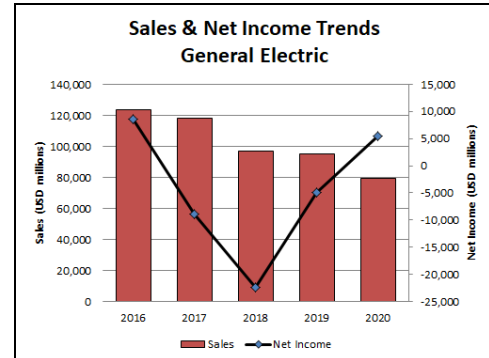


General Electric

Outlook

- In March 2021, the company announced it would sell its GECAS leasing division to AerCap in a deal valued at \$30 billion
- This further accelerates GE's focus on its industrial core markets – Power, Renewable Energy, Aviation, and Healthcare
- Demand at GE Aviation for aircraft engines cratered in 2020; unit is expected to recover slowly during 2021-2025
- Aerospace industry as whole is slowly beginning to recover as COVID-19 travel restrictions are lifted



Headquarters

General Electric Company
41 Farnsworth St
Boston, MA 02210
Telephone: + 1 (203) 373-2211
Website: <https://www.ge.com>

The General Electric Company traces its beginnings to Thomas A. Edison, who established his electric light company in 1878. In 1892, a merger of Edison General Electric Company and Thomson-Houston Electric Company formed General Electric Company. From the time of General Electric's incorporation in 1892, the company has engaged in developing, manufacturing, and marketing a wide variety of products for the

generation, transmission, distribution, control, and utilization of electricity. Over the years, development and application of related and new technologies have considerably broadened the scope of GE's activities and those of its affiliates. The company's products include motors, locomotives, industrial electronic products and components, electrical distribution and control equipment, power generation and delivery products, nuclear power support services and fuel assemblies, and commercial and military aircraft jet engines. It also produces engineered plastics, silicones, and cutting materials, as well as a wide variety of high-technology products used in aerospace, defense, and medical diagnostic applications.

Structure and Personnel

Key Corporate Staff

H. Lawrence Culp, Jr
Chairman and Chief Executive Officer
Victor Abate
Senior Vice President and
Chief Technology Officer
Nancy Anderson
Vice President and Chief Information Officer
Mike Barber
Chief Diversity Officer
Linda Boff
Chief Marketing & Communication Officer and
Vice President, Learning & Culture
President, GE Foundation
Patrick Byrne
Chief Executive Officer, GE Digital

Kevin Cox
Chief Human Resources Officer
Carolina Dybeck Happe
Senior Vice President and Chief Financial Officer
John Godsman
Head of Business Development
Nabil Habayeb
Senior Vice President and
President & CEO, GE International Markets
Mike Holston
Senior Vice President, General
Counsel & Secretary
Daniel Janki
Senior Vice President and
President & CEO, GE Power Portfolio
Kieran Murphy
President & CEO, GE Healthcare

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Jérôme Péresse

Senior Vice President and
CEO, GE Renewable Energy

Chris Pereira

Chief Risk Officer and Vice President, Strategy

Riccardo Procacci

CEO, Avio Aero, and Vice President &
CEO, GE Additive

John S. Slattery

President and CEO, GE Aviation

Russell Stokes

President & CEO, GE Aviation Services
Chairman, GE Power Portfolio

Scott Strazik

CEO, GE Power

Jennifer VanBelle

Senior Vice President, GE Capital CEO, and
Treasurer of GE and GE Capital

Steve Winoker

Vice President, Investor Relations

Selected Operating Management

The following officers are those most closely associated with the company's aerospace businesses.

GE Aviation Executives

John S. Slattery

President and Chief Executive Officer,
GE Aviation

Mohamed Ali

Vice President and General Manager,
Engineering Division

Joe Allen

Chief Diversity Officer

Betsy Bingham

Vice President Lean Operations

Eileen Brumback

General Counsel and Leader, Legal Operations

David Burns

Vice President, Chief Information Officer

David A. Farkas

General Manager, Business Development M&A

Kathleen T. McCarthy

Chief Human Resources Officer

Kathy MacKenzie

President and CEO, Commercial Engine Operations

Gary D. Mercer

Vice President and General Manager,
Engineering Division

Brad D. Mottier

Vice President and General Manager, Business
and General Aviation and Integrated Systems

Riccardo Procacci

CEO, Avio Aero
CEO, GE Additive

Russell Stokes

President & CEO, GE Aviation Services
Chairman, GE Power Portfolio

Jason Tonich

Vice President and General Manager,
Global Sales & Marketing

Shane M. Wright

Senior Vice President, Chief Operating Officer &
Chief Financial Officer, GE Aviation

Weiming Xiang

President, GE Aviation Greater China

Product Area

General Electric is made up of two segments, Industrial (units 1-7) and GE Capital, each of which includes one or more subunits.

General Electric Company

1. Aviation
 - 1.1 Commercial
 - 1.2 Military
 - 1.3 Business & General Aviation
 - 1.4 Marine
 - 1.5 Digital
2. Power
3. Renewable Energy
4. Additive Manufacturing
5. Healthcare
6. Digital
7. Lighting
8. GE Capital
 - 8.1 GE Capital Aviation Services

GE Aviation is the sole operation within GE that is closely related to the aerospace field as a Tier 1 supplier. The other units serve consumer, health, financial, and other major global industries or markets. In this report, only the products, systems, and services for the defense and aerospace industries are addressed.

Aviation. GE Aviation designs, develops, and manufactures aircraft turbofan, turbojet, turboprop, and turboshaft engines; marine turbine engines; turbine modules; combustors, frames, and cases; aluminum and magnesium castings; flight management systems; displays; aviation computing systems; power generation and distribution products; mechanical actuation products; landing gear; thrust reverser actuation systems; control electronics, motors, high power mechanical transmissions, and actuators; propeller systems; wing, leading and trailing edge assemblies;

General Electric

flight control surfaces; empennage components; fairings; nacelles; and aerial refueling systems.

Current employment is around 40,000 following some 13,000 job cuts in response to the COVID-19 pandemic. Previously, at the end of 2019, the unit employed about 52,000 people.

GE Capital Aviation Services. GECAS became involved in U.S. aircraft finance in 1965 and is now one of the world's largest aircraft leasing companies, with an

owned/managed fleet of about 1,600 aircraft. It serves approximately 205 customers in 73 countries from a network of 15 offices around the world. GECAS provides a wide range of assets including narrow- and widebody aircraft, regional jets, turboprops, freighters, engines, helicopters, financing, and materials. *(Merger with AerCap pending as of mid-2021. Unit has been listed as a discontinued operation in GE's 2021 financial reports).*

Facilities

Headquarters: GE Aviation, 1 Neumann Way, Cincinnati, OH 45215-6301. Telephone: + 1 (513) 243-2000. GE Aviation produces large and small jet engines for commercial and military aircraft. The unit also supplies aircraft-derived engines for marine applications and provides aviation services. This unit was previously known as GE Aircraft Engines.

Website: <https://www.geaviation.com/>

GE Aviation, 1000 Western Ave, Lynn, MA 01910. The unit produces gas turbine engines for the regional and business aircraft market. Products include the F414, F404, T700/CT7, and CF34-3A/B engines.

GE Marine, 1 Neumann Way, Cincinnati, OH 45215. Offers gas turbines, diesel engines, electric drives, and dynamic positioning solutions to the marine industry.

Website: <https://www.geaviation.com/marine>

GE Capital Aviation Services, 777 Long Ridge Rd, Stamford, CT 06927. Telephone: + 1 (203) 585-2700. Provides a full range of operational and financial services, including short-term rentals, guaranteed spare engine availability, engine exchanges, operating leases (including sale/leaseback), and structured, long-term finance options. *(Merger with AerCap pending as of mid-2021. Unit has been listed as a discontinued operation)*

Website: <https://www.gecas.com>

GE Engine Services, 1 Neumann Way, Cincinnati, OH 45215-6301. The activities of this unit fall into three categories: engine overhaul, facility design and construction, and manufacture and sale of special maintenance equipment. Services are available to all GE customers and equipment users.

GE Aviation, Avionics, 14200 Roosevelt Blvd, Clearwater, FL 33762. Telephone: + 1 (727) 531-7781. Cockpit displays, high-resolution mission data displays, and control display units; graphics data processing involving high-performance computation of video, visual, and other mission data; fuel management and measurement systems; and logistics support.

GE Aviation, Power, 740 E National Rd, Vandalia, Ohio, 45377-3000. Telephone: + 1 (937) 898-5881. Manufactures custom electrical power generation, control, and power conversion devices for aerospace and defense applications.

GE Canada, 2300 Meadowvale Blvd, Mississauga, ON L5N 5P9 Canada. Telephone: + 1 (905) 858-5100.

Unison Industries LLC, 7575 Baymeadows Way, Jacksonville, FL 32256. Telephone: + 1 (904) 739-4000. Unison, a wholly owned subsidiary within GE Aviation, manufactures aircraft ignition systems for turbine and piston engine aircraft.

Website: <https://www.unisonindustries.com/>

GE Power, 4200 Wildwood Pkwy, Atlanta, GA 30339. Unit headquarters.

Website: <https://www.ge.com/power>

CFE Company, 111 S 34th St, PO Box 62332, Phoenix, AZ 85082. Telephone: + 1 (602) 231-4570. This joint venture between GE and Honeywell produces the CFE738 engine.

CFM International Inc, PO Box 15514, 111 Merchant St, Cincinnati, OH 45246. Telephone: + 1 (513) 563-4180. Founded in 1974, CFMI is a joint venture of GE and Safran (Snecma) of France. The principal product is the CFM56 series engine.

Website: <https://www.cfmaeroengines.com/>

CFM International SA, 2, Blvd General Martial Valin, 75015, Paris. This is the France-based office of CFMI.

Avio Aero, Via I Maggio, 99, 10040 Rivalta di Torino (TO), Italy. Telephone: + 39 011 0082111. Headquarters. Acquired in 2013, Avio Aero also produces accessory drivetrains and power gearboxes, low-pressure turbine modules, and rotating components for gas turbines.

Website: <https://www.avioaero.com/>

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Avio Aero, Viale Giuseppe Luraghi 20, 80038 Pomigliano d'Arco (NA), Italy. Telephone: + 39 081 3161111. This unit provides maintenance, repair, and overhaul (MRO) services for commercial aircraft engines. Aero engine combustion systems are also manufactured here.

Avio Aero, Via Angelo Titi, 16 - 18 - 20, 72100 Brindisi, Italy. Telephone: + 39 0831 556111. Focuses on military aircraft engine MRO work. Also produces components of the low-pressure turbine for the GENx civil engine.

GE Additive, Freisinger Landstrasse 50, 85748 Garching bei München, Germany. This unit offers products and services in the additive manufacturing, also known as 3D printing, market.

Website: <https://www.ge.com/additive/>

GE Aviation Czech s.r.o., Beranovych 65, 199 02 Prague 9 – Letnany, Czech Republic. Formerly known as Walter Engines, this small turboprop manufacturer was acquired in 2008. The unit produces the H Series turboprop engines.

Website: <https://www.geturboprops.com>

Corporate Overview

General Electric is a conglomerate whose aerospace operations are concentrated in its GE Aviation unit. GE Aviation is one of the world's leading manufacturers of large jet aircraft engines, along with Pratt & Whitney and Rolls-Royce. GE offers products and services for commercial, corporate, military, and marine applications.

New Products and Services

CFM RISE. In June 2021, CFM International partners GE Aviation and Safran launched a new technology development program targeting more than 20 percent lower fuel consumption and CO2 emissions compared to today's engines. The CFM RISE (Revolutionary Innovation for Sustainable Engines) program will demonstrate and mature a range of new technologies for future engines that could enter service by the mid-2030s.

Central to the program is state-of-the-art propulsive efficiency for the engine, including developing an open fan architecture. This is a key enabler to achieving significantly improved fuel efficiency while delivering the same speed and cabin experience as current single-aisle aircraft. The program will also use hybrid electric capability to optimize engine efficiency while enabling electrification of many aircraft systems.

A demonstrator engine is scheduled to begin testing at GE and Safran facilities around the middle of this decade and flight test soon thereafter.

Next-Generation FFG 62 Frigate Power. In December 2020, GE Marine announced a contract to provide Fincantieri Marinette Marine with a GE LM2500+G4 aeroderivative marine gas turbine to power the United States Navy's Constellation class (FFG 62) frigate. GE also will provide the gas turbine auxiliary skids (electric start, fuel forwarding, and water wash systems) and the gas turbine control system. The

new U.S. Navy Constellation class is based on Fincantieri's FREMM design.

Major T700 Contract. In December 2019, GE Aviation was awarded a contract for the continued production of T700 turboshaft engines through 2024. If completely exercised, the contract is valued at more than \$1 billion for as many as 1,700 T700 engines. The T700/CT7 family of turboshaft and turboprop engines power 15 types of helicopters and fixed-wing aircraft for more than 130 customers in more than 50 countries. These engines are produced in Lynn, Massachusetts.

MQ-25 Components. In June 2019, Boeing awarded GE Aviation a contract to supply a stores management solution for the MQ-25 unmanned aerial refueling program. The contract supports Boeing's engineering and manufacturing development program to provide four MQ-25 aircraft to the U.S. Navy, with Initial Operational Capability expected by 2024.

Improved Turbine Engine Program. In February 2019, GE Aviation was selected as the winner of the Improved Turbine Engine Program (ITEP) competition with a \$517 million contract to complete engineering and manufacturing development work on its T901-GE-900 engine (formerly GE3000). This is a U.S. Army program to develop a smaller, cheaper, and more powerful engine for Boeing AH-64 Apaches and Sikorsky UH-60 Black Hawks. The U.S. Army wants its new ITEP engine to provide 50 percent more power and 25 percent better specific fuel consumption while reducing life-cycle costs. The competition began in August 2016 when GE Aviation was awarded a \$102 million development contract, while a competing team of Honeywell and Pratt & Whitney, as the Advanced Turbine Engine Company (ATEC), was awarded \$154 million. ATEC developed its HPW3000 engine for this effort.

General Electric

ATEC immediately filed a protest with the Government Accountability Office (GAO) over the selection. This protest was subsequently denied in May 2019.

Website:

<https://www.geaviation.com/military/engines/t901-turboshaft-engine>

Versatile Test Reactor. In November 2018, GE Hitachi Nuclear Energy (GEH) and its PRISM technology were selected by Battelle Energy Alliance (BEA) to support the U.S. Department of Energy's Versatile Test Reactor (VTR) program, which seeks to utilize fast neutron spectrum technology to support accelerated development of fuels and materials for U.S. advanced reactors. The project is focused on advancing the reactor design and developing cost estimates for a new fast neutron spectrum irradiation capability. The results of the project will help inform a DoE decision about whether to construct a sodium-cooled fast test reactor that could become operational as early as 2026.

Affinity. In October 2018, GE Aviation completed the initial design of the first supersonic engine purpose-built for business jets, the Affinity turbofan. The engine will initially be utilized on the Aerion AS2 supersonic business jet. After two years of a preliminary study, GE Aviation and Aerion launched a formal process in May 2017 to define and evaluate a final engine configuration for the AS2.

However, in May 2021, Aerion announced it was shutting down after failing to raise enough cash to keep the AS2 program going. Work on GE Aviation's Affinity engine followed suit shortly thereafter, with the company confirming it had discontinued work on the powerplant.

Plant Expansion/Organization Update

Beavercreek Expansion. In June 2021, GE Aviation broke ground on its new lean engine component manufacturing facility for both civil and military aviation and aeroderivative applications. The facility will be built on 53 acres in the Miami Valley Research Park located at 4230 Research Blvd in Beavercreek, Ohio. The 280,000 square foot facility is expected to be completed by the first quarter of 2022 and fully operational by the end of 2022. The new facility will optimize manufacturing operations and advanced technology development into one facility, combining operations from seven buildings into one.

COVID-19 Impact. In March 2020, GE Aviation announced it would reduce its workforce by 10 percent, or about 2,600 employees, and furlough 50 percent of its MRO workers for three months in response to the collapse in air travel caused by the COVID-19 pandemic. By mid-2020, the company said permanent

reductions could reach as high as 25 percent, including the previously announced cut. All told, the tally could see 13,000 jobs eliminated, which would result in cost savings of \$1 billion. By November, the company was warning that more cuts could be forthcoming due to a lengthy airline recovery. The GE Aviation workforce was about 52,000 before the pandemic hit. As of early 2021, this total had dropped to around 40,000, according to GE's 2020 annual report.

Renewable Energy Unit Formed. In January 2019, GE announced that it intends to intensify its focus on the growing renewable energy market by consolidating all of the company's renewable and grid assets into a single, simplified renewable energy business. The effort will move GE's grid solutions and hybrid renewables (including solar and storage systems) technologies into the GE Renewable Energy business, complementing its existing onshore wind, offshore wind, LM Wind Power, and hydro offerings. The change will also see GE's Onshore Wind operations restructured, eliminating its headquarters layer and elevating its current regional teams – Americas, Europe/Africa, MENAT and APAC – to improve competitiveness.

IoT Company Formed. In December 2018, GE announced plans to establish a new, independent company focused on building a comprehensive Industrial Internet of Things (IIoT) software portfolio. The company will start with \$1.2 billion in annual software revenue and an existing global industrial customer base. The company is intended to be a GE wholly owned, independently run business with a new brand and identity, its own equity structure, and its own board of directors. The proposed new organization aims to bring together GE Digital's IIoT solutions, including the Predix platform, Asset Performance Management, Historian, Automation (HMI/SCADA), Manufacturing Execution Systems, Operations Performance Management, and GE Power Digital and Grid Software Solutions businesses.

GE Power Reorganized. In October 2018, GE announced plans to reorganize GE Power into two businesses – GE Gas Power, comprising Gas Power Systems and Power Services; and GE Power Portfolio, comprising the Steam, Grid Solutions, Nuclear, and Power Conversion businesses – and consolidate Power's headquarters structure to create a more simplified business structure.

AiRXOS Formed. In June 2018, AiRXOS was formed to provide a digital unmanned aircraft system ecosystem designed for safe, efficient UAS operations between manned and unmanned traffic. AiRXOS is a venture between GE Business Innovations and GE Aviation, and is a wholly owned subsidiary of GE.

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Website: <https://www.airxos.io>

Winnipeg TRDC Investments. In February 2018, GE Aviation revealed a CAD26 million (\$21 million) investment to its Winnipeg Testing, Research and Development Centre (TRDC) at James Richardson International Airport. The additional investment expanded and modified the five-year-old aircraft engine testing facility to accommodate the GE9X engine, which will power Boeing's 777X aircraft. The TRDC opened in 2012 and is owned by GE Aviation and operated by StandardAero. Initially designed for icing and cold weather testing, the facility was expanded in 2013 to conduct all weather development and engine testing.

New Singapore Facility. In February 2018, GE Aviation announced it will invest SGD42 million (\$32 million) in a new Singapore facility to manufacture components for its GE9X engine. The new 50,000-square-foot facility will be located at Seletar Aerospace Park and produce high-pressure compressor (HPC) vanes.

Huntsville Facility. In November 2017, GE Aviation took occupancy of a new factory complex in Huntsville, Alabama. The \$200 million center is comprised of two adjacent factories located on 100 acres. One factory would produce silicon carbide (SiC) ceramic fiber, the raw material used to make the unidirectional ceramic matrix composites (CMC) tape to be produced in the neighboring factory. The CMC tape would be used to fabricate CMC components for jet engines and land-based gas turbines.

New Dowty Headquarters. In July 2017, Dowty Propellers announced it had created a new facility near Gloucester in Brockworth, England. This followed a fire in February 2015 that destroyed the company's operating headquarters and blade manufacturing facility. Since that time, the company has been operating out of an interim facility. The new 183,000-square-foot facility was opened in December 2019.

Muskegon "Brilliant Factory" Opened. In May 2017, GE Aviation celebrated the grand opening of its \$14.5 million Brilliant Factory in Muskegon, Michigan. The new 35,000-square-foot facility manufactures parts for the GE90 engine, and performs development work for new programs as needed. The "brilliant" part of the factory is that the plant uses data and analytics to run more efficiently. The new facility expands GE Aviation's footprint in Muskegon to about 220,000 square feet over three buildings.

Chinese MRO Tech Center Opened. In March 2017, the GE Aviation (China) Repair Technology Development Center was opened in Lingang Industrial

Park in Shanghai. This center, which is the first footprint of GE Aviation repair technology development in China, develops and industrializes advanced engine service and repair technology to support MRO shops and component repair shops, and provides on-wing support.

Czech Turboprop Facility. In October 2016, GE and Czech Republic government officials signed an investment agreement to build GE's new turboprop headquarters in the Czech Republic. The investment supports development of GE's all-new Catalyst advanced turboprop engine chosen by Textron Aviation to power the Cessna Denali in 2015. The new Czech headquarters will consolidate GE Aviation Czech s.r.o. with the new Catalyst program. Opening in 2022, the new GE turboprop headquarters is expected to produce more than 400 Catalyst engines per year at full production rate.

Website: <https://www.geturboprops.com>

Alabama Materials Factories. In June 2016, GE Aviation broke ground on two adjacent factories to mass-produce silicon carbide (SiC) materials used to manufacture ceramic matrix composite components (CMCs) for jet engines and land-based gas turbines for electric power. GE Aviation invested more than \$200 million to construct the two factories on 100 acres in Huntsville, Alabama. The plants opened in mid-2018.

Digital Business Unit Formed. In March 2016, GE Aviation created a new digital organization that brings all of the digital expertise from across Aviation into one business. GE Aviation Digital supports the operations of customers across the aviation ecosystem by leveraging data science, domain expertise, and software capabilities to increase productivity and minimize downtime.

Headquarters Moved to Boston. In early 2016, GE announced it would move its headquarters from Fairfield, Connecticut, to Boston, Massachusetts. The firm was reportedly offered about \$145 million in taxpayer incentives to make the move. GE would sell its offices in Fairfield and at 30 Rockefeller Plaza in New York City to further offset the cost of the move. The company moved roughly 800 jobs to Massachusetts by 2018. The headquarters is located in Boston's Seaport District.

GE Power Formed. In November 2015, GE announced that with the completion of its Alstom acquisition, GE Power & Water and Alstom Power had been combined to form GE Power. The unit is headquartered in Schenectady, New York. The company's estimated revenue is \$30 billion. At the

General Electric

time, GE Power had six business lines: Power Services, headquartered in Baden, Switzerland; Gas Power Systems, headquartered in Schenectady; Steam Power Systems, headquartered in Baden; Distributed Power, headquartered in Jenbach, Austria; GE Hitachi Nuclear Energy, headquartered in Wilmington, North Carolina; and Water & Process Technologies, headquartered in Trevose, Pennsylvania.

Website: <https://www.ge.com/power>

Mergers/Acquisitions/Divestitures

Transformer Solutions Acquisition. In June 2021, GE-Prolec Transformers, a subsidiary of a 50-50 joint venture between GE and Xignux, a Mexico-based private company, agreed to acquire SPX Transformer Solutions for \$645 million in cash. The acquisition is expected to enhance Prolec GE's position as a key distribution and power transformer player providing customers with a wider choice of products and an enhanced next-generation portfolio, the company said.

AerCap Acquiring GECAS. In March 2021, GE announced an agreement to combine its GE Capital Aviation Services business (GECAS) with AerCap Holdings N.V. to create an aircraft leasing giant.

The deal is valued at \$30 billion, including approximately \$24 billion in cash; 111.5 million ordinary shares equivalent to approximately 46 percent ownership of the combined company with a market value of approximately \$6 billion as of March 9, 2021; and \$1 billion paid in AerCap notes and/or cash upon closing. GE will transfer \$34 billion of GECAS's net assets, including its engine leasing and Milestone helicopter leasing businesses, to AerCap. GE plans to use the transaction proceeds to reduce debt.

The transaction simplifies GE and focuses it on its industrial core-Power, Renewable Energy, Aviation, and Healthcare-while significantly reducing GE Capital assets and generating proceeds to further de-risk and de-lever, the company said.

The transaction is expected to close in 9-12 months, subject to regulatory approvals and other customary closing conditions.

GE Aviation Hamble Sold to Aernnova. In October 2019, Aernnova acquired GE Aviation's aerostructures business in Hamble, U.K. Hamble supplies composites, metallic, acrylics, and hybrid aircraft structures. The facility is equipped to handle large components and complex structures, including the wing fixed trailing-edge (WFTE) for the Airbus A350 XWB. Hamble also provides the complete engine nacelle assembly for the De Havilland Dash 8 Q400 regional turbo prop and the cockpit windscreen and

canopy systems for the BAE Systems Hawk and T-45 Goshawk trainer aircraft, among other elements. Terms were not announced.

Baker Hughes Divested. In September 2019, GE reduced its ownership in oil and gas company Baker Hughes, a GE company (BHGE), via a public offering of 115 million shares of Class A common stock. GE reported \$2.7 billion in net proceeds from the divestiture, which reduced its ownership in BHGE to about 38.4 percent. GE no longer has a controlling interest in Baker Hughes and expects to divest the remainder of its holdings over time. GE first announced it would sell off its stake in BHGE as part of its portfolio readjustments in June 2018. The firm is now known as Baker Hughes Company and trades on the New York Stock Exchange under the symbol "BKR."

GE Transportation Sold to Wabtec. In February 2019, GE completed the spin-off of its transportation business and its subsequent merger with Wabtec Corporation. This merger combines Wabtec's range of freight, transit and electronics products with GE Transportation's equipment, services and digital solutions in the locomotive, mining, marine, stationary power, and drilling industries. In the transaction, GE received approximately \$2.9 billion in cash as well as shares of Wabtec common stock and Wabtec non-voting convertible preferred stock that together represent an approximately 24.9 percent stake in Wabtec. The new company is forecast to have \$8 billion in revenues and 27,000 employees in 50 countries. Plans for the transaction were first announced in May 2018.

BioPharma Sale to Danaher. In February 2019, GE agreed to sell its BioPharma business to Danaher Corporation for a total consideration of \$21.4 billion, including \$21 billion in cash. The deal was completed in 2020 following Danaher's divestiture of certain units as a condition of obtaining regulatory approval.

ServiceMax Sold. In December 2018, GE Digital agreed to sell a majority stake in ServiceMax, a provider of field service management software, to private equity firm Silver Lake. Under the agreement, GE will retain a 10 percent equity ownership in ServiceMax. Financial terms were not disclosed. GE acquired ServiceMax in November 2016 for \$915 million.

Middle River Aircraft Systems Divested. In September 2018, ST Engineering's U.S. subsidiary, VT Aerospace, agreed to acquire Middle River Aircraft Systems (MRAS) from General Electric for \$630 million. MRAS is a manufacturer of engine nacelle systems for both narrowbody and widebody aircraft. The company is based in Baltimore, Maryland, and has approximately 800 employees. The purchase closed in early 2019.

General Electric

Healthcare Spin-off. In June 2018, GE announced plans to spin off its healthcare unit into a stand-alone operation as part of its overall corporate restructuring. The business provides medical imaging, monitoring, biomanufacturing, and cell therapy technology, leveraging deep digital, artificial intelligence and data analytics capabilities. However, following a deal to sell its BioPharma business to Danaher Corporation, the spin-off was put on hold as GE re-evaluates its plans for the unit.

Website: <https://www.gehealthcare.com/>

OC Robotics Acquired. In June 2017, GE Aviation acquired OC Robotics, a designer and manufacturer of commercial snake-arm robots and software for confined and hazardous environments. OC Robotics' flexible snake-arm robots can conduct various tasks, including inspections, fastening, and cleaning when integrated with tooling. Founded in 1997 in Bristol, U.K., OC Robotics will support GE Aviation's Services organization. Terms were not announced.

Website: <https://www.ocrobotics.com>

AirVault Acquired. In March 2017, GE Aviation acquired Critical Technologies Inc, which is branded as AirVault, a privately owned supplier of cloud-based digital records management. The combination of AirVault and GE will further enable Web-based fleet maintenance records management across the aviation ecosystem with GE's Configuration Data Exchange. Terms were not announced.

Santa Ana Unit Sold. In January 2017, Admiralty Partners Inc, an investment firm focused on acquisitions in the aerospace and defense markets, announced that an affiliate had acquired GE Aviation's Santa Ana, California, operations. The Santa Ana business would continue to operate at its Southern California location under the name Integral Aerospace LLC. The operation produces landing gear components, carbon fiber filament-wound external fuel tanks for U.S. Navy aircraft, aircraft-mounted fuel pumps, and a variety of machined structures and engine components. Terms were not announced.

Arcam Acquisition. In December 2016, GE Sweden Holdings AB, a GE Aviation operating unit, acquired a controlling stake (76.15 percent) in Arcam AB for about \$696 million. Arcam is the inventor of electron beam melting machines for metal-based additive manufacturing and a producer of advanced metal powders, with customers in the aerospace and orthopedic industries. Arcam also operates AP&C, a metal powders operation in Canada, and DiSanto Technology, a medical additive manufacturing firm in Connecticut. The company, which generated

\$80 million in revenues in 2015, has about 320 employees.

Concept Laser Acquisition. In October 2016, GE acquired a 75 percent stake in German 3D printing firm Concept Laser for \$599 million. Concept Laser designs and manufactures powder bed-based laser additive manufacturing machines. Employing more than 200, the company is focused on the aerospace, medical, and dental industries. In order to support the growth potential of the business, GE has committed to invest significantly in Lichtenfels, which will continue to be Concept Laser's headquarters and become a new German center for GE. GE stated that it will be able to take full control of the company in a number of years.

SLM Solutions Bid Dropped. In October 2016, GE dropped its \$732.9 million bid for 3D printing company SLM Solutions Group AG. The purchase was opposed by investor Elliott Advisors, which owns 20 percent of SLM.

Power Gen Assets Divested. In February 2016, GE completed the divestment of the power generation assets of Alstom's heavy-duty gas turbine business to Ansaldo Energia for EUR120 million. These assets comprise Alstom's F-class gas turbine, its GT26 product line, and its GT36 technology development program.

Appliances Divested. In January 2016, GE signed an agreement to sell its Appliances business to Qingdao Haier Co Ltd for \$5.4 billion. The transaction was targeted to close in mid-2016.

Alstom Units Acquired. In November 2015, GE completed its EUR9.7 billion (\$10.5 billion) acquisition of Alstom's power and grid businesses. At the same time, GE also announced it had completed the sale of its rail signaling business to Alstom, for approximately \$800 million. The completion of the transaction followed the regulatory approval of the deal in over 20 countries and regions, including the European Union, the U.S., China, India, Japan, and Brazil. It is GE's largest-ever industrial acquisition. The deal to acquire Alstom was reached in 2014.

GE Capital Divestments. In April 2015, GE announced that it would sell most of its finance operations as part of a strategy to focus the company on its industrial businesses. GE said it planned to shed its GE Capital assets, including its real estate, commercial lending, and consumer banking businesses – in all, about \$275 billion in assets, according to reports. The company planned to keep some \$90 billion in financing assets directly related to selling products such as aviation engines, medical equipment, and power generation and electrical grid gear.

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Milestone Aviation Group Acquired. In January 2015, GE Capital Aviation Services closed on its acquisition of Milestone Aviation Group, the Dublin, Ireland-based helicopter lessor, for \$1.775 billion, plus the assumption or payoff of Milestone's existing debt. Milestone's fleet includes 178 helicopters worth \$3.0 billion, and the firm has a strong forward order and option book of 121 firm and option aircraft with a variety of helicopter manufacturers. The 121 aircraft have an estimated aggregate purchase price of \$2.7 billion. The helicopters in Milestone's fleet are used in a variety of industries, and are currently leased to 32 operators in 26 countries. Current Milestone CEO Richard T. Santulli would serve as chairman of the helicopter leasing business and become an officer of GE. Milestone President Daniel Rosenthal would serve as president of the business, which would continue to operate as Milestone Aviation Group. The deal was first announced in October 2014.

Website: <http://milestoneaviation.com>

Hydraulic Actuation Units Sold. In June 2014, Triumph Group acquired the hydraulic actuation business of GE Aviation for about \$70 million. GE's hydraulic actuation business consists of three facilities located in Yakima, Washington; Cheltenham, England; and the Isle of Man. The business employs approximately 475 people and does extensive business with Boeing, Airbus, and other major airframers. Key product offerings include complete landing gear actuation systems, door actuation systems, nosewheel steering systems, hydraulic fuses, manifolds, flight control actuation systems, and locking mechanisms for the commercial, military, and business jet markets.

GE Buys Avio Aviation Units. In August 2013, General Electric completed the acquisition of the aviation business of Avio SpA for \$4.3 billion (EUR3.3 billion). The operation was renamed Avio Aero, a GE Aviation business. GE and its joint venture companies comprise more than 50 percent of Avio Aero's revenues. The acquisition, which did not include the space unit, furthers GE's participation and expertise in the areas of mechanical transmission systems, low-pressure turbines, combustion technology, and automation systems. GE would pursue opportunities for Avio Aero in power generation, oil, and marine products. For example, Avio Aero's capabilities in transmission systems present growth opportunities in several industrial sectors. Around the world, Avio Aero has approximately 4,700 employees, of which approximately 4,000 are located in Italy. It also has plants in Poland, Brazil, and China. The deal was first announced in December 2012.

Website: <https://www.avioaero.com/>

Electromechanical Actuation Unit Sold. In June 2013, TransDigm Group acquired the assets of GE Aviation's Electromechanical Actuation Division for approximately \$150 million in cash. The business, now operated by TransDigm through Whippany Actuation Systems, manufactures proprietary, highly engineered aerospace electromechanical motion control subsystems for civil and military applications.

Teaming/Competition/Joint Ventures

Advanced Atomization Technologies. In November 2012, Parker Aerospace and GE Aviation formed a joint venture – Advanced Atomization Technologies LLC – to enhance the development and manufacture of commercial aircraft engine fuel nozzles. The 50-50 joint venture, created specifically to produce fuel nozzles for current and future GE Aviation commercial engine platforms (including aerospace and aeroderivative engines), is located in the Parker Gas Turbine Fuel Systems Division facility in Clyde, New York. The joint venture employs approximately 300 assemblers, technicians, engineers, and other professionals in the production of advanced fuel nozzles and related products for GE Aviation.

Website: <https://advancedatomization.com>

Advanced Ceramic Coatings. In November 2014, GE Aviation and Turbocoating SpA of Parma, Italy, formed a 50-50 joint venture, called Advanced Ceramic Coatings, to provide thermal barrier coatings for CMC components used in jet engines. ACC would operate from a dedicated area of Turbocoating's U.S. operation in Hickory, North Carolina. The new venture combines Turbocoating's proprietary coatings technologies and industrial processes with GE Aviation's coatings processes developed specifically for CMCs to focus on producing advanced coatings applied to GE's high-temperature CMCs in the post-fabrication phase. In 2016, the venture selected Duncan, South Carolina, as the location for its new environmental barrier coating facility.

Website: <https://www.advanced-ceramic-coatings.com>

AVIAGE Systems. In January 2011, GE and Aviation Industry Corporation of China (AVIC) formed an avionics joint venture called GE-AVIC Civil Avionics Systems. The 50:50 joint venture company develops open-architecture integrated modular avionics solutions and markets them to the global commercial aerospace industry for new aircraft platforms, beginning with the C919. In November 2012, the joint venture was renamed AVIAGE Systems. Plans for the venture were first announced in November 2009.

Website: <http://www.aviagesystems.com>

General Electric

B-52 Engine Replacement. The USAF is looking to replace the Pratt & Whitney TF33-PW-103 engines that currently power the B-52. The service is interested in a new engine that provides greater fuel efficiency, improved reliability, and similar performance characteristics to the TF33.

A long-delayed Request for Proposals was released in May 2020, with selection of a contractor to follow within a year. Competitors for the program include Pratt & Whitney with the PW800, GE Aviation with the CF34-10 and Passport engines, and Rolls-Royce with the F-130 engine. Boeing, the prime contractor for the B-52, is positioning itself to be the project's systems integrator. Some 608 engines would be needed to equip the entire inventory of 76 B-52s.

A notional schedule would see testing of the selected design begin in 2022, with production to run from 2026 to 2034. The re-engining program has a potential value of around \$11 billion.

Barco. In July 2014, GE Aviation and Barco's Defence and Aerospace division signed a Memorandum of Understanding (MoU) for collaboration in the development of a new family of open-system cockpit display products targeted at display and avionics system applications for helicopters.

Boeing Business Jets. In July 1996, Boeing and General Electric announced the formation of a new joint venture to build a long-range business jet capable of flying from New York to Tokyo. The jet is based on Boeing's 737-700. GE purchased the first two aircraft for its own use.

Website: <http://www.boeing.com/commercial/bbj>

CAIGA. In July 2013, China Aviation Industry General Aircraft Co Ltd signed an agreement with GE Aviation to become the first Authorized Service Center for the H80 turboprop engine family in China. With this agreement, the CAIGA Customer Service Center can perform line maintenance inspections and routine engine maintenance, including removal and replacement of H75, H80, and H85 engines and engine components.

CFE Company. Established in June 1987, CFE Company is a joint venture between GE and Honeywell. CFE produces the CFE738 engine for the Dassault Falcon 2000. GE is responsible for the core of the engine and control system, and Honeywell manages the front fan, low-pressure turbine, and accessory gearbox.

CFM International. Formed in 1974, this is a consortium jointly owned by GE Aviation and Safran (Snecma) for production of the CFM56 and LEAP

engines. The company name and product line are a combination of the two parent companies' commercial engine designations: GE's CF6 and Safran's M56. In June 2021, General Electric and Safran signed an agreement that extended the 50-50 partnership to 2050.

Website: <https://www.cfmaeroengines.com/>

Clean Sky 2. In July 2016, GE announced that it had formed a cross-functional partnership with pan-European industrial and academic partners to develop technologies and crew interface standards for the next generation of passenger aircraft. The project, REACTOR, will develop and integrate five key technologies in order to address workload and stress within the cockpit. This project has received funding from the Clean Sky 2 Joint Undertaking under the European Union's Horizon 2020 research and innovation program via grant agreement No CS2-LPA-GAM-2014-2015-01. The partnership includes the following: BAE Systems, providing head-worn displays and automation; German Aerospace Center (DLR), providing airborne aircraft monitoring and ground support; and Coventry University, providing human factors design expertise. The project is led by Airbus Defence and Space.

Website: <https://www.cleansky.eu/>

COMAC. In November 2016, GE Aviation and COMAC signed an MoU on digital collaboration. Under the agreement, COMAC and GE plan to "jointly explore and collaborate on digital solutions and applications on customer and product support monitoring and diagnostics, Intelligent Aircraft, and Brilliant Manufacturing."

Evergreen Aviation Technologies. In March 2014, GE Aviation and Evergreen Aviation Technologies Corp (EGAT) formed a new joint venture company, GE Evergreen Engine Services, which specializes in the overhaul of the GENx engine. In November 2019, EGAT increased its holding in the entity from 19.9 percent to 49 percent. EGAT is an MRO joint venture formed between GE Aviation and Taiwanese carrier EVA Air in 1998.

FADEC Alliance. In November 2012, FADEC International (a venture jointly owned by BAE Systems and Safran) established a joint venture with GE to develop, produce, and support the full-authority digital engine control (FADEC) for aircraft engines and related specialized technologies. The joint venture, called FADEC Alliance, is the exclusive FADEC supplier for CFM International's next-generation engine, LEAP, and GE's Passport engine. As the sole provider, FADEC Alliance is responsible for the design, manufacture, and aftermarket support of the system. In July 2016, the

General Electric

FADEC Alliance system was selected for use on the GE9X that powers the Boeing 777X.

GE Hitachi. Formed in June 2007, GE Hitachi Nuclear Energy (GEH) is a provider of advanced reactors and nuclear services.

Website: <https://nuclear.gepower.com>

GE Honda Aero Engines. In October 2004, GE and Honda Motor Co Ltd formally established a new joint venture company, GE Honda Aero Engines LLC, which is pursuing the launch of Honda's HF118 turbofan engine in the light business jet market. The two companies had announced a strategic alliance in February 2004. The 50-50 joint company is owned by GE and Honda Aero Inc, a wholly owned Honda subsidiary established to manage Honda's aviation engine business. The company began operating in Cincinnati, Ohio, where GE Aviation is headquartered. The company works closely with GE and Honda Aero Inc in Reston, Virginia.

Website: <https://www.gehonda.com/>

GE-P&W Engine Alliance. The GE-P&W Engine Alliance is owned equally by Pratt & Whitney and General Electric. It was formed in 1996 specifically to produce the GP7000 for the 747 Growth models and other super-widebody aircraft. Under the terms of the alliance agreement, Pratt & Whitney is responsible for design and fabrication of the fan, low-pressure compressor, low-pressure turbine, and gear train, and GE Aviation is responsible for the engine core (high-pressure compressor, high-pressure turbine, and combustor). GE and P&W shared all development costs and revenues associated with the alliance on an equal basis.

Airbus announced in February 2019 that Emirates' decision to cancel most of its remaining orders for the A380 will lead to an A380 production shutdown in 2021. All A380s remaining in Airbus' backlog are to be powered by competing Rolls-Royce Trent engines. The Engine Alliance now focuses on support of GP7200 engines currently in service.

Website: <https://www.enginealliance.com/>

HAL. In February 2011, GE Aviation and Hindustan Aeronautics Ltd (HAL) signed a 30-year contract that includes a license to repair and overhaul various avionics, instruments, and hydraulic products for the Hawk Mk 132 aircraft, an advanced jet trainer operated by the Indian Air Force. HAL would perform MRO activities at its Bangalore and Korwa facilities in India. The schedule called for the Bangalore facility to be certified for repair and overhaul of hydraulics and instruments and the Korwa facility to be certified for

avionics. As part of the license agreement, GE would develop, supply, and commission the test equipment and supply technical data.

HNA Group. In November 2010, GE Aviation and HNA Group signed an MoU to form a joint venture to provide MRO services for GE's CF34-10A and CF34-10E engines. The MRO JV is located in Tianjin, China, and operated by HNA Group, with technical support and materials provided by GE Aviation.

Hybrid Project. In October 2019, GE Aviation teamed with Hybrid Project to provide a vertical takeoff and landing (VTOL) UAV designed for high-endurance commercial applications at scale. According to GE, the agreement "enables Hybrid Project's 35-pound hybrid-powered SuperVolo VTOL UAV with a full stack airborne computing hardware platform, flight and safety management, and integration from GE Aviation and Auterion."

Website: <https://www.hybridproject.com/>

IHI Corporation. In June 2021, GE and Japan's IHI Corporation (IHI) announced they had signed a Memorandum of Understanding (MOU) for collaborative development of gas turbine business roadmap (Ammonia Roadmap). The Ammonia Roadmap will support the use of ammonia as a carbon-free fuel to lower carbon emissions in both existing and new gas turbines. According to the MOU, both companies will conduct advanced research on the marketplace volume of ammonia as well as feasibility studies for ammonia as feedstock for gas turbine power plant installations in Japan and across Asia.

Lufthansa Technik. In June 2015, Lufthansa Technik AG and GE Aviation announced that they will create a new engine overhaul facility in Europe to service GENx-2B and GE9X engines. The venture, named XEOS, is 51 percent held by Lufthansa Technik and the remainder by GE Aviation. Ground was broken for a new facility in Środa Śląska, near Wrocław, Poland, in 2017. The center began operations in September 2019.

In June 2021, the partners froze operations at XEOS due to the pandemic-related reduction in air travel. Operations at the facility will be suspended by the first quarter of 2022. Reopening will depend on how quickly the market recovers.

Website: <http://www.xeos.aero>

Montana Precision Products. In January 2013, GE Aviation and SeaCast Inc established a 50-50 joint venture, Montana Precision Products, to produce jet engine components at SeaCast's facility in Butte, Montana. SeaCast, which is headquartered in

General Electric

Marysville, Washington, produces castings and specialty components. The joint venture in Butte produces tubes, ducts, and small structural castings for GE jet engines.

Website: <https://www.mtpp.com>

PG Technologies. Formed in October 2016, this is a 50-50 joint venture between Praxair Surface Technologies, a wholly owned subsidiary of Praxair, and GE Aviation. PG Technologies focuses on the development, support, and application of specialized coatings for GE Aviation's and CFM International's current and future engine models, including the GE9X and LEAP engines. In December 2017, PG Technologies opened a new, 300,000-square-foot advanced jet engine coatings facility in Ellisville, Mississippi. The facility is expected to employ at least 250 people.

SIA Engineering Company. In February 2020, GE Aviation and SIA Engineering Company Ltd (SIAEC) formed an engine overhaul joint venture in Singapore. The new GE Aviation, Overhaul Services, will provide MRO services for the GE90 and GE9X engines. GE holds a 51 percent stake in the venture, with SIAEC holding the remaining 49 percent. Plans for the venture were first announced in February 2018.

Sigma Labs. In May 2013, GE Aviation and Sigma Labs signed a joint technology development agreement to advance and implement in-process inspection technologies for additive-manufactured jet engine components. The mutually developed inspection technology will verify the quality and geometry of additive components during the additive build process, increasing additive production speeds up to 25 percent in support of GE Aviation's growing production rates.

Sumitomo. In January 2019, GE and Japan's Sumitomo Corp reached a public-private partnership milestone by signing a 25-year Power Purchase Agreement (PPA) with the Sharjah Electricity and Water Authority (SEWA) to develop, build, and operate a 1.8-gigawatt combined-cycle power plant in Hamriyah, UAE. The project will consist of three combined-cycle blocks, the first of which was expected to come on line in May 2021.

Taikoo Engine Services (Xiamen). GE Engine Services (Xiamen) Company Ltd was formed in February 1999 by its initial shareholders, GE Engine Services, Xiamen Aviation Industry Company Ltd (XAICO), and Taikoo (Xiamen) Aircraft Engineering Company Ltd (TAECO). It officially opened in June 2001. Its name was later changed to Taikoo Engine Services (Xiamen) as a result of the company's acquisition by Hong Kong Aircraft Engineering Co Ltd

and Taikoo (Xiamen) Aircraft Engineering Company. The company overhauls and repairs engines produced by GE Aviation and CFM International.

Website: <https://www.texl.com.cn/>

Taleris. Formed in 2013, Taleris is a joint venture company between GE Aviation and Accenture that provides airlines and cargo carriers with intelligent operations services focused on improving efficiency by leveraging aircraft performance data, prognostics, and recovery. Taleris serves more than 20 customers worldwide and is headquartered in Irving, Texas, with an affiliate site in Eastleigh, U.K.

Tata Group. In December 2017, GE and Tata Group signed an agreement to manufacture CFM International LEAP engine components in India. The two companies also announced their intention to jointly pursue military engine and aircraft system opportunities for the Indian market.

Team Invictus. In June 2020, Bell announced nine partners for Team Invictus. The companies are producing the Bell 360 Invictus prototype submission under the Future Attack Reconnaissance Aircraft effort. The FARA program aims to replace U.S. Army OH-58D scout helicopters currently in service. Members include Astronics Corporation, Collins Aerospace, GE Aviation, ITT-Enidine, L3 Harris Technologies, Parker Lord, Mecaer Aviation Group, Moog, and TRU Simulation + Training. GE Aviation is providing the 3,000-SHP T901 engine and the aircraft Health Awareness System for the Bell 360 Invictus competitive prototype.

In March 2020, the Army selected two contractors to develop competitive FARA prototypes: Bell and Sikorsky. Bell is offering the Bell 360 Invictus, which is based on some of the technologies developed for its 525 Relentless program. Sikorsky is offering its Raider X, a compound coaxial helicopter based on research and testing of its high-speed X2 technology demonstrator and S-97 Raider test aircraft. Flight tests are expected to begin in late 2022 and run through 2023. The engineering and manufacturing development phase will follow in FY24.

Website: <https://www.bellflight.com/products/bell-360>

Team Tempest. Led by BAE Systems and including Leonardo, MBDA, Rolls-Royce, and the RAF's Rapid Capabilities Office, this team is developing the Tempest concept for the U.K.'s Future Combat Air effort. The British MoD's aim is to develop a sophisticated future fighter to replace the RAF's Eurofighter fleet in the 2040s, at which time they will serve alongside the F-35 Lightning II combat aircraft. The Tempest is intended to

General Electric

enter service around 2035, replacing the Eurofighter Typhoon.

In July 2020, GE Aviation signed a collaboration agreement to work on the future combat air concepts and underpinning technologies across Team Tempest. GE Aviation in the U.K. will work on open architecture and infrastructure for electrical power and avionics systems.

Teradata. In October 2017, GE Aviation and Teradata formed a strategic partnership focused on providing data and analytics services for the world's airlines. This strategic relationship includes joint marketing, sales, services, and support across both companies. By combining operations, assets, and networks, this partnership makes the entire ecosystem easier to deploy, scale, and use, according to the companies.

Toshiba. In January 2013, GE and Toshiba signed an MoU to form a global strategic alliance under which the two companies would jointly develop select combined-cycle power generation projects around the world. In addition, under the MoU the two companies would explore the formation of a strategic joint venture for the development of next-generation combined-cycle power projects with higher levels of thermal efficiency. Toshiba and GE have cooperated on gas turbine combined-cycle power generation systems since 1982 and have existing agreements to pursue 50-Hz and 60-Hz projects together in Japan and in key regions in Asia.

TUSAS Engine Industries. In January 2010, GE Aviation renewed the TUSAS Engine Industries Inc (TEI) joint venture with Turkish Aerospace Industries Inc (TAI) for another 25 years. Under this agreement, TEI will continue to provide critical parts for commercial, military, and marine engines through 2035, with TAI retaining a majority ownership in the joint venture. GE Aviation's relationship with TEI began in 1985 with the establishment of a facility for production of F110 engines that power F-16 aircraft for the Turkish Air Force. TEI now produces more than 560 engine parts. Recently, TEI launched parts manufacturing efforts for the GENx, which powers the Boeing 747-8 and 787 Dreamliner. TEI was selected to provide parts for the since-dissolved GE Rolls-Royce Fighter Engine

Team's F136 engine for the Joint Strike Fighter program. TEI also produces blisk spools, a combination of blades and disks cast into a single forging for significant weight and durability advantages.

Website: <https://tei.com.tr/>

United Engine Corporation. In November 2017, GE Aviation Czech and Russia's United Engine Corporation (UEC) signed an MoU to explore turboprop engine business opportunities, as well as identify areas of synergy for developing a turboprop portfolio in the Russian market.

Varon Vehicles. In June 2021, GE Digital signed a Memorandum of Understanding to collaborate with Varon Vehicles Corporation on the development of a solution for airspace efficiency, safety, and predictive maintenance. This partnership builds on GE Digital's expertise in analytics software to produce a solution to facilitate better routing operations in Latin America, starting in Colombia.

Varon Vehicles is developing an urban air mobility transportation system with new technologies using currently untapped airspaces in a confined and safe way. It consists of a series of vertiports connected to each other via well-defined low altitude virtual lanes through which the company's air vehicles will fly without adding a burden on air traffic control or mixing with traditional aviation.

Woodward. In May 2015, GE Aviation and Woodward Inc announced a 50-50 joint venture to produce fuel systems for GE's large commercial aircraft engine lines. The joint venture, dubbed Convergence Fuel Systems, LLC, designs, develops, sources, supplies, and services the fuel system, including components from the fuel inlet up to the fuel nozzle for the GE90, GENx, GE9X, and all future large commercial engines developed by GE Aviation.

Woodward is the preferred supplier to the joint venture. Under the terms of the joint venture agreement, Woodward received \$250 million in cash, and GE reports that the parties would "participate jointly in the operating results of the respective programs."

Financial Results/Corporate Statistics

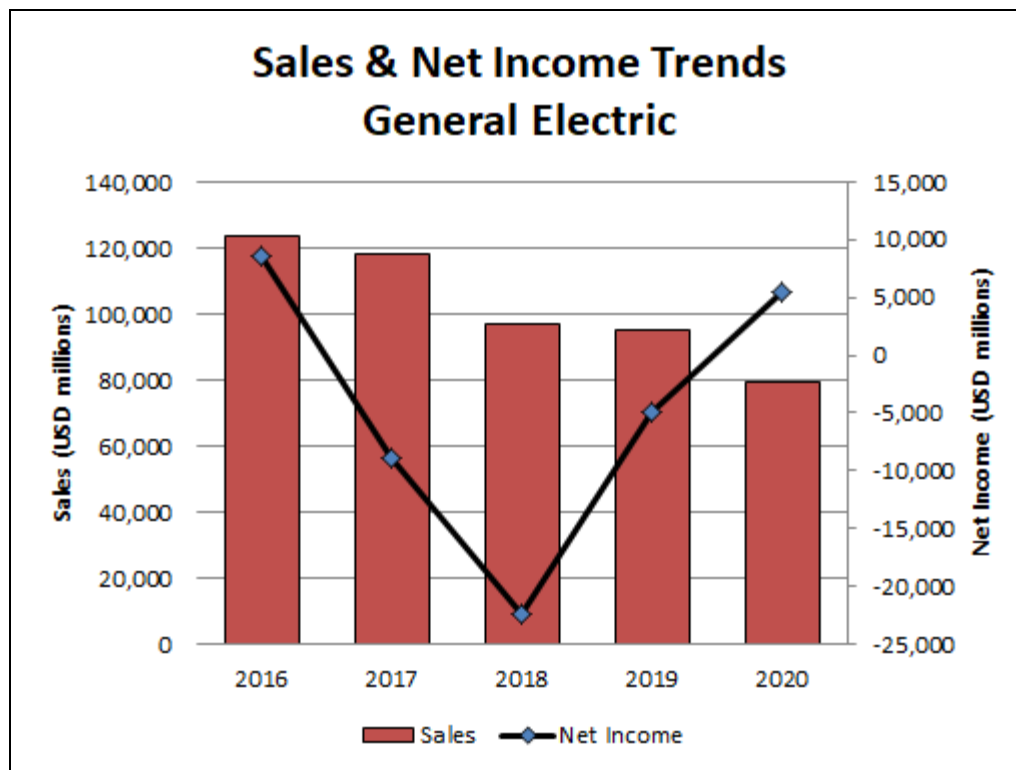
General Electric's revenues for 2020 were \$79.6 billion, down 16 percent from \$95.2 billion in 2019. The company posted net income of \$5.5 billion in 2020, compared to a loss of \$4.9 billion in 2019. The loss in 2019 is primarily attributed to a pretax charge of \$8.7 billion related to the deconsolidation of Baker Hughes (the Oil & Gas segment). The company's loss in 2017-2018 was attributed for the most part to charges associated with GE Capital. In addition, the company took a \$3.5 billion charge associated with the Tax Cuts and Jobs Act signed into law at the end of 2017. GE's latest financial figures, restated to the company's current presentation, are as follows.

General Electric

General Electric (NYSE: GE)

(USD millions)	2016	2017	2018	2019	2020
Net Sales	123,693	118,243	97,012	95,214	79,619
Net Income	8,540	-8,849	-22,443	-4,912	5,546
Percent Gov't Sales	3%	4%	5%	5%	7%
R&D Expenditures (GE)	4,737	4,738	4,134	3,118	2,565
Total Backlog	347,900	371,700	350,625	404,572	386,500
Backlog (Aviation)	154,500	170,400	223,527	273,245	260,412
Long-Term Debt*	105,497	110,555	90,824	70,848	73,642
Shareholder Equity*	75,828	56,030	30,981	28,316	35,552
Debt-to-Equity Ratio	1.38	1.97	2.93	2.50	2.07
Employees	295,000	313,000	283,000	205,000	174,000

* Source: Wall Street Journal Market Quotes



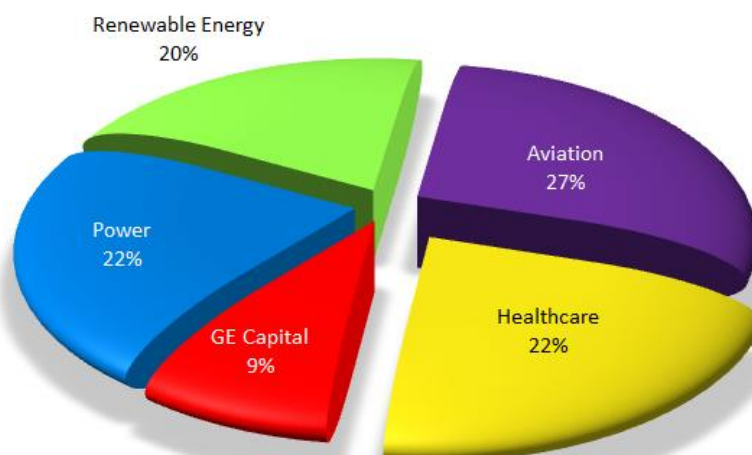
General Electric**Industry Segments**

The following is a breakdown of General Electric's sales and operating income by major market segment for the past five years. Figures have been restated to conform to GE's current presentation.

SALES	2016	2017	2018	2019	2020
(USD millions)					
Power	36,795	34,878	22,150	18,625	17,589
Renewable Energy	9,033	9,205	14,288	15,337	15,666
Aviation	26,261	27,013	30,566	32,875	22,042
Healthcare	18,261	19,017	19,784	19,942	18,009
GE Capital	10,905	9,070	9,551	8,741	7,245
Oil & Gas	12,898	17,180	-	-	-
Transportation	4,713	3,935	-	-	-
Lighting	4,823	1,941	-	-	-
Corporate & Eliminations	-26	-3,995	673	-305	-932
TOTAL	123,663	118,244	97,012	95,215	79,619

OPERATING INCOME	2016	2017	2018	2019	2020
(USD millions)					
Power	5,091	1,947	-808	386	274
Renewable Energy	576	583	292	-666	-715
Aviation	6,115	5,370	6,454	6,812	1,229
Healthcare	3,161	3,488	3,698	3,896	3,060
GE Capital	-1,251	-6,765	-489	-530	-1,710
Oil & Gas	1,392	158	-	-	-
Transportation	1,064	641	-	-	-
Lighting	199	27	-	-	-
Corporate & Eliminations	-4,226	-4,060	-2,837	-1,825	8,239
TOTAL	12,121	1,389	6,322	8,081	10,377

**2020 Sales by Segment
General Electric**



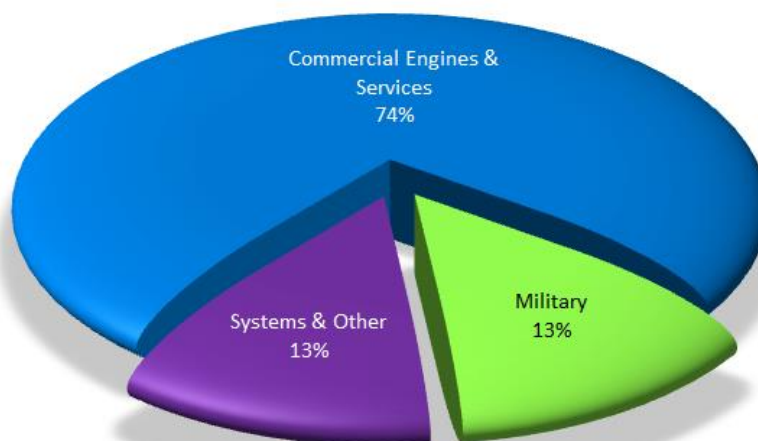
General Electric

Aviation Segment Details

Below is a breakdown of key financial data for GE Aviation.

AVIATION	2016	2017	2018	2019	2020
(USD millions)					
Net Sales	26,261	27,013	30,566	32,875	22,042
Equipment	11,400	10,215	11,499	12,804	8,582
Services	14,900	16,797	19,067	20,071	13,460
Commercial Engines & Services	19,400	19,709	22,724	24,217	13,017
Military	3,400	3,991	4,103	4,389	4,572
Systems & Other	3,400	3,314	3,740	4,269	4,453
Operating Income	6,115	6,642	6,454	6,812	1,229
R&D Expenditures (GE funded)	1,092	907	950	906	707
Backlog	154,600	200,200	223,527	273,200	260,412
Equipment	33,300	34,100	37,800	39,100	34,486
Services	121,300	166,100	185,700	234,100	225,927
Employees	45,000	44,500	48,000	52,000	40,000

**2019 Sales by Sub-Segment
GE Aviation**



Source: GE 10K Annual Report, Segment Operations/Aviation

General Electric

AVIATION UNIT ORDERS	2016	2017	2018	2019	2020
Commercial Engines	-	2,565	4,772	2,390	678
<i>GENx Engines</i>	-	-	407	164	-
<i>LEAP Engines</i>	-	1,418	3,637	1,568	351
Military Engines	-	522	751	801	1,023

AVIATION UNIT SALES	2016	2017	2018	2019	2020
Commercial Engines	2,747	2,630	2,825	2,863	1,487
<i>GENx Engines</i>	259	-	251	296	-
<i>LEAP Engines</i>	77	459	1,118	1,736	815
Military Engines	571	617	674	717	683
Spares Rate (\$ millions/day)	18.9	23.5	27.5	31.0	18.0

Note: GENx Engines and LEAP Engines are subsets of Commercial Engines. GENx data was not reported in 2020.

AVIATION GEOGRAPHIC SALES	2016	2017	2018	2019	2020
(USD millions)					
North America	10,600	10,800	12,529	13,384	11,239
Europe	4,500	6,200	7,027	7,452	4,288
Asia	5,100	5,600	5,787	6,641	3,920
Americas	1,600	1,200	1,459	1,593	882
Middle East & Africa	4,500	3,600	3,764	3,805	1,713
TOTAL	26,300	27,400	30,566	32,875	22,042

Major Competitors

GE Aviation's competitors in aircraft engines include Pratt & Whitney, Rolls-Royce, and the engine units of Safran. In avionics, electronics, and aviation-related systems, the company faces competition from Eaton, Collins Aerospace, Honeywell, Jeppesen (a Boeing subsidiary), Parker Hannifin, and various units of Safran.

Strategic Outlook

GE has struggled for years to pull itself out of a financial black hole caused by poor acquisitions and mismanagement. To its credit, the company appears to have succeeded in returning to profitability in 2020, despite the extremely difficult economic environment brought on by the COVID-19 pandemic.

Over the past few years, a new management team has been working to reshape the company's portfolio, primarily through divestitures, as it concentrates on its industrial manufacturing businesses.

Many of the company's refocusing efforts revolve around the power industry, which led GE to acquire Alstom's energy operations in 2015. The \$10 billion acquisition – the largest in the company's history – significantly expanded GE's power footprint in Europe. However, things went south from there.

Struggles at the power division have continued, and the company has split the operation in two. One unit, GE Gas Power, focuses on gas power generation; the other, GE Power, will focus on steam, grid solutions, nuclear energy, and power conversion. Speculation is that GE

may hold onto the gas operations and divest the other. However, as of mid-2021, no new information on such a move had been reported.

As part of its restructuring strategy, GE dramatically reshaped its operations through a series of divestitures since 2019. The first big move was the sale of its transportation unit to Wabtec in an \$11 billion deal. Up next was the divestiture of its BioPharma business to Danaher Corp for \$21 billion – the sale of which was completed in 2020. This was followed with the deconsolidation of the company's stake in Baker Hughes in a \$2.7 billion transaction.

More recently, in March 2021, the company announced it would sell its GECAS leasing division to AerCap in a deal valued at \$30 billion. The combined company will be an industry leader across all areas of aviation leasing, with over 2,000 owned and managed aircraft, over 900 owned and managed engines, over 300 owned helicopters, and approximately 300 customers around the world. Upon completion of the transaction, GE is expected to own approximately 46 percent of the combined company.

General Electric

Most critically, this latest deal further accelerates GE's transformation to focus on its industrial core-Power, Renewable Energy, Aviation, and Healthcare. The remaining financial-related operation, GE Capital, will be transferred to GE Corporate, further simplifying the company's financial structure and mitigating the risk of those markets.

Up until the COVID-19 pandemic, the one bright spot at the company throughout these travails was GE Aviation. The unit consistently did well thanks to strong demand for single-aisle jetliners up until early 2020. The desire for more efficient aircraft led to record orders for the Airbus A320neo and the Boeing 737 MAX. While the grounding of the 737 MAX was causing a slowdown, the pandemic caused production to plummet as new aircraft demand and MRO support dropped when air travel was restricted.

Powering both of these aircraft is the new LEAP engine, developed by the GE-Safran joint venture CFM International. The LEAP engine program suffered a setback in 2019 after the Boeing 737 MAX was grounded in the wake of two fatal crashes. Boeing cut production to only 42 aircraft per month before suspending it entirely in January 2020, temporarily reducing demand for the aircraft's LEAP-1B engines. The 737 MAX finally returned to service in December 2020. Meanwhile, in the face of the COVID-19 pandemic, Airbus has cut production of the A320neo family. The LEAP program accounts for roughly 40 percent of the engines GE Aviation produces, and a production recovery is not expected to begin in earnest until 2022 at the earliest.

As air travel returns, United Airlines showed its optimism in the recovery by announcing its largest-ever aircraft order: 270 narrowbody jetliners. The June 2021 order features Boeing's MAX10 and Airbus A321neo aircraft, both of which feature LEAP powerplants. The deal is good news for the engine program, as its backlog

suffered during the pandemic due to cancellations and is only now slowly recovering.

Other major engine programs for GE Aviation include the GENx and GE90 families.

The GENx powers Boeing 787 and 747 widebodies. Production of the 787 has fallen due to cratering demand in the widebody segment resulting from the impact of COVID-19 on international air travel. Meanwhile, production of the 747-8 is down to only six aircraft per year, with Boeing planning to terminate production in 2022. While the near term is bleak, demand for the 787 is expected to undergo a gradual recovery once the world enters a post-pandemic period.

The GE90 engine program focuses solely on the Boeing 777. Here production is shifting from the current 777 Classic models to the new 777X versions. Production for this model has again been delayed; Boeing said in January 2021 that it was making changes to the design to meet regulators' expectations. Following the 737 MAX debacle, the move is a prudent one. However, this will push delivery of the 777-9, the first 777X variant, to late 2023, the company said. GE90 manufacturing will ramp up to meet Boeing's production and should remain stable over the long term once the aircraft enters service.

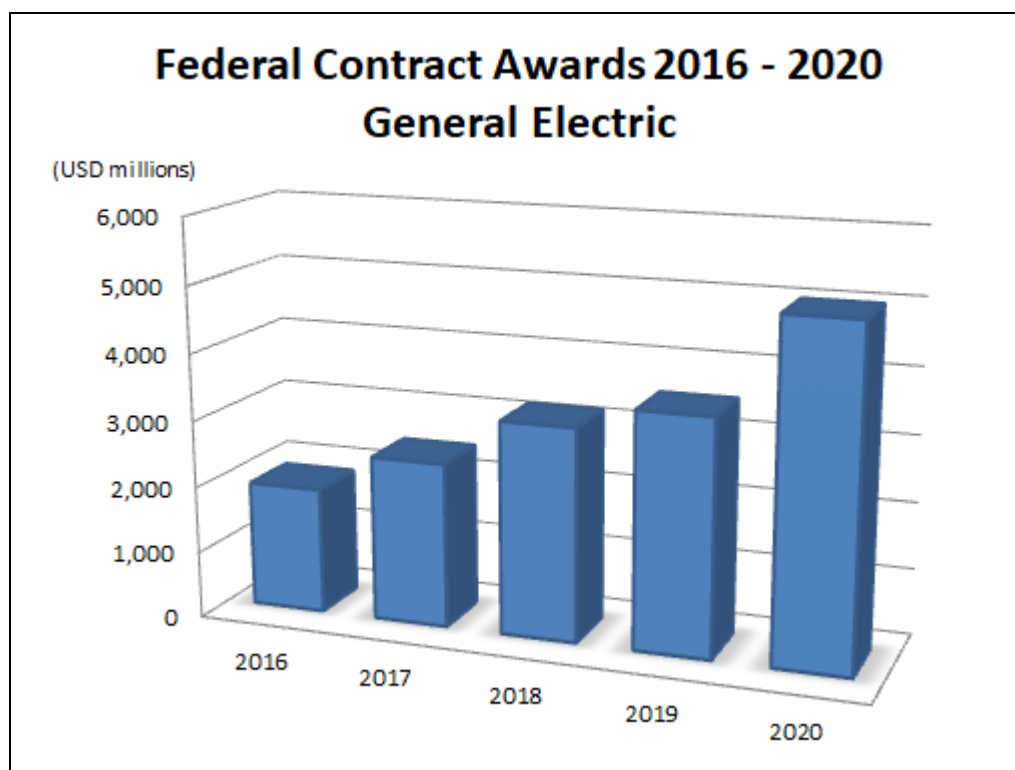
While the outlook for the aviation turboprop market was severely damaged in 2020 due to COVID-19's impact on airline travel, the fundamentals will remain the same as the market recovers. The trend to replace aging aircraft with more fuel-efficient models will continue.

According to Forecast International's Aviation Gas Turbine Aircraft Forecast, this is a temporary disruption, and demand is expected to recover slowly during 2021-2025. However, the recovery is likely to run unevenly across the civil market, with business jets seeing the fastest return to strength, followed by regional airliners, and then large airliners.

Prime Award Summary

The following chart and table show the dollar volume of federal prime contracts awarded to General Electric from 2016 through 2020 and the top 100 rank of the company in terms of federal contracts for each of the five years. For more information, refer to Appendix I, "Recipients of Federal Contract Awards."

General Electric	2016	2017	2018	2019	2020
(USD millions)					
Rank	31	24	21	18	16
Total Federal Awards	1,891	2,473	3,194	3,528	5,018

General Electric

Source: <https://sam.gov/reports/awards/static> Top 100 Contractors Report (login required)

Program Activity

The following entries outline some aerospace and government programs currently underway at General Electric. The briefs are intended to provide a general overview of programs that are of major importance to the company. For detailed information on or analysis of specific aerospace and defense programs or equipment, please refer to the applicable Forecast International service (for example, *Civil Aircraft*, *Military Aircraft*, *Military Vehicles*, *Warships*, *Missiles*, *Electronic Systems*, and *Aviation Gas Turbines*).

Aviation Gas Turbine Programs

Note: A continuously updated inventory of engines is maintained by Forecast International's *Military & Commercial Engines Inventory*.

(Aviation Turbofans)

CFE Company CFE738

This is a two-spool, axial-centrifugal, high-bypass-ratio turbofan engine that powers the Falcon 2000. CFE Company was formed by GE and the Garrett Engine Division of Allied Signal (now Honeywell) in 1987.

CFM International CFM56

This is a two-spool, axial-flow, high-bypass-ratio subsonic turbofan engine designed for commercial and military transport aircraft and specialized variants. The U.S. military designation for the engine is F108. It is currently in production for the Boeing 737NG and Airbus A320ceo narrowbody family aircraft. Production was expected to wind down through 2020 in concert with the forecast end of production for the A320 and 737 families. However, production of the CFM56-7B for the Boeing P-8A maritime patrol aircraft will continue into the 2020s.

CFM International LEAP

The LEAP is a new twin-spool, high-bypass-ratio advanced technology aviation turbofan. The LEAP is in development for the Airbus A320neo, Boeing 737 MAX, and COMAC C919 narrowbody airliners. This engine will incorporate revolutionary technologies developed as part of the LEAP56 technology acquisition program. This turbofan will reduce the engine contribution to aircraft fuel burn by up to 16 percent compared to the CFM56 Tech Insertion engines that

General Electric

currently power Airbus A320 and Boeing Next-Generation 737 aircraft. Additional fuel burn improvements will be achieved once this engine is paired with new aircraft technology. In June 2011, Virgin America launched CFM International's advanced LEAP engine with an order to power 30 new Airbus A320neo aircraft. According to Safran, the LEAP backlog stood at more than 9,200 engines at end of March 2021.

Engine Alliance GP7000

This is an advanced high-bypass-ratio turbofan engine designed for very large commercial transport aircraft. The GP7000 was developed jointly on a private basis by General Electric and United Technologies' Pratt & Whitney. The GP7000 family includes the GP7267 and GP7275 models for the Airbus four-engine A380 aircraft. In 2015, Emirates Airlines switched to the Rolls-Royce Trent with its last order for the A380, leaving only a few GP7200-powered A380s in the backlog. Production is believed to have been completed in 2018. With Engine Alliance's engine orders fulfilled for the Airbus A380, it will redirect resources to aftermarket support.

GE Honda HF120

The GE Honda Aero Engines HF120 is designed for light/very light business aircraft and personal jets. The engine is produced by GE Honda Aero Engines LLC (Cincinnati, Ohio), a 50-50 joint venture.

General Electric CF34

This is a two-shaft, high-bypass-ratio turbofan engine designed for commercial/business fixed-wing aircraft and their military variants. The CF34 is the commercial version of the GE TF34, which is no longer in production. The CF34 powers 70- to 90-seat regional jets, such as the Challenger 650 business jet. There is one potential future bright spot for the program: the U.S. Air Force is considering re-engining the B-52H bomber with engines in the CF34's class (see **Teaming/Competition/Joint Ventures** for more).

General Electric CF6-80C2/E1

This is a two-spool, axial-flow, high-bypass-ratio turbofan engine designed for heavy commercial and military transport aircraft. The military designation for the CF6-80C2 is F103-GE-102. This engine is in production for the Boeing 767-300F and Airbus A330. The CF6-80 also powers a few military transport aircraft, including Lockheed Martin's C-5M and Kawasaki's C-2. It is also available on Airbus Military's A330 MRTT refueler. Production is forecast to fall as the airliner market moves to newer or re-engined widebody designs.

General Electric F110

The F110 is a two-shaft, axial-flow, augmented military turbofan engine. The F110's current in-production applications include the Boeing F-15E family and the Lockheed Martin F-16V. In October 2018, GE's engine was selected over Rolls-Royce's to power the prototype and an initial batch of Turkey's first indigenous fighter, the TF-X. After the first batch, Turkey plans to switch to a motor developed by TRMotor, a local engine consortium.

General Electric F404/F414

This is an advanced technology, two-shaft, axial-flow, augmented and non-augmented military turbofan engine designed for high-performance single- and twin-engine fighter/attack aircraft. Production of the F/A-18E/F Super Hornet continues for the U.S. Navy, boosting demand for the F414. The less powerful F404 powers KAI's T-50/FA-50, HAL's Tejas Light Combat Aircraft (LCA), and the U.S. Air Force's new Boeing/Saab T-7A jet trainer.

General Electric GE90

The GE90 is an advanced, new-design, high-bypass-ratio, high-power-output propulsion system designed for very large commercial and military transport aircraft. Variants offering from 85,000 lbf to 94,000 lbf are in production for the Boeing 777. Boeing's latest variant, the 777X, features new engines, a new composite wing, and new interiors. Boeing's Request for Proposals put out to engine manufacturers was for a 100,000-lbf engine to power the new jet. GE's program name for the engine is GE9X. First flight of the 777X powered by two GE9X engines occurred in January 2020. The engine was certified by the U.S. Federal Aviation Administration (FAA) in September 2020.

General Electric GENx

This is a two-spool, high-bypass-ratio, advanced technology turbofan engine. Current applications for General Electric's GENx include Boeing's 787 widebody airliner and the four-engine 747-8. At the time of their development, the GENx family of engines represented a major step forward in gas turbine engine technology. Production of the 787 fell due to cratering demand in the widebody segment resulting from the impact of COVID-19 on international air travel.

General Electric Passport

The 16,500-lbf Passport engine is designed as an integrated propulsion system (IPS) for ultra-long-range business aircraft. The Passport offers low cabin noise, emissions, and fuel consumption to business aviation operators. The engine is the result of a joint venture between GE, IHI of Japan, and TechSpace Aero of

General Electric

Belgium. The Passport engine powers the Bombardier Global 7500 and 8000. Engine certification was issued in April 2016.

(Aviation Turboprops)

General Electric Catalyst

In December 2017, the Advanced Turboprop (ATP) completed its first engine test run at GE Aviation's facility in Prague, Czech Republic. The engine, which Textron Aviation has selected to power its new Cessna Denali, was first unveiled in November 2015. The new 1,240 shp-rated ATP is aimed at BGA aircraft in the 1,000-1,600-shp range. The engine features a 16:1 overall pressure ratio, enabling it to achieve up to a 20 percent lower fuel burn and 10 percent higher cruise power when compared to rival offerings. The Catalyst engine is designed to compete against Pratt & Whitney Canada's PT6A. In March 2018, the ATP was officially named the GE Catalyst engine.

General Electric CT7

This is a two-shaft, axial-centrifugal-flow, free-turbine turboprop engine designed for regional airline, utility, and executive transport aircraft. The CT7-9 turboprop is now produced for a single application: Airbus Military's CN-235 transport. This engine remains in light production.

(Aviation Turboshfts)

General Electric GE38-1B (T408)

In January 2007, Sikorsky selected GE Aviation's GE38-1B turboshaft engine to power the U.S. Marine Corps' CH-53K heavy-lift helicopter. The GE38-1B engine will adapt an architecture similar to that of the popular T700 engine, with proven technologies derived from GE's commercial and military engine product lines. Capable of producing more than 7,400 shp, the GE38-1B will offer significant advances in large turboshaft engine performance, fuel efficiency, and life-cycle costs. In October 2015, the GE38-1B – designated the T408 by the U.S. government – successfully powered the first flight of the U.S. Marine Corps' CH-53K heavy-lift helicopter.

Production of the first 22 T408 engines for the CH-53K program began in February 2018. GE delivered the first production engine in October 2019. The U.S. Navy program of record is for 200 aircraft.

General Electric T64

This is a two-spool, axial-flow, free-turbine turboshaft engine designed for heavy military helicopters and their civil variants. The T64 is in production in the U.S. for the CH-53E heavy helicopter. A steady T64 overhaul / spare parts market continues.

General Electric T700/CT7

This is a twin-shaft, axial-centrifugal-flow, free-turbine turboshaft engine designed for medium- to heavy-weight civil and military helicopters. Primary military applications include the Sikorsky H-60 helicopter family, Bell AH-1Z/UH-1Y, and Boeing AH-64 attack helicopter. Civil applications include the Leonardo AW189, Bell 525, and Sikorsky S-92. Production of the aircraft family will slowly decline over the long term due to reduced demand from the U.S. military.

Industrial & Marine Turbine Programs

In November 2015, GE completed its Alstom acquisition and announced the combination of GE Power & Water and Alstom Power into a new unit, GE Power.

GE GT13

The GT13 is a single-shaft, heavy-duty, axial-flow industrial gas turbine machine used for utility and industrial power generation, including open-cycle, cogeneration, combined-cycle, and combined-cycle cogeneration installations. According to recently released company documentation, only the GT13 gas turbine is being marketed by General Electric. The other models in the range acquired as part of the acquisition of Alstom have been quietly dropped. The only substantive activity in these programs will be modernization/refurbishment programs.

GE LM1600

This is a simple-cycle, three-shaft, axial-flow aviation-derivative industrial and marine gas turbine. Applications include mechanical drives, including compressor drives for pipeline, platform, and process operations; electrical generator drive and cogeneration duty; and marine propulsion. Production of the LM1600 is complete.

GE LM2500

The LM2500 is a twin-spool, axial-flow, aeroderivative industrial gas generator and marine gas turbine designed for marine propulsion, industrial and electric utility power generation (including cogeneration duty), and various mechanical drives. This gas turbine engine boasts up to a 99 percent reliability rate. Modernizing older power generation facilities is a growing market for the LM2500. The GE LM2500 Marine variant was selected for the U.S. Navy FFG(X) frigate. This engine remains in steady production.

GE LM6000

The LM6000 is a simple-cycle, high-efficiency, aeroderivative two-shaft industrial gas turbine capable of driving equipment from either front- or rear-output shafts. Applications include industrial and utility power generation in cogeneration and combined-cycle

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configurations, mechanical drives, and marine propulsion. The machines are used as replacement units for older gas and steam turbines. Production of the LM6000 machine began in 1992 and remains steady.

GE LM9000

GE announced in January 2017 that it had developed a new aeroderivative gas turbine with a 65-MW output. This turbine, the LM9000, is a two-shaft, high-efficiency, aeroderivative industrial gas turbine machine. The LM9000 is derived from the GE90. The target market for the LM9000 is the LNG (liquefied natural gas) market.

GE LMS100

The LMS100 is GE Power's 50-Hz/60-Hz intercooled 100-MW aeroderivative gas turbine for electrical generation duty. It is used in both combined-cycle and cogeneration installations. The machine will likely be made available for mechanical load drive applications in the future.

The LMS100 has established a sound record as a highly reliable peaking plant, capable of coming on line within less than 10 minutes to accommodate surges in demand or unexpected outages. These traits have strengthened the appeal of the LMS100 in an environment where renewable energy resources are being heavily supported.

GE Model 6000

The Model 6000 is a single-shaft, simple-cycle, axial-flow, heavy-duty industrial design gas turbine. The Model 6000 is also referred to as the Frame 6; its GE designation is MS6001. Applications include utility and industrial power generation; the unit can be used for 50-Hz or 60-Hz power generation.

GE Model 7000

This is a single-shaft, simple-cycle, axial-flow, heavy-duty industrial design gas turbine machine (the Model 7000 is also referred to as the Frame 7; its GE designation is MS7001). The Model 7000 is used for utility and industrial power generation.

GE Model 9000

The Model 9000 is a simple- or combined-cycle, single-shaft, heavy-duty industrial gas turbine for 50-Hz operation (the Model 9000 is also referred to as the Model 9001 and Frame 9; its GE designation is MS9001). It is designed primarily for utility power

generation; other applications include use in combined-cycle and cogeneration plants. Various submodels of the Frame 9 are in production.

General Electric GE10

The GE10 is a single-shaft and two-shaft, axial-flow, high-efficiency industrial gas turbine designed for mechanical load drives and electrical generation, including cogeneration plants.

General Electric Steam Turbines

GE is a full-line supplier of steam turbines for use in nuclear or fossil utility power, industrial process, and power generation applications. It manufactures reheat, non-reheat, condensing, back-pressure, and single- and multiple-auto-extraction machines for 50/60-Hz duty.

Major R&D Programs

Adaptive Engine Transition Program (AETP)

AETP is a project of the Air Force Research Laboratory (AFRL) under the Adaptive Versatile Engine Technology (ADVENT) program that began in 2007 and the Adaptive Engine Technology Development (AETD) program that began in 2012.

In September 2012, the U.S. Air Force began negotiations with GE Aviation to mature a suite of technologies to include variable-cycle technology for the Adaptive Engine Technology Development (AETD) program. This program will enable GE to address the USAF's propulsion needs for improved fuel burn to provide combat aircraft in the beyond-2020 timeframe with significantly enhanced range, performance, and thermal management capabilities. The USAF envisions the new engines powering a sixth-generation fighter and potentially an upgraded F-35 Joint Strike Fighter.

In mid-2016, the Department of Defense awarded two contracts under the AETP. GE Aviation (XA100 demonstrator) was awarded \$919.5 million and Pratt & Whitney (XA101 demonstrator) \$873 million to design, build, and test multiple complete, flight-weight centerline, 45,000-lb-st turbofan adaptive engines. According to GE, the adaptive cycle, three-stream engine extends aircraft operating range by more than 30 percent, improves fuel consumption by 25 percent, and increases thrust by more than 10 percent. The AETP program is scheduled to run through 2021, with extensive component, rig, and engine testing.

General Electric**U.S. Contract Awards**

The following is a listing of major contracts recently awarded to General Electric and GE Aviation from the U.S. government (contracts as of press date). Note that the Description section is excerpted directly from U.S. DoD listings. For full details on contracts and their associated modifications, visit <https://www.defense.gov/Newsroom/Contracts/>

Date	Award (USD millions)	Contract #	Description
2017			
1/5/17	14.4	SPM2D1-09-D-8300	EIGHTH ONE-YEAR OPTION PERIOD OF A ONE-YEAR BASE CONTRACT WITH NINE ONE-YEAR OPTION PERIODS FOR PATIENT MONITORING SYSTEMS, SUBSYSTEMS, ACCESSORIES, CONSUMABLES & TRAINING.
1/17/17	98.1	SPE4AX-16-D-9408	REMANUFACTURE F110 ENGINES.
3/1/17	19.8	GSPM2D1-09-D-8348	EIGHTH ONE-YEAR OPTION PERIOD OF A ONE-YEAR BASE CONTRACT WITH NINE ONE-YEAR OPTION PERIODS FOR PATIENT MONITORING SYSTEMS, SUBSYSTEMS, ACCESSORIES, CONSUMABLES & TRAINING.
3/3/17	9.2	N00421-14-G-0001	F414 ENGINE COMPONENT IMPROVEMENT PROGRAM, INCLUDING ENGINEERING & ENGINE SYSTEM IMPROVEMENT SUPPORT FOR THE NAVY.
3/29/17	114.9	N00019-17-C-0047	PROCUREMENT OF 28 LOT 20 & 21 FULL-RATE PRODUCTION F414-GE-400 ENGINES & ASSOCIATED DEVICES FOR THE F/A-18E/F & THE EA-18G AIRCRAFT.
4/28/17	670.7	N00383-17-D-BG01	REPAIR, REPLACEMENT & PROGRAM SUPPORT OF 17 F414 ENGINE COMPONENTS OF F/A-18E and F AND EA-18G AIRCRAFT.
5/5/17	8.6	FA8122-14-G-0001	T-64 ENGINE COMPRESSOR CASINGS.
5/10/17	14.0	FA8650-16-D-2615	NEXT-GENERATION FIGHTER POWER & THERMAL MANAGEMENT SYSTEM DETAILED DESIGN & HYBRID-CYCLE POWER & THERMAL MANAGEMENT SYSTEM FOR UNMANNED AIRCRAFT SYSTEM.
6/23/17	21.9	N00024-09-C-4203	DDG-1000 CLASS HIGH-VOLTAGE POWER SYSTEM.
7/19/17	409.0	FA8650-17-D-2403	NEXT-GENERATION THERMAL, POWER, AND CONTROLS.
7/31/17	49.6	W58RGZ-17-D-0083	OVERHAUL & RECAPITALIZATION OF THE UH-60 COLD SECTION MODULE.
8/4/17	13.5	FA8122-14-G-0001	369 A51 AIRCRAFT COMPONENT POWERPLANT CHANGE MODIFICATION KITS IN SUPPORT OF THE F/A-18C/D HORNET F404 ENGINE COMPONENT IMPROVEMENT PROGRAM.
8/18/17	11.7	SPE4A1-14-G-000	F/A-18 ALTERNATING GENERATORS.
9/5/17	91.6	N00019-17-C-0047	24 LOT 21A FULL-RATE PRODUCTION F414-GE-400 ENGINES FOR F/A-18E/F AIRCRAFT.
9/20/17	39.5	FA8122-17-F-0072	19 SLEP ENGINE KITS FOR F110-100.
9/26/17	7.4	SPRTA1-17-F-0393	AIRCRAFT COMBUSTION LINERS.
9/26/17	7.1	SPRTA1-17-F-0636	AIRCRAFT FAN FRAMES.
9/26/17	27.1	SPE4A1-17-G-0008	FOUR SETS OF TWIN SHANK TURBINE LM2500 HOT SECTION MATERIALS; FOUR SINGLE SHANK TURBINE LM2500 HOT SECTION MODIFICATION KITS, & 20 INTEGRATED ELECTRONIC CONTROLLER MODIFICATION KITS.

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Date	Award (USD millions)	Contract #	Description
9/29/17	80.5	N00383-17-D-N201	ONE-YEAR UNDEFINITIZED CONTRACT FOR THE REPAIR OR REPLACEMENT OF 17 HEAD-OF-FAMILY ITEMS & 15 FAMILY MEMBERS USED ON THE T64 ENGINE ALONG WITH THE OPERATION OF A T64 LOGISTICS MANAGEMENT SYSTEM FOR STORAGE & PACKAGING, THE MEETING OF TIMELY DELIVERY METRICS/RETURN AROUND TIME, AND CONFIGURATION MANAGEMENT.
11/3/17	84.1	W58RGZ-18-D-0002	OVERHAUL & RECAPITALIZATION OF T700 SERIES ENGINES IN SUPPORT OF BLACK HAWK & APACHE HELICOPTERS.
11/9/17	643.0	FA8626-18-D-0029	PROVIDE F110-GE-129 ENGINES, SPARE ENGINES, MODERNIZED ENGINE MONITORING SYSTEM COMPUTERS, OVER-AND-ABOVE REPAIR FOR GOVERNMENT-FURNISHED PROPERTY, AND TECHNICAL DATA REPORTS.
11/16/17	143.5	N00019-18-C-1007	22 LRIP LOTS 1 & 2 T408-GE-400 TURBOSHAFT ENGINES FOR THE CH-53K HELICOPTER, INCLUDING ASSOCIATED ENGINE & PROGRAM SUPPORT, LOGISTICS SUPPORT, PECULIAR SUPPORT EQUIPMENT, AND SPARES.
12/14/17	12.9	N00421-14-G-0001	F414 ENGINE COMPONENT IMPROVEMENT PROGRAM TO INCLUDE ENGINEERING & ENGINE SYSTEM IMPROVEMENT SUPPORT FOR THE NAVY & GOVERNMENT OF AUSTRALIA.
12/15/17	9.7	N00019-18-C-0004	MODIFY G3 GENERATOR CONVERTER UNITS TO THE G4 VARIANT & G4 GENERATOR CONVERTER UNITS FOR THE F/A-18 AIRCRAFT IN SUPPORT OF THE GOVERNMENT OF AUSTRALIA.
12/20/17	21.4	N00019-13-C-0132	PROGRAM & LOGISTICAL SUPPORT TO DEVELOP DAMAGE LIMITS & TOLERANCES OF ENGINE COMPONENTS AS WELL AS THE COMPLETION OF MAINTENANCE TASK ANALYSIS & MAINTENANCE PLANNING TO ESTABLISH ORGANIC DEPOT-LEVEL REPAIR FOR THE T408-GE-400 ENGINE INSTALLED ON THE CH-53K HELICOPTER.
12/20/17	14.4	SPM2D1-09-D-8300	NINTH ONE-YEAR OPTION PERIOD OF A ONE-YEAR BASE CONTRACT WITH NINE ONE-YEAR OPTION PERIODS FOR PATIENT MONITORING SYSTEMS, SUBSYSTEMS, ACCESSORIES, CONSUMABLES, & TRAINING.
12/21/17	53.8	N00019-18-C-0004	PROCURE 370 G3 GENERATOR CONVERTER UNITS TO MODIFY THE G3 GCU TO THE G4 VARIANT & 37 G4 GCU'S IN SUPPORT OF U.S. NAVY F/A-18 AIRCRAFT.
12/28/17	380.0	W58RGZ-18-D-0023	TECHNICAL, ENGINEERING, AND LOGISTICAL SERVICES & SUPPLIES TO SUPPORT CORPUS CHRISTI ARMY DEPOT OVERHAUL, RECAPITALIZATION, CONVERSION, AND REPAIR ACTIVITIES FOR THE T700 TURBINE ENGINE, MODULES, AND IDENTIFIED COMPONENTS.
2018			
1/5/18	14.8	SPE4A1-17-G-0008	LM2500+ POWER TURBINE ASSEMBLY, AN LM2500+ GAS GENERATOR ASSEMBLY & LM2500 INTEGRATED ELECTRONIC CONTROL KITS.
1/9/18	74.1	N00383-18-D-N901	PERFORMANCE-BASED LOGISTICS CONTRACT FOR REPAIR, REPLACEMENT & PROGRAM SUPPORT OF 773 F414 ENGINE COMPONENTS OF F/A-18E AND F AND EA-18G AIRCRAFT.
1/25/18	85.0	PE4AX-18-D-9419	F118-101 AIRCRAFT ENGINE SUPPORT.

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Date	Award (USD millions)	Contract #	Description
1/26/18	7.9	FA8122-14-G-0001	T-64 ENGINE FRONT FRAMES.
1/26/18	14.9	FA8122-14-G-0001	T-64 ENGINE COMBUSTION LINERS.
2/21/18	7.2	N00019-17-C-0047	PROCURE 24 ENGINE DEVICES FOR THE LOT 21 F414-GE-400 ENGINE BUY FOR LOT 41 F/A-18 AIRCRAFT PRODUCTION.
4/3/18	91.6	N00019-17-C-0047	EXERCISE AN OPTION TO PROCURE 24 LOT 22 FULL-RATE PRODUCTION F414-GE-400 ENGINES IN SUPPORT OF F/A-18 AIRCRAFT PRODUCTION & DELIVERY.
5/30/18	29.5	FA8504-18-D-0006	R391 PROPELLERS & SPARES CURRENTLY USED ON THE C-130J AIRCRAFT, IN CONJUNCTION WITH THE COMMERCIAL ROLLS-ROYCE AE 2100D3 ENGINE.
6/29/18	37.0	N00383-18-D-N901	PERFORMANCE-BASED LOGISTICS CONTRACT FOR THE REPAIR, REPLACEMENT, AND PROGRAM SUPPORT OF 773 F414 ENGINE (F/A-18E AND F, AND EA-18G AIRCRAFT).
6/29/18	437.0	FA8626-16-2-138	DESIGN, FABRICATE, INTEGRATE, AND TEST COMPLETE FLIGHT-WEIGHT ADAPTIVE ENGINES.
7/12/18	18.0	N00019-17-D-0089	SPARE PARTS SUPPORT FOR THE KC-130J R391 PROPELLER SYSTEM.
7/30/18	10.6	N00019-18-C-1061	LONG-LEAD MATERIALS FOR THE FULL-RATE PRODUCTION OF LOT 23 F414-GE-400 ENGINES IN SUPPORT OF F/A-18E/F & EA-18G AIRCRAFT.
7/31/18	630.5	N00383-18-D-P601	PERFORMANCE-BASED LOGISTICS CONTRACT FOR REPAIR, REPLACEMENT & PROGRAM SUPPORT OF 773 F414 ENGINE COMPONENTS USED ON F/A-18E/F & EA-18G AIRCRAFT.
8/7/18	15.0	SPRDL1-18-D-0119	VANEAXIAL FANS.
9/1/18	19.7	N00024-18-G-4113	REPLACE HOT-SECTION MATERIALS OF LM2500 MARINE GAS TURBINE ENGINES.
9/17/18	17.8	SPE4A7-18-F-082Q	UH-60 PIPE EXHAUSTS.
9/25/18	52.5	SPE4A1-14-G-0009	F/A-18 AIRCRAFT GENERATORS.
9/25/18	58.6	FA8122-14-G-0001	SUSTAINMENT OF THE ROYAL SAUDI AIR FORCE F-15SA. THIS CONTRACT PROVIDES F110-129 ENGINE CONSUMABLES, SPARES, WAR-READINESS SPARE KITS, AND SUPPORT EQUIPMENT.
9/25/18	12.0	FA8122-14-G-0001	AIRCRAFT ENGINE COMBUSTION CHAMBERS.
9/26/18	19.6	FA8504-18-C-0008	C-130J R391 PROPELLER DEPOT ACTIVATION REQUIREMENT.
9/26/18	12.1	FA8122-14-G-0001	1,815 MAIN LONG SPRAYBARS & 265 KITS THAT CONSIST OF 12 MAIN SHORT SPRAYBARS, ONE IGNITION SPRAYBAR, AND ONE BOLT IN SUPPORT OF F/A-18E/F/G AIRCRAFT.
9/28/18	84.1	N00383-18-D-PT01	LOGISTICS & REPAIR OF FOUR T700 ENGINE COMPONENTS IN SUPPORT OF THE NAVY'S H-60 SEAHAWK & THE MARINE CORPS' AH-1 COBRA HELICOPTERS.
10/10/18	250.0	FA8650-19-D-2057	ADVANCED TURBINE TECHNOLOGIES FOR AFFORDABLE MISSION-CAPABILITY (PHASE I. THE MISSION OF THE ATTAM PHASE I PROGRAM IS TO DEVELOP, DEMONSTRATE, AND TRANSITION ADVANCED TURBINE PROPULSION, POWER & THERMAL TECHNOLOGIES THAT IMPROVE MISSION CAPABILITY.
10/15/18	7.0	N00019-17-C-0047	PROCUREMENT OF 24 F414-GE-400 ENGINE DEVICES FOR LOT 42 F/A-18 AIRCRAFT.
10/30/18	273.5	FA8122-19-D-0001	SLEP CONVERSION KITS TO UPGRADE EGYPTIAN AIR FORCE F-16, F110-GE-100 ENGINES.

General Electric

Date	Award (USD millions)	Contract #	Description
11/29/18	8.4	FA8122-14-G-0001	SUPPLIES & SERVICES REQUIRED TO COMPLETE ECP G414-A-18, "F414-GE-400 SPRAYBAR B-NUT REWORK" FOR F/A-18E/F & EA-18G AIRCRAFT, INCLUDING MAIN SHORT & IGNITION SPRAYBARS & BOLTS.
12/4/18	11.1	FA8604-19-D-8004	ENGINEERING & TECHNICAL SERVICES IN SUPPORT OF THE FOLLOWING ENGINES: F-16 F110-GE-100, A-10 TF-34, KC-135 F-108, B-1 F118, E-6B F108, T700-401C, J85-21B, F110, F16C/D, F/A-18 & F110-GE-129.
12/12/18	157.7	SPE4AX-19-D-9400	HOLISTIC ENGINE SUPPORT OF THE T64 AIRCRAFT ENGINE.
12/13/18	11.6	N00421-19-G-0001	ENGINEERING & ENGINE SYSTEM IMPROVEMENT IN SUPPORT OF THE F414 ENGINE COMPONENT IMPROVEMENT PROGRAM.
12/18/18	290.8	N00019-17-C-0047	EIGHT F414-GE-400 ENGINES FOR THE NAVY. IN ADDITION, THIS MODIFICATION PROVIDES FOR THE PROCUREMENT OF 56 F414-GE-400-1A ENGINES, FOUR F414-GE-400 SPARE ENGINES, TWO SPARE ENGINE CONTAINERS & 12 SPARE ENGINE MODULES FOR THE GOVERNMENT OF KUWAIT.
12/28/18	70.7	N00019-17-C-0047	PROCUREMENT OF 16 F414-GE-400 ENGINES FOR U.S. NAVY F/A-18 AIRCRAFT.
2019			
2/11/19	517.4	W58RGZ-19-C-0003	ENGINEERING & MANUFACTURING DEVELOPMENT PHASE OF THE IMPROVED TURBINE ENGINE PROGRAM.
2/14/19	68.2	N00383-19-D-UJ01	LONG-TERM CONTRACT FOR REPAIR OF 3 ITEMS THAT ARE PART OF THE G2/G3 GENERATOR CONVERTER UNITS USED ON THE F/A-18 AIRCRAFT.
2/27/19	366.2	N00383-19-D-UK01	LONG-TERM CONTRACT FOR THE REPAIR OF 18 DIFFERENT HEAD-OF-FAMILY PART NUMBERS IN SUPPO OF THE T-64 ENGINE.
3/29/19	77.6	N00383-19-D-US01	REPAIR, REPLACEMENT, AND PROGRAM SUPPORT OF 35 FAMILY GROUPS OF F404 ENGINE COMPONENTS USED ON THE F/A-18 A-D AIRCRAFT
4/24/19	8.7	N00024-18-G-4113	FOR LM2500 INTEGRATED ELECTRONIC CONTROLLER MODIFICATION KITS.
5/16/19	26.4	N00024-18-G-4113	LM2500 SINGLE SHANK HOT SECTION KITS & PAIRED BLADE COMPONENTS
5/30/19	79.7	SPE4AX-19-D-9439	F110-GE-100 AIRCRAFT ENGINE SUPPORT.
6/11/19	9.2	N00024-18-G-4113	LM2500 SINGLE SHANK HOT SECTION KITS.
6/20/19	24.9	N00019-17-C-0047	PROCURE 72 F/A-18 F-414-GE-400 INSTALL ENGINES DEVICES FOR THE NAVY (24); & THE GOVERNMENT OF KUWAIT (48).
8/27/19	42.8	FA8122-19-G-0001	DELIVERY ORDER AGAINST A FIVE-YEAR BOA FOR COMBUSTION CHAMBERS.
8/29/19	143.7	N00019-18-C-1007	THIS MODIFICATION IS FOR 24 LOW RATE INITIAL PRODUCTION LOT 3 T408-GE-400 TURBOSHAFT ENGINES & THREE LOT 2 T408-GE-400 ENGINES FOR THE CH-53K HELICOPTER.
9/3/19	8.8	FA8122-19-G-0001	DELIVERY ORDER AGAINST A FIVE-YEAR BOA FOR COMPRESSOR CASINGS.
9/5/19	56.6	N00019-18-C-0004	THIS MODIFICATION PROCURES 320 GENERATOR CONVERSION UNIT (GCU) G3 TO G4 CONVERSION RETROFIT KITS; 547 GCU G4 UNITS; WIRING HARNESES; & ASSOCIATED TECHNICAL, FINANCIAL & ADMINISTRATIVE DATA IN SUPPORT OF F/A-18E/F & E/A-18G AIRCRAFT.

General Electric

Date	Award (USD millions)	Contract #	Description
9/6/19	14.9	FA8122-19-G-0001	DELIVERY ORDER AGAINST A FIVE YEAR BOA FOR ENGINE EXHAUST FRAMES.
9/9/19	19.4	FA8124-19-D-0005	F138 SUSTAINING ENGINEERING, PROGRAM MANAGEMENT, AND FIELD SERVICE REPRESENTATIVE SUPPORT.
9/10/19	20.9	FA8504-19-F-0028	THIS DELIVERY ORDER PROVIDES FOR OPTION 1 QUANTITIES OF R391 PROPELLERS & SPARES TO SUPPORT THE C-130J AIRCRAFT, IN CONJUNCTION WITH THE COMMERCIAL ROLLS ROYCE AE2100D3 ENGINE MANAGED BY WARNER ROBINS, AIR LOGISTICS CENTER, TACTICAL AIRLIFT DIV.
9/16/19	11.7	N68335-19-C-0622	RESEARCH FUTURE CONCEPTS FOR ADVANCED PROPULSION SYSTEM TECHNOLOGY FOR THE NEXT GENERATION ENGINE & INTEGRATED POWER & THERMAL MANAGEMENT SYSTEM AS WELL AS POTENTIAL CAPABILITIES FOR THE NEXT GENERATION JET ENGINE AIRCRAFT IN SUPPORT OF THE PROPULSION & POWER ENGINEERING DEPARTMENT.
9/23/19	219.4	N00019-18-C-1061	PROCURE 48 F414-GE-400 INSTALL ENGINES & ENGINE DEVICES FOR LOT 23 F/A-18E/F AIRCRAFT.
9/25/19	7.2	FA8650-19-C-7945	MEASURING BIOLOGICAL APTITUDE EFFORT. THE CONTRACTOR WILL DEVELOP A GENERALIZABLE COMPUTATIONAL PLATFORM TO ASSESS WARFIGHTER APTITUDE & PERFORMANCE BASED ON EXPRESSION CIRCUITS THAT LINK MACROSCOPIC PHENOTYPES TO THE UNDERLYING MOLECULAR BIOLOGY OF THE INDIVIDUAL.
9/26/19	8.8	FA8122-19-G-0001	DELIVERY ORDER AGAINST A FIVE YEAR BOA FOR COMBUSTION LINERS IN SUPPORT OF THE T-64 ENGINE.
9/26/19	15.0	N64498-19-D-5001	CONTRACT ACTION FOR THE SUPPLY OF PROPRIETARY SPARE PARTS FOR THE POWER RECIRCULATION DRIVE SYSTEM LOCATED AT THE NAVAL SURFACE WARFARE CENTER, PHILADELPHIA DIV.
10/2/19	10.6	N00019-18-C-1061	THIS MODIFICATION EXERCISES AN OPTION TO PROCURE TWO F414-GE-400 PRODUCTION INSTALL ENGINES, FIVE ENGINE DEVICES, AND 29 ENGINE DEVICE K-SEALS IN SUPPORT OF LOT 23 ENGINE PRODUCTION FOR THE F/A-18E/F AIRCRAFT.
10/18/19	61.2	N00383-20-F-VX01	REPAIR, UPGRADE, OR REPLACEMENT, REQUIRED AVAILABILITY, REQUIRED RELIABILITY, CONFIGURATION MANAGEMENT, INVENTORY MANAGEMENT & OBSOLESCENCE MANAGEMENT IN SUPPORT OF THE STORES MANAGEMENT SYSTEM (SMS) AYQ-9, AYQ-13C, AND AYQ-13B; THE STORES MANAGEMENT UPGRADE SYSTEM (SMUG) AYK-22; & THE COMMUNICATION SET CONTROLLER (CSC) C-10382/A & C-12658/A
11/1/19	8.7	N00024-18-G-4113	INTEGRATED ELECTRONIC CONTROLLER KITS FOR LM2500 MARINE GAS TURBINE ENGINES.
11/14/19	7.1	FA8650-20-C-7011	CONTRACT FOR THE MATERIALS ARCHITECTURE & CHARACTERIZATION FOR HYPERSONICS (MACH) EFFORT. THIS CONTRACT PROVIDES FOR THE DESIGN & EXPERIMENTAL VALIDATION OF A TRANSPIRATION COOLING SYSTEM TO REDUCE HEATING AT THE LEADING EDGE & CONTROL PART TEMPERATURE IN LINE WITH MATERIAL CAPABILITY.

General Electric

Date	Award (USD millions)	Contract #	Description
11/25/19	1,336.8	W58RGZ-15-D-0048	T700 ENGINE DELIVERIES IN SUPPORT OF THE ARMY H-60 & AH-64 PROGRAMS, NAVY H-60 PROGRAMS, AIR FORCE PROGRAMS, FMS & OTHER GOVERNMENT AGENCIES.
12/17/19	11.1	SPE4A1-17-G-0008	SUPPORT OF THE MARINE CORPS PRESIDENTIAL HELICOPTER PROGRAM. THIS MODIFICATION PROCURES FIVE CT7-8A6 ENGINES WITH METAL SHIPPING CONTAINERS, INTERFACE HARNESS & ASSOCIATED CONTROL HARDWARE.
12/19/19	13.3	N00421-19-G-0001	ENGINEERING & ENGINE SYSTEM SUPPORT FOR THE F414 COMPONENT IMPROVEMENT PROGRAM.
12/27/19	7.5	N00421-19-G-0001	ENGINEERING & ENGINE SYSTEM SUPPORT FOR THE T700 COMPONENT IMPROVEMENT PROGRAM.
2020			
1/10/20	318.0	FA8626-20-D-0002	ENGINE COMPONENT IMPROVEMENT PROGRAM.
2/5/20	26.6	N00383-17-G-AK01	PROCUREMENT OF 101 GENERATOR CONVERTER UNITS USED ON THE F/A-18 AIRCRAFT.
3/2/20	10.4	FA8750-20-C-0203	RAPID ASSURANCE CURATION KIT (RACK) SOFTWARE. THIS CONTRACT PROVIDES FOR THE RESEARCH, DEVELOPMENT & DEMONSTRATION OF THE RACK SOFTWARE TO ENABLE CERTIFIERS TO RAPIDLY DETERMINE SYSTEM RISK ACCEPTABILITY.
3/30/20	215.0	N00019-18-C-1061	PROCUREMENT OF 48 F414-GE-400 INSTALL ENGINES & ENGINE DEVICES FOR THE NAVY SUPER HORNET F/A-18 WARFARE AIRCRAFT.
4/7/20	51.5	N00019-18-C-1061	PROCURE EIGHT GENERAL ELECTRIC F414-400 SPARE ENGINES, 11 AFTERBURNER MODULES & 12 LOW PRESSURE TURBINE MODULES FOR THE NAVY F/A-18 SUPER HORNET FIGHTER AIRCRAFT.
4/8/20	9.7	N00019-16-G-0005	THIS MODIFICATION PROCURES NON-RECURRING ENGINEERING FOR THE PHASE TWO ASSEMBLY PLANNING EFFORT FOR THE RE-START OF T-64 ENGINE CORE PRODUCTION IN SUPPORT OF THE H-53E ENGINE RELIABILITY IMPROVEMENT PROGRAM.
4/13/20	138.2	SPE4AX-20-D-9002	CONTRACT FOR SUPPLIES RELATED TO THE TF-34 ENGINE.
4/21/20	72.5	N00019-18-C-0004	THIS MODIFICATION EXERCISES OPTIONS TO PROCURE 140 GENERATOR CONVERTER UNITS (GCUS) G3 TO G4 CONVERSION KITS, 260 G4 GCUS & 140 WIRING HARNESSES IN SUPPORT OF F/A-18E/F SUPER HORNET & E/A-18G GROWLER WARFARE AIRCRAFT ELECTRICAL SYSTEMS.
4/28/20	707.3	FA8626-18-D-0029	CONTRACT ACTIONS UNDER AN EXISTING F110 INDEFINITE-DELIVERY/INDEFINITE-QUANTITY CONTRACT, FOR F110-GE-129 ENGINE PRODUCTION. THESE ACTIONS PROVIDE FOR F110 ENGINE PRODUCTION, INCLUDING INSTALLS & SPARES & MODERNIZED ENGINE MANAGEMENT SYSTEM COMPUTERS.
5/22/20	394.1	SPE4AX-20-D-9445	SUPPLIES RELATED TO THE J85 ENGINE.
5/28/20	9.4	W58RGZ-20-D-0036	MAINTENANCE & OVERHAUL OF THE STAGE 1 NOZZLE.

General Electric

Date	Award (USD millions)	Contract #	Description
6/5/20	20.0	FA8626-16-2-138	MODIFICATION TO CONTRACT FOR COVID-19 INDUSTRIAL BASE SUPPORT. THE CONTRACT MODIFICATION IS FOR THE EXECUTION OF AN OUT-OF-SCOPE MODIFICATION WITH A NEW STATEMENT OF WORK & JUSTIFICATION & APPROVAL TO ISSUE AN UNDEFINIZED CONTRACT ACTION, WHICH IS BEING USED TO PRESERVE AN AT RISK INDUSTRIAL BASE IMPACTED BY THE COVID-19 PANDEMIC.
6/5/20	180.6	N00421-20-D-0115	THIS CONTRACT PROCURES COMMERCIAL DEPOT LEVEL SERVICES FOR THE REPAIR & OVERHAUL OF T700-GE-401/401C TURBO SHAFT ENGINES, COLD SECTION MODULES & POWER TURBINE MODULES FOR THE NAVY H-60 SEAHAWK HELICOPTER AS WELL AS THE MARINE CORPS H-1 COBRA & BELL UH-1 HUEY AIRCRAFT.
6/19/20	37.1	W58RGZ-20-D-0046	SUPPORT OF THE T700 SERIES ENGINE PROGRAM.
6/30/20	101.3	FA8626-20-C-0016	CONTRACT FOR F-15EX LOT ONE ENGINE PRODUCTION. THIS ACTION PROVIDES FOR THE PURCHASE & DELIVERY OF F110-GE-129 ENGINES, INCLUDING INSTALLS & SPARES & MODERNIZED ENGINE MONITORING SYSTEM COMPUTERS.
7/24/20	259.4	SPE4AX-15-D-9412	MODIFICATION EXERCISING THE THREE-YEAR OPTION PERIOD OF AN EIGHT-YEAR BASE CONTRACT WITH ONE THREE-YEAR OPTION PERIOD FOR SUPPLIES RELATED TO AIRPLANE ENGINE PLATFORM SUPPORT.
9/1/20	9.9	FA8122-20-D-0010	REMANUFACTURE OF THE F108 MODULE 14 LOW PRESSURE TURBINE ASSEMBLY. THIS CONTRACT PROVIDES FOR THE REMANUFACTURING OF THE F108-200 (CFM56-2A) LOW PRESSURE TURBINE ASSEMBLY (MODULE 14) TO LIKE-NEW CONDITION.
9/11/20	32.5	SPE4AX-20-D-9005	OVERHAUL F108 ENGINES.
9/15/20	37.1	W58RGZ-20-D-0069	FIELD SERVICE REPRESENTATIVES IN SUPPORT OF THE T700 SERIES ENGINE PROGRAM.
9/15/20	9.9	N00104-20-C-CA04	EVALUATION & REPAIR AND/OR MODIFICATION OF MARINE PROPELLERS USED ON LANDING CRAFT AIR CUSHION VEHICLES.
9/17/20	19.6	N00019-16-G-0005	THIS ORDER PROVIDES PROJECT MANAGEMENT AS WELL AS RECURRING & NON-RECURRING ENGINEERING SUPPORT, MATERIALS & DOCUMENTATION TO IMPLEMENT, MANAGE & REPORT ON THE B-SUMP ADDITIVE MANUFACTURING, TEMPERATURE DISTORTION SENSITIVITY TEST, SECOND SOURCE BEARING, SECOND SOURCE EXTERNAL HOSE & FITTINGS, SECOND SOURCE ACCESSORY GEAR BOX, AND EMERGENCY OIL SYSTEM ELIMINATION COST REDUCTION INITIATIVES IN SUPPORT OF THE CH-53K T408 ENGINE.
9/23/20	23.5	FA8122-20-D-0007	CONTRACT WITH A FIVE-YEAR YEAR ORDERING PERIOD FOR THE REMANUFACTURE OF THE F108 MODULE 13/15 LOW PRESSURE TURBINE UNION ASSEMBLY.
9/24/20	8.9	SPE4AX-19-D-9400	FIVE-YEAR LONG-TERM CONTRACT FOR T-64 ENGINE COMPRESSOR CASINGS.
9/24/20	10.1	SPE4AX-19-D-9400	FIVE-YEAR LONG-TERM CONTRACT FOR T-64 ENGINE NOZZLE TURBINES.
9/24/20	15.2	SPE4AX-19-D-9400	DELIVERY ORDER AGAINST FIVE-YEAR LONG-TERM CONTRACT FOR T-64 ENGINE EXHAUST FRAMES.

General Electric

Date	Award (USD millions)	Contract #	Description
9/24/20	38.2	SPE4AX-19-D-9400	DELIVERY AGAINST FIVE-YEAR LONG-TERM CONTRACT FOR T-64 ENGINE COMBUSTION CHAMBERS.
9/30/20	12.0	SPRA1-20-D-0090	ALTERNATIVE REGULATOR ENGINE & GENERATORS.
10/30/20	8.1	N00019-17-D-0089	THIS MODIFICATION ADDS SCOPE TO PROVIDE LOGISTICS SERVICES IN SUPPORT OF KC-130J R391 PROPELLER UPGRADES FOR THE MARINE CORPS. SPECIFICALLY, THIS EFFORT PROVIDES DURABILITY UPGRADES TO THE PROPELLER BLADE POLYURETHANE & LEADING EDGE GUARD.
12/21/20	20.0	FA8604-21-D-8004	CONTRACT TO PROVIDE CONTRACTOR ENGINEERING & TECHNICAL SERVICES ENGINE SUPPORT FOR AIR NATIONAL GUARD & FMS PARTNERS.
12/22/20	220.0	N00019-18-C-1061	THIS MODIFICATION EXERCISES AN OPTION TO PROCURE 48 F414-GE-400 ENGINES & ENGINE DEVICES IN SUPPORT OF THE F/A-18 SUPER HORNET PRODUCTION AIRCRAFT FOR THE NAVY.
12/29/20	126.5	H92241-21-D-0002	PROVIDE LIFE-CYCLE CONTRACTOR SUPPORT FOR THE YT706-GE-700 ENGINE & COMPONENTS IN SUPPORT OF U.S. SPECIAL OPERATIONS COMMAND (USSOCOM).
12/30/20	11.4	N00014-21-C-1002	CONTRACT FOR THE NEXT GENERATION PROPULSION ENABLERS TECHNOLOGY DEVELOPMENT. THIS CONTRACT PROVIDES FOR THE DEVELOPMENT OF THREE TECHNOLOGIES TO IMPROVE GAS TURBINE PROPULSION. THE FIRST IS ADVANCED FAN AERODYNAMICS DEVELOPMENT, DESIGNED TO INCREASE STALL MARGIN, IMPROVE OPERABILITY & ALLOW ENGINES TO BE DESIGNED TO HIGHER PRESSURE RATIOS WITH BETTER TRANSIENT CHARACTERISTICS.
12/30/20	14.7	?	CPFF ORDER (N0042121F0001) AGAINST A PREVIOUSLY ISSUED BOA (N0001919G0001). THIS ORDER PROCURES ENGINEERING SERVICES IN SUPPORT OF THE F414 ENGINE SYSTEM COMPONENT IMPROVEMENT PROGRAM FOR THE F/A-18E/F SUPER HORNET & EA-18G GROWLER AIRCRAFT.
12/30/20	111.9	N00019-18-C-1007	THIS MODIFICATION PROCURES 20 T408-GE-400 TURBOSHAFT ENGINES, PECULIAR SUPPORT EQUIPMENT, AND ASSOCIATED ENGINE, PROGRAMMATIC & LOGISTICS SERVICES IN SUPPORT OF CH-53K LOT 4 LOW RATE INITIAL PRODUCTION & SPARES.
2021			
1/13/21	101.5	N00019-18-C-1007	THIS MODIFICATION PROCURES 21 T408-GE-400 TURBOSHAFT ENGINES & ASSOCIATED ENGINE, PROGRAMMATIC & LOGISTICS SERVICES IN SUPPORT OF CH-53K LOT FIVE LOW RATE INITIAL PRODUCTION AIRCRAFT.
1/25/21	10.2	N66001-21-C-4014	DEVELOP A MOBILE AUTOMATED MANUFACTURING PLATFORM TO PROVIDE JUST-IN-TIME MANUFACTURING OF NUCLEIC ACID COUNTERMEASURES TO RAPIDLY PRODUCE, FORMULATE & PACKAGE DOSES OF NUCLEIC ACID THERAPEUTICS OR PROPHYLACTICS

General Electric

Date	Award (USD millions)	Contract #	Description
2/9/21	21.1	N00019-18-C-1007	HIS MODIFICATION PROCURES 4 T408-GE-400 TURBOSHAFT SPARE ENGINES & VARIOUS SPARE ENGINE PARTS IN SUPPORT OF CH-53K LOT 5 LOW RATE INITIAL PRODUCTION AIRCRAFT.
2/19/21	8.7	N00421-19-G-0001	THIS ORDER PROVIDES ENGINEERING SERVICES & ENGINE SYSTEM IMPROVEMENT SUPPORT FOR THE T408 ENGINE COMPONENT IMPROVEMENT PROGRAM.
2/26/21	15.1	N64498-21-F-4070	PROCUREMENT OF TWO COMPLETE LM2500 SINGLE SHANK TURBINE HIGH PRESSURE TURBINE KITS & THREE COMPLETE LM2500 PAIRED BLADE TURBINE HPT KITS.
3/15/21	23.9	N0001920F0843	THIS MODIFICATION EXERCISES AN OPTION TO PROCURE EIGHT COMPLETE CT7-8A6 SPARE ENGINES & VARIOUS ENGINE COMPONENTS IN SUPPORT OF THE VH-92A PRESIDENTIAL HELICOPTER PROGRAM FOR THE NAVY.
3/31/21	21.6	N0001921C0035	THIS CONTRACT PROVIDES 10 T-64 ENGINE CORES FOR THE CH-53E AIRCRAFT AS PART OF THE T-64 ENGINE RELIABILITY IMPROVEMENT PROGRAM. W
4/30/21	99.8	N00383-17-D-BG01	LOGISTICS & REPAIR SUPPORT OF 17 F414 ENGINE COMPONENTS FOR THE F/A-18 AIRCRAFT.

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