
I/O BOARDS - VIRGINIA CONTROLS
MULTIPLE DRIVES FOR ESCALATORS
MODULES VIRGINIA CONTROLS
GIBS (OTIS & VC)
PEDISTAL STATION
SAFETY SWITCHES (ESC)
PANEL VIEW (VC)
RELAY 24V
RELAY 120 V
TRANSFORMERS
POWERSUPPLIES
LOAD WEIGHING DEVICES
JANSS EDGES
PANACHROME DETECTOR EDGES

ELEVATOR FANS
COMB IMPACT TOOL
CLUTCHES (ELEV)
MOTOR DOOR OPERATOR
EQ DEVICE (DRAKA & ANOTHER)
COMB TEETH
STEP GUIDE
OIL FOR ESC
PLC Power Supply
PLC Output Module
PLC Input Module
PLC High Speed Counter Module
BELT CLEANER
DEMARICATION LIGHTS
STEP SWITCHES

small example of parts to be held on site

Maintenance Tasks and Control Programs

The image displays four overlapping screenshots of Otis maintenance manuals. The top-left screenshot is titled 'Traction Elevator (continued)' and shows a 'Category 1 Test' table with columns for 'Task', 'Frequency', 'Time', and 'Checklist'. The top-right screenshot is titled 'Traction Elevator manual' and shows a 'Maintenance Task' table with columns for 'Task', 'Frequency', 'Time', and 'Checklist'. The bottom-left screenshot is titled 'Roped-Hydraulic Elevator' and shows a 'Maintenance Task' table with columns for 'Task', 'Frequency', 'Time', and 'Checklist'. The bottom-right screenshot is titled 'Escalators and Moving Walks' and shows a 'Maintenance Task' table with columns for 'Task', 'Frequency', 'Time', and 'Checklist'.

LAWA WEEKLY SERVICE MEETING

OTIS

LAWA Weekly Service Meetings

Previous week's callbacks

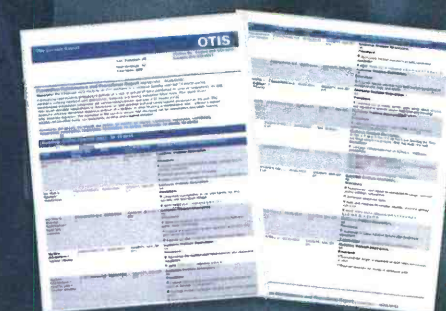
Work performed, progress on any deficiencies or other programs

Scheduled work requiring removal of conveyances from service

Reported issues

Monthly review of callbacks and invoices

Detailed Service Call and Repair Logs



Daily Conveyance Out of Service Report

Otis emails report for any conveyances left out of service for greater than 24 hours. This report will identify the unit information, issue discovered and next steps for corrective action, as well as estimated returned to service date.

Building	Elevator Out of Service	Major Repair	Adjuster Needed	Fault	Out of Service Date	Estimated Return to Service Date
Terminal 1	Elevator 5	Yes	No	Sheave bearings needs replaced	10/12	10/13

INFORMED

Get real-time notifications

ORGANIZED

Manage service documents

CONVENIENT

Pay bills online with simple performance dashboard

MOBILE

Get status of equipment wherever you are

WHY OTIS?

OTIS

EXPERIENCE. TEAM. APPROACH. DELIVERY



INSTALLING OVER

65%

EQUIPMENT



24-7
COVERAGE



DEDICATED
REGIONAL FIELD ENGINEERS



97%
UPTIME



CRITICAL
SPARE PARTS
STORED ONSITE



DAILY
COMMUNICATION



SBE
& INCLUSIVITY



PROVEN
TRACK RECORD

ATTACHMENT

6



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
10/12/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must have **ADDITIONAL INSURED** provisions or be endorsed. If **SUBROGATION IS WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER MARSH USA, INC. 20 CHURCH STREET, 8TH FLOOR HARTFORD, CT 06103	CONTACT NAME: PHONE (A/C, No, Ext): E-MAIL ADDRESS: Otis.CertRequest@marsh.com	FAX (A/C, No):
CN103059650-Otis-STAND-21-22	INSURER(S) AFFORDING COVERAGE	
INSURED OTIS WORLDWIDE CORPORATION OTIS ELEVATOR COMPANY ONE CARRIER PLACE FARMINGTON, CT 06032	INSURER A: National Union Fire Insurance Co. Of Pittsburgh, PA	NAIC # 19445
	INSURER B: AIU Insurance Co	19399
	INSURER C:	
	INSURER D:	
	INSURER E:	
	INSURER F:	

COVERAGES

CERTIFICATE NUMBER:

NYC-011496552-01

REVISION NUMBER: 1

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC <input type="checkbox"/> OTHER:			3980241 "\$2,000,000 General Aggregate" "Per Project / Location" "\$10,000,000 General Aggregate" "Per Policy"	12/01/2021	12/01/2022	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY			4594517 (AOS) 4594518 (MA) 4594519 (VA)	12/01/2021 12/01/2021 12/01/2021	12/01/2022 12/01/2022 12/01/2022	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$			3980244	12/01/2021	12/01/2022	EACH OCCURRENCE \$ 10,000,000 AGGREGATE \$ 10,000,000 \$
B	<input checked="" type="checkbox"/> WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) <input type="checkbox"/> Y <input checked="" type="checkbox"/> N If yes, describe under DESCRIPTION OF OPERATIONS below		N/A	020608650 (AOS) 020608652 (CA) 065885882 (NY) 020608654 (WI)	12/01/2021 12/01/2021 12/01/2021 12/01/2021	12/01/2022 12/01/2022 12/01/2022 12/01/2022	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Re: Location: Los Angeles World Airports - #203921

Los Angeles World Airports is/are included as additional insured (except workers compensation) when required by written contract and/or agreement. Waiver of Subrogation is included if required by contract.

CERTIFICATE HOLDER

CANCELLATION

Los Angeles World Airports
PO Box 92216
Los Angeles, CA 90009

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Marsh USA Inc.