2020 Annual Report

GENERAL DYNAMICS

Dear Fellow Shareholder

Your company faced a very challenging 2020 with very good performance under the circumstances. Our Aerospace markets were dramatically impacted by COVID-19 and the resultant economic disruptions and travel restrictions. Our defense markets did not have the same problem, but productivity was directly and immediately impacted by the shutdown of numerous government agencies and by disruptions to our workforce. Nevertheless, your company demonstrated its resilience and adaptability.

As a critical national infrastructure company, we remained open and fully operational. We took immediate action to protect our people, supply chain and operations. And, as you would expect, our management team was on-site, at their posts, throughout.

We were also called upon by the government to help our communities. We responded by providing over 200,000 items of PPE to first responders in hard-hit areas. We repurposed machinery to produce shields and testing swab packaging. We also increased donations to hospitals and food banks.

Despite the foregoing, we achieved most of our operational and financial goals. We had solid cash performance and added to our backlog in important ways. Our total backlog rose 3% to $89.5 billion and our total estimated contract value rose to a record $134.7 billion. The total company book-to-bill was 1.1 to 1 for the year, led by particularly strong order performance at Electric Boat. This bodes well for the business going forward.

On the cash front, we had free cash flow of $2.9 billion, a very respectable 91% of net earnings. We expect our cash generation from operations in the near and intermediate time frames to be even better. It follows quite naturally that we improved our financial flexibility with an $854 million reduction in net debt. We also increased our dividend by 8%, marking the 23rd consecutive year of annual increases.

As I am sure you are aware, the entire Aerospace industry was enormously impacted by the economic and social consequences of COVID-19. Some commentators called it a worldwide collapse of both the commercial and business jet markets. Early in the crisis, we sought to be a good cyclical. In that regard, we lowered our aircraft production rate to better align production with demand, adjusted staffing levels, and implemented other strong cost control measures. As a result, your company's Aerospace operating earnings were an industry-leading $1.08 billion on revenue of $8.1 billion, an operating margin of 13.4%. This, of course, was down from 2019, a record year. However, this performance compared to all others in the industry is more than compelling.

Demand, while lower than pre-COVID levels, remained solid with a dollar-denominated book-to-bill for the year at 0.88 to 1. The sales pipeline remains active for us, and we believe it will improve further as international travel restrictions are lifted and the economy more fully recovers.

Our product development program proceeds at the predicted pace at Gulfstream. Flight testing of the G700 began in February 2020, and by year end, the five flight-test airplanes had accumulated more than 1,000 flight hours. Entry into service for this magnificent aircraft is targeted for the final quarter of 2022.

The G500/600 family of aircraft has almost 100 aircraft in service as I write this letter. Our manufacturing productivity continues to improve, resulting in better margins. Our quality has been superb. These two products have been well received by the market as solid replacements for the venerable G450 and G550.

We are very proud of the accomplishments of the men and women of Gulfstream and Jet Aviation in this environment.

We asked our defense units to try to make up the shortfall caused by the tough environment in Aerospace. They tried but didn't quite get there.

At Combat Systems, our revenue was up 3.1% to $7.2 billion, and operating earnings were up 4.5% to slightly more than $1 billion. Our U.S. Army customer is providing steady demand as it modernizes the force. As a result, total estimated contract value was up to $24.3 billion, driven by orders for the newly updated Abrams main battle tank, new versions of the Stryker combat vehicle and increased international orders. This was, once again, strong performance from Combat Systems, the world's leading integrator of armored combat vehicles.

The Marine Systems segment had another very good year. Revenue of $10 billion was up almost $800 million, or 8.7%, driven primarily by increased submarine construction. Operating earnings were $854 million, up 8.8%, the highest ever for Marine Systems. Backlog rose to $50 billion, up 13.1% on the award of a $9.5 billion contract for the construction of the first two of 12 Columbia-class ballistic missile submarines. To support the increase in submarine production this year and beyond, we continued to invest capital expenditures at Electric Boat. We expect solid year-over-year increases in production, revenue and earnings in the Marine Systems segment.

Our newly designated Technologies segment combines for reporting purposes our IT services business and Mission Systems, reflecting their strategy to increasingly go to market as a team. This group was the most impacted of our defense businesses by COVID-19 with the most remote participation from employees and the most difficulty accessing customer locations. As a result, revenue of $12.6 billion was off $711 million, and operating earnings were $1.2 billion, or 7.6% lower, generating an operating margin of 9.6%. Nonetheless, they demonstrated outstanding cash performance, generating cash flow in excess of 150% of imputed net earnings, the strongest performance within the company.

Because of strong order activity, particularly at GDIT, total estimated contract value reached over $41 billion, the highest in the segment's history on a combined basis. Order activity continues to remain strong, again positioning this segment for good growth.

In March 2021, the board of directors raised the dividend by 8.2% to a quarterly rate of $1.19 per share. This marks the 24th consecutive year of dividend increases.

All in all, despite the challenges of COVID-19, we continued to serve our customers and our communities. We took care of our people and continued our commitment to building a cohesive, diverse workforce. Our commitment to creating long-term value remains our focus as we continue to navigate through the pandemic.

PHEBE N. NOVAKOVIC
Chairman and CEO
March 9, 2021

Aerospace

We design, manufacture and service the most advanced, capable and reliable family of business jets in the world. Gulfstream has earned its powerful brand recognition by remaining at the forefront of innovation, introducing six new aircraft models since 2008 that consistently raise the bar on safety, performance, comfort and efficiency.

With Jet Aviation, we have a global footprint that enables us to provide a full range of services for Gulfstream aircraft as well as aircraft produced by other manufacturers.

We also lead the industry in sustainability, designing aircraft that achieve unparalleled fuel efficiency and noise and emissions reductions, and we participate in an industrywide effort to cut carbon emissions in half by 2050. As the business aviation market grows, we are poised to remain the product and service provider of choice for the most discerning customers.

Innovation

The Aerospace segment achieved remarkable performance in 2020, producing solid financial results despite the pandemic's devastating impact on the industry. Significant accomplishments include:

- *Delivered to customers a total of 127 aircraft, of which 105 were large-cabin aircraft*
- *Received type certificate approval from the European Union Aviation Safety Agency (EASA) for the Gulfstream G600, delivering the first aircraft to a European customer in the fourth quarter*
- *Flew the first five ultra-long-range Gulfstream G700 flight-test aircraft, which offer superior performance and the industry's most spacious cabin, with deliveries on track to begin in fourth-quarter 2022*
- *Grew our global service footprint, opening or expanding new facilities in Scottsdale, Arizona; Farnborough, U.K.; Palm Beach, Florida; Atlanta, Georgia; Bozeman, Montana; and Fort Worth, Texas*
- *Introduced a new plasma ionization air purification system, available for retrofit on existing aircraft models, to complement Gulfstream's already 100% fresh-air environment, addressing customer concern about wellness during the pandemic*
- *Increased the availability of sustainable aviation fuel (SAF) for customers and continued its use to power Gulfstream's own aircraft, achieving a total of 1.3 million nautical miles flown on SAF by the company*
- *Delivered the 200th super-midsize Gulfstream G280 business jet since it entered service in 2012*
- *Sold the last commercially available Gulfstream G550, which entered service in 2003, with more than 750 in the GV, GV-SP and G550 series remaining in service*

Marine Systems

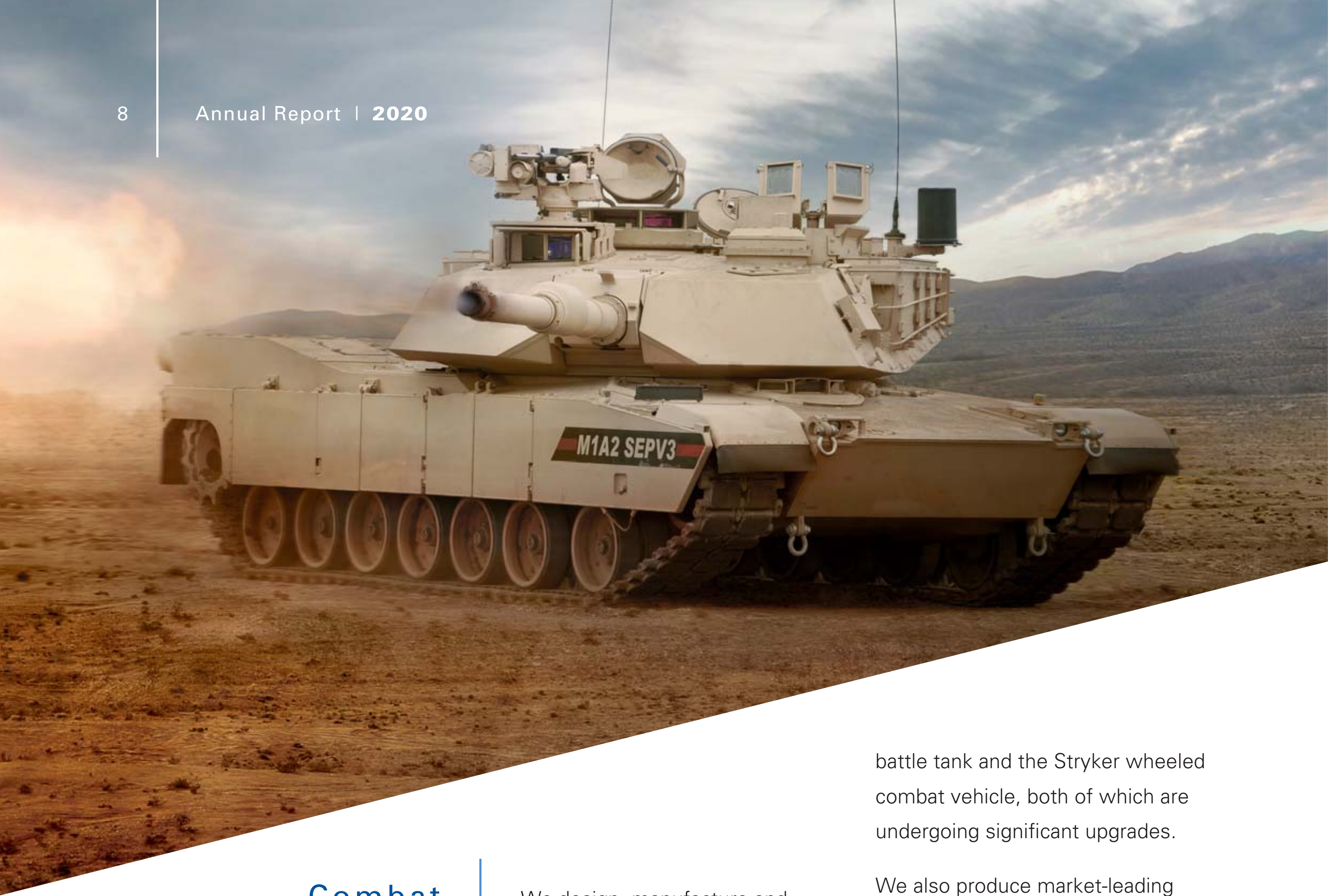
Our Marine Systems segment is the leading designer and builder of nuclear-powered submarines and a major producer of surface combatants and auxiliary ships for the U.S. Navy, as well as Jones Act ships for commercial customers. We operate through three business units: Electric Boat, headquartered in Groton, Connecticut; Bath Iron Works in Bath, Maine; and NASSCO in San Diego, California. Each has outlying facilities spanning the East and West Coasts of the United States.

In response to the nation's unprecedented increase in demand, particularly for submarines, we are making substantial investments in our facilities, growing our workforce, and strengthening our supply chains. We also provide maintenance, modernization and lifecycle support services for nearly all of the Navy's ship classes in both U.S. and overseas ports.

Growth

In 2020 we focused on executing against our current contracts while building capacity to perform on our record $50 billion backlog in the coming years. Highlights include:

- *Awarded construction contract for the first two Columbia-class ballistic missile submarines and formally began USS Columbia (SSBN 826) construction*
- *Delivered USS Vermont (SSN 792) to the U.S. Navy, the 19th submarine of the Virginia class, with 18 ships remaining in backlog to deliver through 2029*
- *Continued the $1.8 billion expansion and modernization of our facilities to support the increased pace of submarine construction, with expenditures peaking in 2020*
- *Continued to execute on our backlog of 11 Arleigh Burke-class guided-missile destroyers extending through 2027, to include completion of builder's sea trials of the future USS Daniel K. Inouye (DDG-118), with delivery planned in early 2021*
- *Accomplished $1 billion in post-delivery lifecycle services for both surface ships and submarines, providing repair, maintenance and service-life extension in our shipyards as well as at Navy facilities and overseas ports*
- *Laid the keel for the future USNS Harvey Milk (T-AO-206), the second of six contracted John Lewis-class fleet replenishment oilers, and started construction of the future Expeditionary Sea Base USS John Canley (ESB-6)*
- *Delivered to a commercial customer the second Kanaloa-class vessel, the largest combination container/roll-on, roll-off (ConRo) ship ever built in the United States*



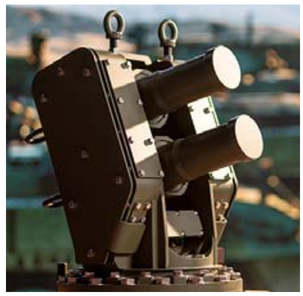
Combat Systems

We design, manufacture and sustain the world's most lethal, mobile and survivable land combat platforms and munitions for our U.S. and international customers through our three business units: Land Systems, European Land Systems and Ordnance and Tactical Systems.

Our installed base of more than 24,000 vehicles across more than 25 countries worldwide positions us well for modernization programs, support and sustainment services and future development. We are the sole-source producer of two foundational platforms central to the U.S. Army's warfighting capabilities: the Abrams main battle tank and the Stryker wheeled combat vehicle, both of which are undergoing significant upgrades.

We also produce market-leading light armored vehicles (LAVs), the Piranha 8x8 armored combat vehicle, the AJAX and ASCOD family of medium-weight tracked combat vehicles, the Duro and Eagle classes of wheeled tactical vehicles, as well as mobile bridge systems able to support payloads up to 100 tons.

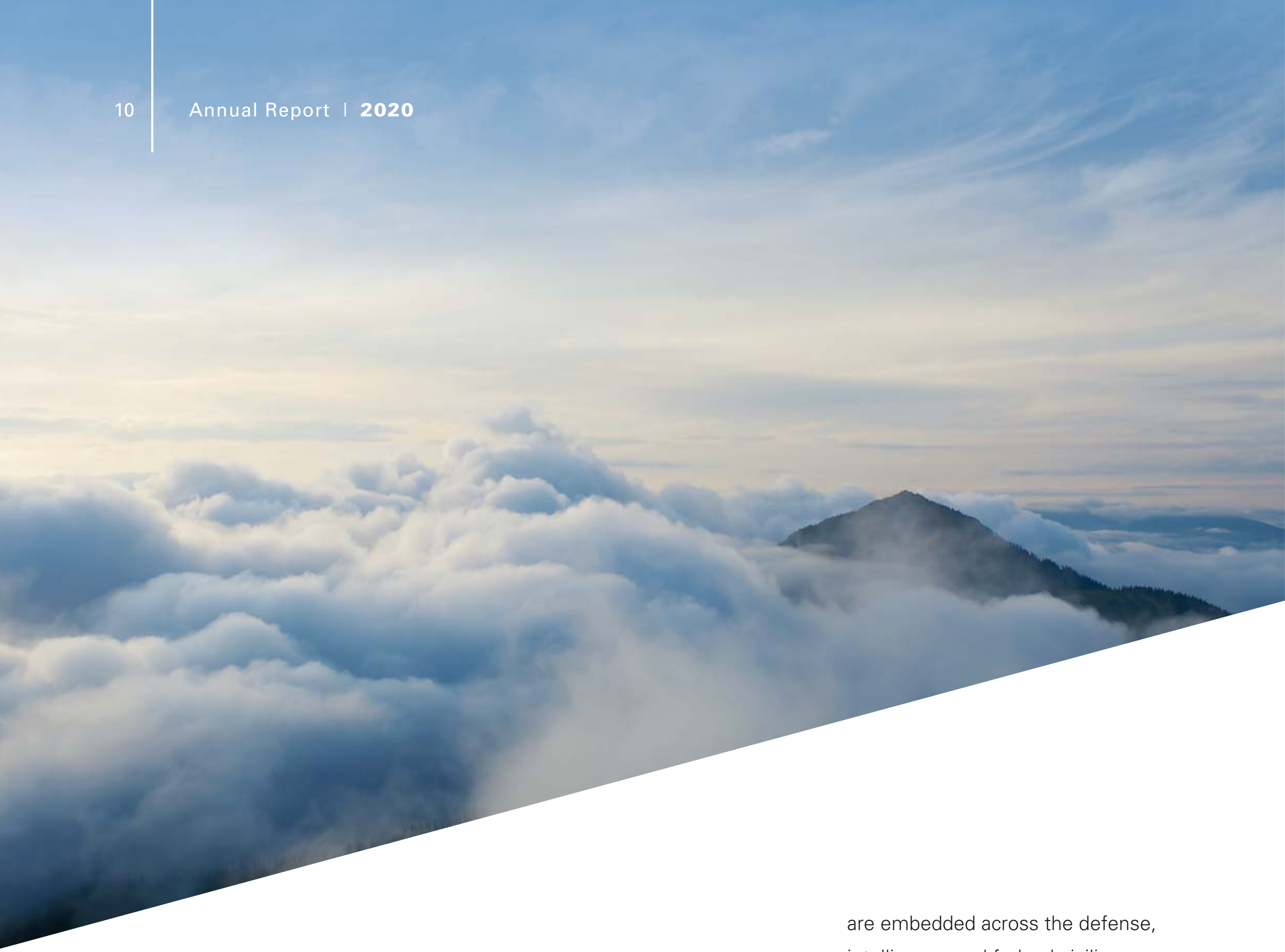
We produce armaments and munitions that support nearly all kinetic military systems in today's U.S. arsenal. We remain closely aligned with our customers to meet their future needs, including working directly with the Army's cross-functional teams to design solutions that fulfill its modernization objectives.



Versatility

In 2020 our products continued to demonstrate their versatility and desirability among multiple customers worldwide. Highlights include:

- *Awarded a $4.3 billion maximum potential value contract from the U.S. Army to upgrade Abrams tanks to the M1A2 System Enhancement Package Version 3 (SEPv3) configuration*
- *Awarded a $3.4 billion maximum potential value contract from the U.S. Army to produce Hydra-70 rockets*
- *Awarded a $2.5 billion maximum potential value contract from the U.S. Army to upgrade Stryker vehicles to the double-V-hull A1 configuration and an additional $1.2 billion maximum potential value contract to produce Initial Maneuver Short-Range Air Defense (IM-SHORAD) configured Stryker vehicles*
- *Awarded an $870 million contract from the Spanish Ministry of Defense to produce, deliver, maintain and provide lifecycle support for 348 Piranha 5 8x8 wheeled combat vehicles*
- *Awarded contracts to build and deliver 80 Eagle 6x6 vehicles to the German Army's ambulance corps, 56 Eagle 4x4 patrol and reconnaissance vehicles to the Danish Ministry of Defense and 30 Pandur 6x6 "Evolution" wheeled armored vehicles to the Austrian armed forces*



Technologies

Our Technologies segment offers a full spectrum of end-to-end solutions that meld specialized hardware, software and services. Consisting of General Dynamics Information Technology and General Dynamics Mission Systems, this segment addresses the growing demand from customers that increasingly prioritize technology solutions as a critical element of their missions.

Our 40,000 technologists, engineers, mission experts and other professionals, who often possess top security clearances, are embedded across the defense, intelligence and federal civilian markets. They enable customers to leverage cloud, high-performance computing, analytics and artificial intelligence to secure the nation's most sensitive information, improve government services, and inform critical decision-making.

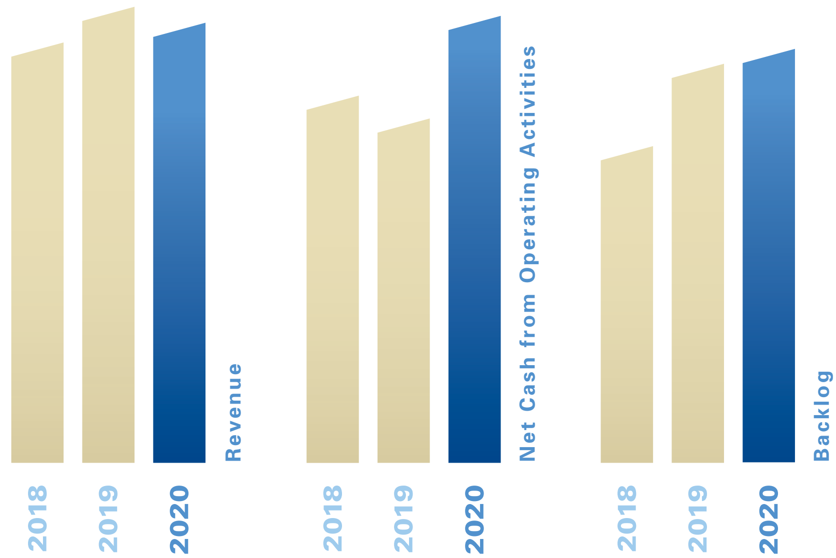
As an original equipment manufacturer, we are uniquely positioned to provide purpose-built products that bring these capabilities reliably and securely to the most rugged or inhospitable locations, from the battlefield to the undersea domain to deep space.

Solutions

In 2020 our position as a market leader in providing technology services and solutions drove significant new business, the majority of which was awarded through indefinite delivery, indefinite quantity contracts. The year's highlights included these awards:

- *A $4.4 billion maximum potential value contract for the Defense Enterprise Office Solutions (DEOS) program to stand up cloud environments and support the migration of over 3.2 million existing Department of Defense users to the cloud*
- *One of three companies selected for a $3.3 billion maximum potential value contract to support the U.S. State Department's Bureau of Consular Affairs with visa application and issuance at U.S. embassies and consulates overseas*
- *An $885 million maximum potential value contract from the U.S. Army to modernize its training programs*
- *A $760 million maximum potential value contract to provide enterprise IT and cybersecurity services and solutions for the DoD*
- *A combined maximum potential value of $400 million for contracts from the Centers for Medicare and Medicaid Services to provide cloud services and software tools and to support the agency's Healthcare Integrated General Ledger Accounting System application*
- *$335 million in firm orders from the Army for computing and communications equipment under the Common Hardware Systems-5 (CHS-5) program*
- *A $305 million maximum potential value contract from the Veterans Administration to modernize benefits claims processing*
- *A $105 million contract to support the design and development of fire-control systems for the U.S. Navy's Columbia-class and the U.K. Royal Navy's Dreadnought-class submarines*
- *Multiple subcontracts for the engineering and manufacturing development phase of the U.S. Air Force's Ground-Based Strategic Deterrent (GBSD) program*

2020 Financial Highlights



Years Ended December 31	2018	2019	2020
Revenue	$36,193	$39,350	**$37,925**
Operating Earnings	4,394	4,570	**4,133**
Diluted EPS from Continuing Operations	11.22	11.98	**11.00**
Net Cash from Operating Activities	3,148	2,981	**3,858**
Backlog	67,871	86,945	**89,489**
Total Estimated Contract Value	103,366	126,194	**134,666**

Dollars in millions, except per-share amounts

GENERAL DYNAMICS

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)
[☑] ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2020

OR

[ ] TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _______ to _______

Commission File Number 1-3671

GENERAL DYNAMICS CORPORATION

(Exact name of registrant as specified in its charter)

Delaware	**13-1673581**
State or other jurisdiction of incorporation or organization	*I.R.S. Employer Identification No.*
11011 Sunset Hills Road Reston, Virginia	**20190**
Address of principal executive offices	*Zip code*

(703) 876-3000

Registrant's telephone number, including area code

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock	GD	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes _✓_ No ___

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ___ No _✓_

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes _✓_ No ___

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes _✓_ No ___

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer _✓_ Accelerated filer ___ Non-accelerated filer ___ Smaller reporting company ___ Emerging growth company ___

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ___

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. Yes _✓_ No ___

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ___ No _✓_☐

The aggregate market value of the voting common equity held by non-affiliates of the registrant was $36,917,915,083 as of June 28, 2020 (based on the closing price of the shares on the New York Stock Exchange).

286,264,679 shares of the registrant's common stock, $1 par value per share, were outstanding on January 31, 2021.

DOCUMENTS INCORPORATED BY REFERENCE:

Part III incorporates by reference information from certain portions of the registrant's definitive proxy statement for the 2021 annual meeting of shareholders to be filed with the Securities and Exchange Commission within 120 days after the close of the fiscal year.

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PART I

ITEM 1. BUSINESS

(Dollars in millions, except per-share amounts or unless otherwise noted)

BUSINESS OVERVIEW

General Dynamics is a global aerospace and defense company that specializes in high-end design, engineering and manufacturing to deliver state-of-the-art solutions to our customers. We offer a broad portfolio of products and services in business aviation; ship construction and repair; land combat vehicles, weapons systems and munitions; and technology products and services. Our leadership positions in attractive business aviation and defense markets enable us to deliver superior and enduring shareholder returns.

Our company consists of 10 business units, which are organized into four operating segments: Aerospace, Marine Systems, Combat Systems and Technologies. We refer to the latter three collectively as our defense segments. To optimize its market focus, customer intimacy, agility and operating expertise, each business unit is responsible for the development and execution of its strategy and operating results. This structure allows for a lean corporate function, which sets the overall strategy and governance for the company and is responsible for allocating and deploying capital.

Our business units seek to deliver superior operating results by endeavoring to build industry-leading franchises. To achieve this goal, we invest in advanced technologies, pursue a culture of continuous improvement, and strive to be the low-cost, high-quality provider in each of our markets. The result is long-term value creation measured by strong earnings and cash flow and an attractive return on capital.

Over the past eight years, we have invested nearly $20 billion to create, renew or expand our portfolio of products and services across our businesses to drive long-term growth and shareholder value creation. This includes product development investments in Aerospace to bring to market an all-new lineup of business jet aircraft, capital investments in Marine Systems to support significant growth in U.S. Navy ship and submarine construction plans over the next two decades, development of next-generation platforms and technologies to meet customers' emerging requirements in Combat Systems, and strategic acquisitions to achieve critical mass and build out a complete spectrum of solutions for our Technologies customers.

Following is additional information on each of our operating segments. For a supplemental discussion of segment performance and backlog, see Management's Discussion and Analysis of Financial Condition and Results of Operations in Item 7.

AEROSPACE

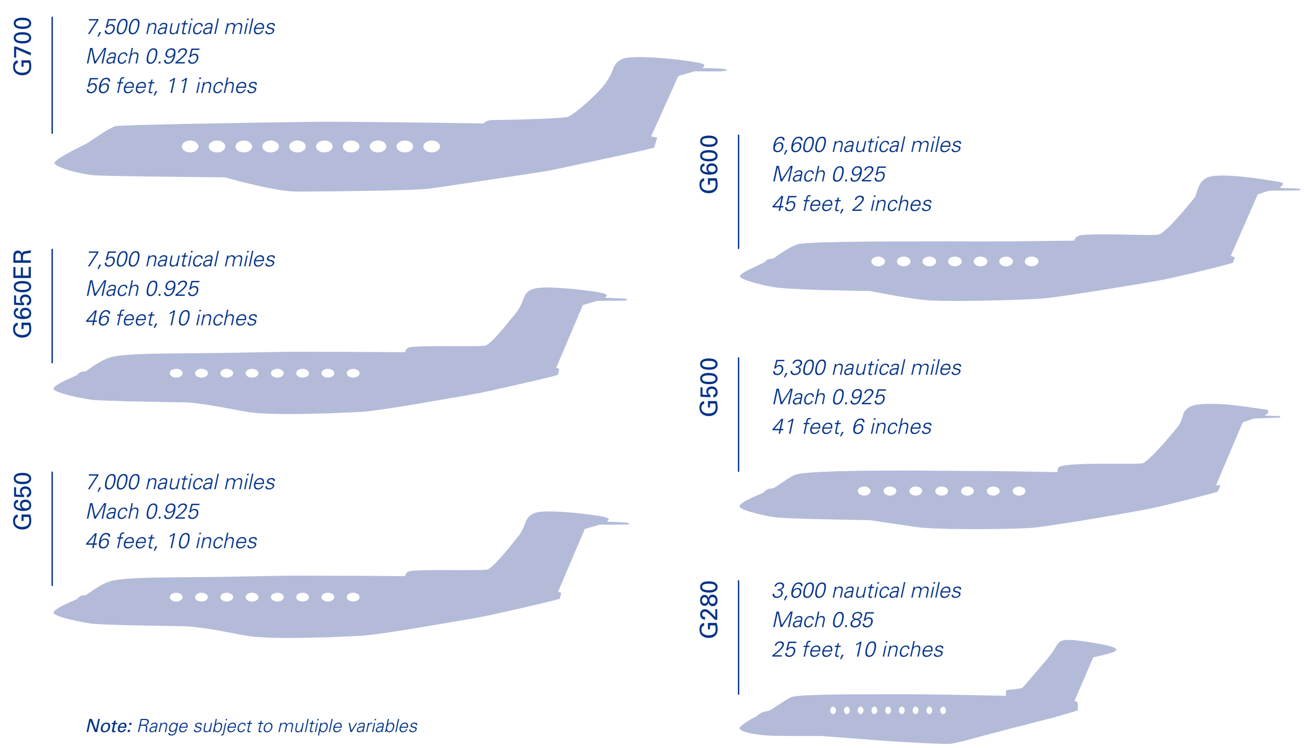
Our Aerospace segment is recognized as a leading producer of business jets and the standard bearer in aircraft repair, support and completion services. The segment consists of our Gulfstream and Jet Aviation business units. We have earned our reputation through:

- superior aircraft design, quality, performance, safety and reliability;
- technologically advanced flight deck and cabin systems; and
- industry-leading customer support.

We believe the key to long-term value creation in the business jet industry is steady investment in new aircraft models and technologies and in customer service capabilities. As a result, since we acquired Gulfstream over 20 years ago, we have made significant investments in research and development (R&D), state-of-the-art manufacturing facilities, and maintenance and support through a combination of product development efforts, capital expansion and the acquisition of Jet Aviation's global support network.

We are committed to continual investment in R&D to create new aircraft that consistently broaden customer offerings while raising the bar for safety and performance. The result is the unprecedented development of an all-new lineup of the most technologically advanced business jet aircraft in the world. These aircraft offer industry-leading cabin, cockpit and safety technologies and the longest ranges at the fastest speeds in their respective classes.

The following represents Gulfstream's current product line, along with the maximum range, maximum speed and cabin length (excluding baggage) for each aircraft:



The most recent additions to the Gulfstream fleet are two new large-cabin aircraft, the G500 and G600, which entered service in 2018 and 2019, respectively. These clean-sheet (i.e., all-new) aircraft replace the G450 and G550 models, which have a combined installed base of more than 1,650 aircraft around the world. Our investment included development of a new wing, new avionics, new fuselage and new ergonomically designed larger interiors, as well as systems and technologies to improve the manufacturing process and quality of the platform. As a result, the G500 and G600 are faster, more fuel efficient and have greater cabin volume, more range and improved flight controls compared with the aircraft they are replacing. At year-end 2020, cumulative deliveries for the two new aircraft totaled almost 100.

The next model to join the Gulfstream lineup is the ultra-long-range, ultra-large-cabin G700. It combines our most spacious cabin with our advanced Symmetry Flight Deck and the superior high-speed performance of all-new engines to create best-in-class capabilities. Gulfstream is in the process of flight testing and certification of the G700, which we expect to enter service in the fourth quarter of 2022.

The ultra-long-range, ultra-large-cabin G650 and G650ER continue to generate significant customer interest, with more than 430 aircraft of this family currently operating in 50 countries. Since the first G650 entered service in 2012, its capabilities and reliability have led to significant sales and expansion of our installed base around the globe. Gulfstream's current product line holds more than 300 city-pair speed records, more than any other business jet manufacturer, led by the G650ER, which holds the National Aeronautic Association's polar and westbound around-the-world speed records.

Our disciplined and consistent approach to new product development allows us to repeatedly introduce first-to-market capabilities that set industry standards for safety, performance, quality, speed and comfort. Product enhancement and development efforts include initiatives in advanced avionics, composites, flight-control and vision systems, acoustics, and cabin technologies.

Gulfstream designs, develops and manufactures aircraft in Savannah, Georgia, including all large-cabin models. The mid-cabin G280 is assembled by a non-U.S. partner. All models are outfitted in Gulfstream's U.S. facilities. In support of Gulfstream's growing aircraft portfolio and customer base, we have invested in our facilities and operations. At our Savannah campus, we added new purpose-built manufacturing facilities, increased aircraft service capacity, and opened a customer-support distribution center and a dedicated R&D campus.

We offer comprehensive support for the more than 2,900 Gulfstream aircraft in service around the world and operate the largest factory-owned service network in the industry. We continue to invest in these maintenance, repair and overhaul (MRO) facilities and inventory to accommodate fleet growth. We also operate a 24/7 year-round customer support center and offer on-call Gulfstream aircraft technicians ready to deploy around the world for customer service requirements under our Field and Airborne Support Team (FAST) rapid-response unit.

In addition to expanding the reach of Gulfstream's aircraft maintenance network outside the United States, Jet Aviation provides a comprehensive suite of innovative aircraft services for aircraft owners and operators around the world. With approximately 50 locations throughout North America, Europe, the Middle East and the Asia-Pacific region, our offerings include maintenance, aircraft management, charter, staffing and fixed-base operator (FBO) services.

Jet Aviation manages nearly 300 business aircraft globally on behalf of individuals and corporate owners. We operate a leading global FBO network and support all aircraft types with the full-range of maintenance services, including 24/7 global aircraft-on-ground support. We also operate one of the world's largest custom completion and refurbishment centers for both narrow- and wide-body aircraft and perform modifications, upgrades and lifecycle sustainment support for various government fleets. We continue to grow our global footprint through acquisitions, expansions and significant renovations in key business-aviation markets.

The following map demonstrates the broad reach of our combined Gulfstream and Jet Aviation services network, including authorized service centers:

The Aerospace segment is committed to sustainability and the reduction of aviation's carbon footprint. In support of this strategy, Gulfstream and Jet Aviation offer sustainable aviation fuel through our combined services network and lead the industry in total gallons supplied to the business jet market. Furthermore, we offer carbon offset credits to our customers, enabling them to operate aircraft on a carbon-neutral basis.

Revenue for the Aerospace segment was 21% of our consolidated revenue in 2020, 25% in 2019 and 23% in 2018. Revenue by major products and services was as follows:

Year Ended December 31	2020	2019	2018
Aircraft manufacturing	$ 6,115	$ 7,541	$ 6,262
Aircraft services and completions	1,960	2,260	2,193
Total Aerospace	$ 8,075	$ 9,801	$ 8,455

MARINE SYSTEMS

Our Marine Systems segment is the leading designer and builder of nuclear-powered submarines and a leader in surface combatants and auxiliary ship design and construction for the U.S. Navy. We also provide maintenance, modernization and lifecycle support services for Navy ships and maintain the most sophisticated marine engineering expertise in the world to support future capabilities. Our ability to design, build and maintain our nation's most technologically sophisticated warships is a critical element of the U.S. defense industrial base. In addition to Navy ships, we design and build ocean-going Jones

Act ships for commercial customers. Marine Systems consists of three business units — Electric Boat, Bath Iron Works and NASSCO.

In support of our Navy customer's significant increase in demand for submarines and surface ships, we are making substantial investments to expand our facilities, grow and train our workforce, and support our supply chain, particularly in our submarine business. The resulting increase in capacity and capabilities will support the unprecedented growth expected in our shipbuilding business, especially submarines, for the next two decades.

Electric Boat is the prime contractor and lead shipyard on all Navy nuclear-powered submarine programs. The business is responsible for all aspects of design and engineering and leads the construction of both the Virginia-class attack submarine and the Columbia-class ballistic-missile submarine.

The Navy procures Virginia-class submarines in multi-boat blocks, currently at a two-per-year construction rate. We are currently working on Blocks IV and V in the program, with 18 Virginia-class submarines in our backlog scheduled for delivery through 2029. Eight of the boats in Block V include the Virginia Payload Module (VPM), an 84-foot Electric Boat-designed-and-built hull section that adds four additional payload tubes, more than tripling the strike capacity of these submarines and providing unique capabilities to support special missions.

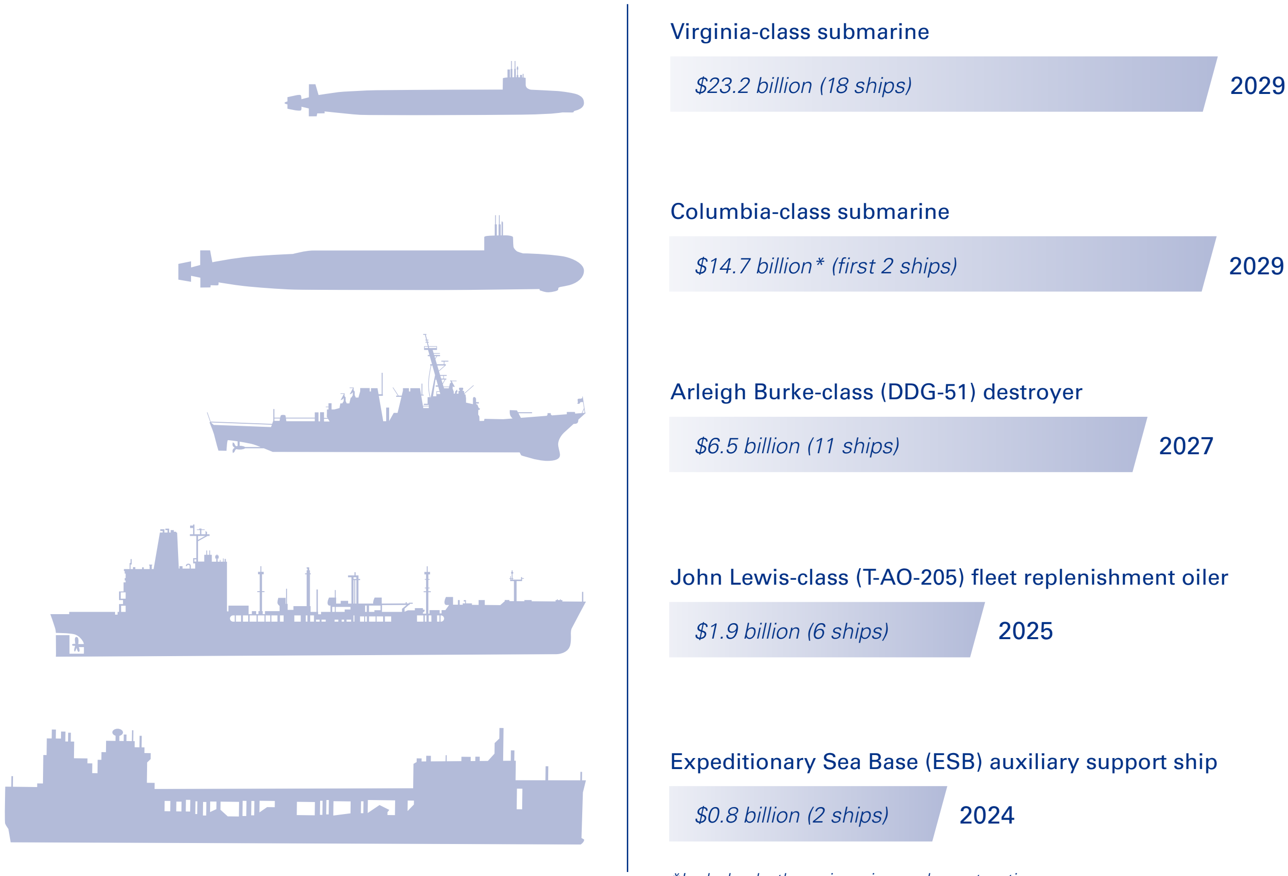
The Navy's Columbia-class ballistic-missile submarine is a 12-boat program that the Navy considers its top priority. These submarines will provide strategic deterrent capabilities for decades, with the first boat delivering in 2027 to begin replacement of the current Ohio-class ballistic-missile submarine fleet as it reaches the end of its service life. Construction is scheduled to continue for two decades, and the value of the Navy's program of record is in excess of $110 billion. To mitigate risk, the submarine's design was more than 80% complete at the time we began construction of the first boat, nearly twice as mature as any other Navy submarine program at the start of construction.

We are investing $1.8 billion of capital in expanded and modernized facilities at Electric Boat to support the growth in submarine construction. Our expenditures peaked in 2020, and we will have completed a majority of these investments by the end of 2021. Equal to the commitment of capital is our commitment to our workforce, which is on track to grow approximately 30% over the next decade, particularly in support of Columbia-class production. To reach our objective, we continue to invest in the training and tools necessary for our employees to be prepared to deliver these next-generation submarines to the Navy on time and on budget. We are also working with our network of more than 3,000 suppliers — mostly small businesses — to provide for concurrent production of the two submarine programs.

Bath Iron Works builds the Arleigh Burke-class (DDG-51) guided-missile destroyers and manages modernization and lifecycle support for the class. We have a total of 11 ships in backlog scheduled for delivery through 2027. Bath Iron Works is also the hull, mechanical and electrical (HM&E) prime contractor and lifecycle support provider for the Zumwalt-class (DDG-1000) guided-missile destroyer program. We expect to complete our work on the third and final ship of this class in 2021.

NASSCO specializes in Navy auxiliary and support ships and is currently building the Expeditionary Sea Base (ESB), which serves as a forward-staging base, and the John Lewis-class (T-AO-205) fleet replenishment oiler. Work on the two ESBs in backlog will continue into 2024, while the initial ships in the T-AO-205 program have deliveries planned into 2025. NASSCO has also designed and built crude oil and product tankers and container and cargo ships for commercial customers, satisfying Jones Act requirements that ships carrying cargo between U.S. ports be built in U.S. shipyards.

On December 31, 2020, backlog for our major ship construction programs and the scheduled final delivery date of ships currently in backlog were as follows:



*Includes both engineering and construction

In addition to design and construction activities, our Marine Systems segment provides comprehensive post-delivery services to extend the service life of these and other Navy ships. NASSCO conducts full-service maintenance and surface-ship repair operations in Navy fleet concentration areas in San Diego, California; Norfolk, Virginia; Mayport, Florida; and Bremerton, Washington. Electric Boat provides submarine maintenance and modernization services in a variety of U.S. locations, and Bath Iron Works provides lifecycle support services for Navy surface ships in both U.S. and overseas ports. In support of allied navies, we offer program management, planning, engineering and design support for submarine and surface-ship construction programs.

Revenue for the Marine Systems segment was 26% of our consolidated revenue in 2020, 23% in 2019 and 24% in 2018. Revenue by major products and services was as follows:

Year Ended December 31	2020	2019	2018
Nuclear-powered submarines	$ 6,938	$ 6,254	$ 5,712
Surface ships	2,055	1,912	1,872
Repair and other services	986	1,017	918
Total Marine Systems	$ 9,979	$ 9,183	$ 8,502

COMBAT SYSTEMS

Our Combat Systems segment is a premier manufacturer and integrator of land combat solutions worldwide, including wheeled and tracked combat vehicles, weapons systems and munitions. The segment consists of three business units — Land Systems, European Land Systems (ELS), and Ordnance and Tactical Systems (OTS).

Combat Systems creates long-term value through operational excellence — high-quality, on-schedule and on-budget performance — combined with investments in innovative technologies that modernize existing platforms and develop next-generation capabilities to meet our customers' rapidly evolving requirements. We maintain our market-leading position by focusing on innovation, affordability and speed to market to deliver increased survivability, performance and lethality on the battlefield. Our large installed base of wheeled and tracked vehicles around the world and expertise gained from research, engineering and production programs position us well for modernization programs, support and sustainment services, and future development programs.

Land Systems is the sole-source producer of two foundational products central to the U.S. Army's warfighting capabilities — the M1A2 Abrams main battle tank and Stryker wheeled combat vehicle. Both of these platforms are critical to the multi-domain, joint war fight envisioned on the battlefield of the future.

We are maximizing the effectiveness and lethality of the Army's tank fleet with next-generation Abrams upgrades, providing technological advancements in communications, power generation, fuel efficiency, optics and armor. Even as we are delivering this modernized platform, we are developing additional advanced capabilities for the Abrams tank, including incorporating next-generation electronic architecture technology that will allow this platform to adapt and incorporate transformative capabilities into the future. We are also upgrading Abrams tanks for several non-U.S. partners.

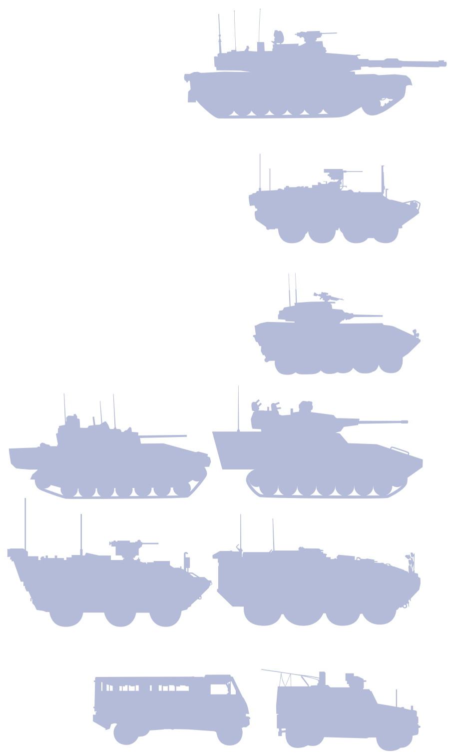
The Stryker is an eight-wheeled, medium-weight combat vehicle that combines lethality, mobility, survivability and stealth. Land Systems continues to develop upgrades and enhancements to this highly versatile and combat-proven platform to address the Army's evolving operational needs. We are fielding a new generation Stryker that includes the double-V-hull (DVH) for survivability, increased power, improved cross-country mobility and an advanced digital, in-vehicle network. The first of nine brigades began fielding the A-1 platform upgrade during 2020, and we are coordinating with the Army for next-generation upgrades to this platform. Leveraging our rapid prototyping expertise and customer intimacy, we continue to expand the mission capabilities of this platform, including a 30mm weapon system, an air defense mission package (M-SHORAD), state-of-the-art electronic warfare suite, and high-energy laser and command post options.

Combat Systems provides similar capabilities for U.S. allies through export opportunities and through our operations in several countries around the world, including Canada, the United Kingdom, Spain, Switzerland, Austria and Germany. As a result, we have a market-leading position in light armored vehicles (LAVs) with approximately 14,000 of the high-mobility, versatile Pandur, Piranha and other LAVs in service worldwide.

Land Systems is producing the British Army's AJAX armored fighting vehicle, a next-generation, medium-weight tracked combat vehicle. With six variants, the AJAX family of vehicles offers advanced electronic architecture and proven technology for an unparalleled balance of survivability, lethality and mobility, along with high reliability for a vehicle in its weight class. In addition, Land Systems is producing 360 new LAVs in eight variants for the Canadian Army, as well as upgrading its existing fleet.

ELS is producing and upgrading Piranha vehicles, a premier 8x8 armored combat vehicle, around the world. We are currently providing Piranha V vehicles for several countries, including Denmark, Romania and most recently Spain. Additionally, we provide mobile bridge systems with payloads ranging from 100 kilograms to 100 tons to customers worldwide. We offer the ASCOD, a highly versatile tracked combat vehicle with multiple versions, including the Spanish Pizarro and the Austrian Ulan. ELS also offers Duro and Eagle tactical vehicles in a range of options and weight classes and is currently producing these vehicles for Denmark, Switzerland and Germany, while providing a full range of product support for the German armed forces.

On December 31, 2020, the installed base for our major vehicle programs, as well as the quantity and scheduled final delivery date of vehicles and vehicle upgrades currently in backlog were as follows:



Vehicle	**Installed Base**		**Vehicle Backlog**	
Model	*Vehicle Quantity*	*Countries*	*Vehicle Quantity*	*Final Delivery*
ABRAMS Main Battle Tank	*4,389*	*7*	*725*	*2023*
STRYKER Armored Vehicle	*3,362*	*2*	*208*	*2022*
Light Armored Vehicle (LAV)	*6,425*	*7*	*809*	*2025*
AJAX / ASCOD Tracked Vehicle	*367*	*3*	*616*	*2024*
PANDUR / PIRANHA Armored Vehicle	*7,332*	*25*	*646*	*2027*
DURO / EAGLE Wheeled Vehicle	*2,136*	*3*	*1,982*	*2024*

Complementing these military-vehicle offerings, OTS designs, develops and produces a comprehensive array of sophisticated weapons systems. For ground forces, we manufacture M2/M2-A1 heavy machine guns and MK19/MK47 grenade launchers. We also produce next-generation weapons systems for shipboard and airborne applications, including high-speed Gatling guns for all U.S. fighter aircraft, including the F-35 Joint Strike Fighter.

OTS's munitions portfolio covers the full breadth of naval, air and ground forces applications across all calibers and weapons platforms for the U.S. government and its non-U.S. partners. Globally, we maintain a market-leading position in the supply of Hydra-70 rockets, general purpose bombs and bomb bodies, large-caliber tank ammunition, medium-caliber ammunition, military propellants, mortar, and artillery projectiles. OTS is also the systems integrator for the next generation of artillery solutions in support of the Army's Indirect Fire Modernization objectives. Additionally, OTS maintains a leading position providing missile subsystems in support of U.S. tactical and strategic missiles, provisioning both legacy and next-generation missiles with critical aerostructures, control actuators, high-performance warheads and cutting-edge hypersonic rocket cases.

Revenue for the Combat Systems segment was 19% of our consolidated revenue in 2020, 18% in 2019 and 17% in 2018. Revenue by major products and services was as follows:

Year Ended December 31	2020	2019	2018
Military vehicles	$ 4,687	$ 4,620	$ 4,027
Weapons systems, armament and munitions	1,991	1,906	1,798
Engineering and other services	545	481	416
Total Combat Systems	$ 7,223	$ 7,007	$ 6,241

TECHNOLOGIES

Our Technologies segment provides a full spectrum of services, technologies and products to an expanding market that increasingly seeks solutions combining leading-edge electronic hardware with specialized software. The segment is organized into two business units — Information Technology (GDIT) and Mission Systems. Together they serve a wide range of military, intelligence and federal civilian customers with a diverse portfolio that includes:

- information technology (IT) solutions and mission-support services;
- mobile communication, computers and command-and-control (C4) mission systems; and
- intelligence, surveillance and reconnaissance (ISR) solutions.

This market has experienced a series of structural shifts in recent years, and our response to those trends has further solidified our position as a market leader. Over the past decade, the Department of Defense (DoD), the intelligence community and federal civilian agencies have increasingly prioritized technology solutions as a critical element of their missions. Cloud computing capabilities, cyber security threats, and advancements in artificial intelligence have transformed technology resources from short-cycle back-office support functions to a strategic priority for this customer community. The result is a significant increase in federal IT modernization and technology investments in recent years and a shift to large-scale, end-to-end, highly engineered solutions that require critical mass and a broad array of technology services and hardware offerings to meet these customer demands. The recent Coronavirus (COVID-19) pandemic has only accelerated these trends, which have included an expansion of remote connectivity and added urgency to required technology investments.

These market shifts have resulted in significant consolidation in the industry in recognition of the scale and breadth of capabilities required to meet this growing demand. In response to these market dynamics, in 2015 we combined our C4 and ISR operations into a single Mission Systems business unit, and in 2018 we acquired CSRA, Inc. (CSRA), which doubled the size of our IT services business, brought critical capabilities and repositioned the segment as a leader in this market.

During the three years following the acquisition of CSRA, GDIT and Mission Systems have undergone considerable portfolio shaping and realignment. At the top level, the two businesses share the same defense, intelligence and federal civilian customer base and increasingly go to market together to meet the ever-changing information-systems and mission-support needs of these customers. In addition, with the convergence of digital technologies, we are now seeing considerable commonality and significant complementary pull-through in their core offerings and solution sets, particularly in the areas of cloud computing; artificial intelligence and machine learning (AI/ML); big data analytics; development, security and operations (DevSecOps); software-defined networks; and everything as-a-Service (XaaS). Consequently, we have reorganized these two business units into a single operating segment to reflect the evolving strategic focus and the way we are running the business.

With a network of more than 90 global partners, the segment develops solutions that keep its customers at the leading edge of technology in support of their missions. The segment's highly skilled workforce is one of its key differentiators and comprises approximately 40,000 employees, including technologists, engineers, mission experts and cleared personnel dedicated to solving the toughest security and technology challenges facing the United States and its allies.

GDIT modernizes large-scale IT enterprises and deploys the latest technologies to optimize and protect customer networks, data and information. Operating hundreds of complex digital modernization programs across the federal government, GDIT's expansive portfolio includes cloud strategy and services, cybersecurity, network modernization, managed services, AI, application development and high-performance computing.

Mission Systems offers solutions across all domains and produces a unique combination of products and capabilities that are purpose-built for essential C4ISR and cybersecurity applications. Our technology and products are often built into platforms and integrated systems on which our customers rely. The business's portfolio includes prime contract programs to provide innovative defense-electronics solutions as well as subcontract efforts that enhance the capabilities of large-scale land, air, sea and space platforms.

The Technologies segment leverages its scale, partnerships and deep knowledge of its customers' missions and challenges to bring innovation to those customers across a portfolio of thousands of contracts. While no individual contract is material to the segment's results, the following highlights provide a sampling of the value of this combined business. GDIT has significantly expanded its cloud footprint and now holds leading positions on two of the three pillars of the Pentagon's enterprise cloud migration strategy: milCloud 2.0, which provides defense agencies and military commands secure on-government-premise hybrid cloud services, and Defense Enterprise Office Systems (DEOS), which secures and streamlines email and collaborative tools across the DoD enterprise.

We apply AI to expand the human capacity to make better decisions and implement smarter actions as we automate, secure and enhance our customer's operations. For the Department of Veterans Affairs (VA), GDIT leverages managed services and AI to accelerate veteran benefits claims processing, develops applications and software to improve the veteran user experience, and provides on-demand 24/7/365 IT support to more than 500,000 VA personnel nationwide. In the federal civilian sector, GDIT supports some of the fastest supercomputers in the world, responsible for biomedical research, weather forecasting and climate modeling.

To adapt to a constantly evolving threat landscape, GDIT embeds cyber solutions into every aspect of digital modernization. More than 3,000 cyber professionals support cyber projects across 30 agencies in the federal government.

Mission Systems develops and manufactures combat-proven global positioning systems (GPS) for the U.S. Army. This includes capabilities to ensure reliable satellite connectivity in any location and a suite of Assured Position, Navigation and Timing capabilities, which provide military forces the ability to synchronize communications utilizing trusted data, even when GPS signals are degraded or denied. We are working with our Army customer to adapt elements of 5G technology to address battlefield realities such as jamming, spoofing, cyberattacks and lack of ground connectivity. We also provide similar capabilities to non-U.S. customers, including Canada and the United Kingdom.

On the platform side, we have a more than 60-year legacy of providing advanced fire-control systems for the Navy's submarine programs. We are developing and integrating commercial off-the-shelf software and hardware upgrades to improve the tactical control capabilities for several submarine classes, including the Columbia and U.K. Dreadnought ballistic-missile submarines.

Revenue for the Technologies segment was 34% of our consolidated revenue in 2020 and 2019 and 36% in 2018. Revenue by major products and services was as follows:

Year Ended December 31	2020	2019	2018
IT services	$ 7,892	$ 8,422	$ 8,269
C4ISR solutions	4,756	4,937	4,726
Total Technologies	$ 12,648	$ 13,359	$ 12,995

CUSTOMERS

In 2020, 69% of our consolidated revenue was from the U.S. government, 13% was from U.S. commercial customers, 9% was from non-U.S. commercial customers and the remaining 9% was from non-U.S. government customers.

U.S. GOVERNMENT

Our primary customer is the DoD. We also contract with other U.S. government customers, including the intelligence community and the Departments of Homeland Security and Health and Human Services. Our revenue from the U.S. government was as follows:

Year Ended December 31	2020	2019	2018
DoD	$ 20,840	$ 19,864	$ 17,674
Non-DoD	4,726	5,254	5,306
Foreign Military Sales (FMS)*	737	689	626
Total U.S. government	$ 26,303	$ 25,807	$ 23,606
% of total revenue	69 %	66 %	65 %

* In addition to our direct non-U.S. sales, we sell to non-U.S. governments through the FMS program. Under the FMS program, we contract with and are paid by the U.S. government, and the U.S. government assumes the risk of collection from the non-U.S. government customer.

Our U.S. government revenue is derived from fixed-price, cost-reimbursement and time-and-materials contracts. Our production contracts are primarily fixed-price. Under these contracts, we agree to perform a specific scope of work for a fixed amount. Contracts for research, engineering, repair and maintenance, and other services are typically cost-reimbursement or time-and-materials. Under cost-reimbursement contracts, the customer reimburses contract costs incurred and pays a fixed, incentive or award-based fee. These fees are determined by our ability to achieve targets set in the contract, such as cost, quality, schedule and performance. Under time-and-materials contracts, the customer pays a fixed hourly rate for direct labor and generally reimburses us for the cost of materials.

Of our U.S. government revenue, fixed-price contracts accounted for 59% in 2020 and 2019 and 56% in 2018; cost-reimbursement contracts accounted for 35% in 2020 and 2019 and 38% in 2018; and time-and-materials contracts accounted for 6% in 2020, 2019 and 2018.

For information on the advantages and disadvantages of each of these contract types, see Note B to the Consolidated Financial Statements in Item 8.

U.S. COMMERCIAL

Our U.S. commercial revenue was $4.9 billion in 2020, $6 billion in 2019 and $4.8 billion in 2018, which represented 13%, 15% and 13% of our consolidated revenue in each of the respective years. The majority of this revenue was for business jet aircraft and related services where our customer base consists of individuals and public and privately held companies across a wide range of industries.

NON-U.S.

Our revenue from non-U.S. government and commercial customers was $6.7 billion in 2020, $7.6 billion in 2019 and $7.8 billion in 2018, which represented 18%, 19% and 22% of our consolidated revenue in each of the respective years.

We conduct business with customers around the world. Our non-U.S. defense subsidiaries maintain long-term relationships with their customers and have established themselves as principal regional suppliers and employers, providing a broad portfolio of products and services.

Our non-U.S. commercial revenue consists primarily of business jet aircraft exports and worldwide aircraft services. While the installed base of aircraft is concentrated in North America, orders from customers outside North America represent a significant portion of our aircraft business with approximately 60% of the Aerospace segment's aircraft backlog on December 31, 2020.

COMPETITION

Several factors determine our ability to compete successfully in the defense and business-aviation markets. While customers' evaluation criteria vary, the principal competitive elements include:

- the technical excellence, reliability, safety and cost competitiveness of our products and services;
- our ability to innovate and develop new products and technologies that improve mission performance and adapt to dynamic threats;
- successful program execution and on-time delivery of complex, integrated systems;
- our global footprint and accessibility to customers;
- the reputation and customer confidence derived from past performance; and
- the successful management of customer relationships.

DEFENSE MARKET COMPETITION

The U.S. government contracts with numerous domestic and non-U.S. companies for products and services. We compete against other contractors as well as smaller companies that specialize in a particular technology or capability. Outside the United States, we compete with global defense contractors' exports and the offerings of private and state-owned defense manufacturers. Our Marine Systems segment has one primary competitor with which it also partners on the Virginia-class and Columbia-class submarine programs. Our Combat Systems segment competes with a large number of U.S. and non-U.S. businesses. Our Technologies segment competes with many companies, from large government contracting and commercial technology companies to small niche competitors with specialized technologies or expertise. The operating cycle of many of our major programs can result in sustained periods of program continuity when we perform successfully.

We are involved in teaming and subcontracting relationships with some of our competitors. Competitions for major defense and other government contracting programs often require companies to form teams to bring together a spectrum of capabilities to meet the customer's requirements. Opportunities associated with these programs include roles as the program's integrator, overseeing and coordinating the efforts of all participants on a team, or as a provider of a specific component or subsystem.

BUSINESS JET AIRCRAFT MARKET COMPETITION

The Aerospace segment has several competitors for each of its Gulfstream products. Key competitive factors include aircraft safety, reliability and performance; comfort and in-flight productivity; service quality, global footprint and responsiveness; technological and new-product innovation; and price. We believe that Gulfstream competes effectively in all of these areas.

The Aerospace segment competes worldwide in the business jet aircraft services market primarily on the basis of quality, price and timeliness. While competition for each type of service varies somewhat, the segment faces a number of competitors of varying sizes for each of its offerings.

INTELLECTUAL PROPERTY

We develop technology, manufacturing processes and systems-integration practices. In addition to owning a large portfolio of proprietary intellectual property, we license some intellectual property rights to and from others. The U.S. government holds licenses to many of our patents developed in the performance of U.S. government contracts, and it may use or authorize others to use the inventions covered by these patents. Although these intellectual property rights are important to the operation of our business, no existing patent, license or other intellectual property right is of such importance that its loss or termination would have a material impact on our business.

HUMAN CAPITAL MANAGEMENT

Our more than 100,000 employees are a community dedicated to our ethos of transparency, trust, honesty and alignment. Every day, these four values drive how we operate our business; govern how we interact with each other and our customers, partners, and suppliers; guide the way that we treat our workforce; and determine how we connect with our communities. Our commitment to ethical business practices is outlined in our Standards of Business Ethics and Conduct, commonly known as our Blue Book. Each employee is asked to acknowledge receipt, understanding of and compliance with our standards.

Due to the highly specialized nature of our business, we are required to hire and train skilled and qualified personnel to design and build the products and perform the services required by our customers. We recognize that our success as a company depends on our ability to attract, develop and retain our workforce. As such, we promote the health, welfare and safety of our employees. Part of our responsibility includes treating all employees with dignity and respect and providing them with fair, market-based, competitive and equitable compensation. We recognize and reward the performance of our employees in line with our pay-for-performance philosophy and provide a comprehensive suite of benefit options that enables our employees and their dependents to live healthy and productive lives.

Safety in our workplaces is paramount. Across our businesses, we take measures to prevent workplace hazards, encourage safe behaviors and enforce a culture of continuous improvement to ensure our processes help reduce incidents and illnesses and comply with governing health and safety laws. This was never more important than in 2020 given the challenges presented by the COVID-19 pandemic.

We are committed to promoting diversity of thought, experience, perspectives, backgrounds and capabilities to drive innovation and strengthen the solutions we deliver to our customers because we believe the results lead to a better outcome. We proudly support a culture of inclusion and encourage a work environment that respects diverse opinions, values individual skills and celebrates the unique experiences our employees bring. We are dedicated to equal employment opportunity that fosters and supports diversity in a principled, productive and inclusive work environment. We stand for basic universal human rights, including that employment must be voluntary. We track, measure and analyze our workforce trends to establish accountability for continuing to cultivate diverse and inclusive environments across our businesses and at every level of our company.

Our values motivate us to promote strong workplace practices with opportunities for development and training. Our training and development efforts focus on ensuring that the workforce is appropriately trained on critical job skills as well as leadership behaviors that are consistent with our ethos. We conduct rigorous succession planning exercises to ensure that key positions have the appropriate level of bench strength to provide for future key positions and leadership transitions. We listen to our workforce to assess areas of concern and levels of engagement.

2020 WORKFORCE STATISTICS

- Approximately 85% of our employees are based in the United States, of which roughly 70% are white, 30% are people of color and 20% are veterans of the U.S. armed forces. The remaining 15% of our workforce is based internationally in over 65 countries with the primary concentrations in North America and Europe.
- Our global workforce is approximately 77% male and 23% female with our senior leadership teams across the business represented by 75% males and 25% females. During 2020, the diversity profile of our workforce continued to improve across our businesses as we hired approximately 15,000 individuals of which 72% were male and 28% were female. For our 2020 U.S.-based hires, approximately 62% were white and 38% were people of color.

RAW MATERIALS AND SUPPLIERS

We depend on suppliers and subcontractors for raw materials, components and subsystems. Our U.S. government customer is a supplier on some of our programs. These supply networks can experience price fluctuations and capacity constraints, which can put pressure on our costs. Effective management and oversight of suppliers and subcontractors is an important element of our successful performance. We sometimes rely on only one or two sources of supply that, if disrupted, could impact our ability to meet our customer commitments. We attempt to mitigate risks with our suppliers by entering into long-term agreements and leveraging company-wide agreements to achieve economies of scale and by negotiating flexible pricing terms in our customer contracts. We have not experienced, and do not foresee, significant difficulties in obtaining the materials, components or supplies necessary for our business operations.

REGULATORY MATTERS

U.S. GOVERNMENT CONTRACTS

U.S. government contracts are subject to procurement laws and regulations. The Federal Acquisition Regulation (FAR) and the Cost Accounting Standards (CAS) govern the majority of our contracts. The FAR mandates uniform policies and procedures for U.S. government acquisitions and purchased services. Also, individual agencies can have acquisition regulations that provide implementing language for the FAR or that supplement the FAR. For example, the DoD implements the FAR through the Defense Federal Acquisition Regulation Supplement (DFARS). For all federal government entities, the FAR regulates the phases of any product or service acquisition, including:

- acquisition planning;
- competition requirements;
- contractor qualifications;
- protection of source selection and supplier information; and
- acquisition procedures.

In addition, the FAR addresses the allowability of our costs, while the CAS addresses the allocation of those costs to contracts. The FAR and CAS subject us to audits and other government reviews covering issues such as cost, performance, internal controls and accounting practices relating to our contracts.

NON-U.S. REGULATORY

Our non-U.S. operations are subject to the applicable government regulations and procurement policies and practices, as well as U.S. policies and regulations. We are also subject to regulations governing investments, exchange controls, repatriation of earnings and import-export control.

BUSINESS JET AIRCRAFT

The Aerospace segment is subject to Federal Aviation Administration (FAA) regulation in the United States and other similar aviation regulatory authorities internationally, including the Civil Aviation Administration of Israel (CAAI), the European Aviation Safety Agency (EASA) and the Civil Aviation Administration of China (CAAC). For an aircraft to be manufactured and sold, the model must receive a type certificate from the appropriate aviation authority, and each aircraft must receive a certificate of airworthiness. Aircraft outfitting and completions also require approval by the appropriate aviation authority, which is often accomplished through a supplemental type certificate. Aviation authorities can require changes to a specific aircraft or model type before granting approval. Maintenance facilities and charter operations must be licensed by aviation authorities as well.

ENVIRONMENTAL

We are subject to a variety of federal, state, local and foreign environmental laws and regulations. These laws and regulations cover the discharge, treatment, storage, disposal, investigation and remediation of materials, substances and wastes identified in the laws and regulations. We are directly or indirectly involved in environmental investigations or remediation at some of our current and former facilities and at third-party sites that we do not own but where we have been designated a potentially responsible party

(PRP) by the U.S. Environmental Protection Agency or a state environmental agency. As a PRP, we are potentially liable to the government or third parties for the cost of remediating contamination. In cases where we have been designated a PRP, we generally seek to mitigate these environmental liabilities through available insurance coverage and by pursuing appropriate cost-recovery actions. In the unlikely event that we are required to fully fund the remediation of a site, the current statutory framework would allow us to pursue contributions from other PRPs. We regularly assess our compliance status and management of environmental matters.

Operating and maintenance costs associated with environmental compliance and management of contaminated sites are a normal, recurring part of our operations. Historically, these costs have not been material. Environmental costs are often recoverable under our contracts with the U.S. government. Based on information currently available and current U.S. government policies relating to cost recovery, we do not expect continued compliance with environmental regulations to have a material impact on our results of operations, financial condition or cash flows. For additional information relating to the impact of environmental matters, see Note O to the Consolidated Financial Statements in Item 8.

AVAILABLE INFORMATION

We file reports and other information with the Securities and Exchange Commission (SEC) pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended. These reports and information include an annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and proxy statements. Free copies of these items are made available on our website (www.gd.com) as soon as practicable. The SEC maintains a website (www.sec.gov) that contains reports, proxy and information statements, and other information.

In addition to the information contained in this Form 10-K, information about the company can be found on our website and our Investor Relations website (investorrelations.gd.com). Our Investor Relations website contains a significant amount of information about the company, including financial information, our corporate governance principles and practices, and other information for investors. We encourage investors to visit our website, as we frequently update and post new information about our company, and it is possible that this information could be deemed to be material information.

References to our website and the SEC's website in this Form 10-K do not constitute, and should not be viewed as, incorporation by reference of the information contained on, or available through, the websites. The information should not be considered a part of this Form 10-K, unless otherwise expressly incorporated by reference.

ITEM 1A. RISK FACTORS

An investment in our common stock or debt securities is subject to risks and uncertainties. Investors should consider the following factors, in addition to the other information contained in this Annual Report on Form 10-K, before deciding whether to purchase our securities.

Investment risks can be market-wide as well as unique to a specific industry or company. The market risks faced by an investor in our stock are similar to the uncertainties faced by investors in a broad range of industries. There are some risks that apply more specifically to our business.

Our revenue is concentrated with the U.S. government. This customer relationship involves some specific risks. In addition, our sales to non-U.S. customers expose us to different financial and legal risks. Despite the varying nature of our government and commercial operations and the markets they serve, each segment shares some common risks, such as the ongoing development of high-technology products and the price, availability and quality of commodities and subsystems.

Risks Relating to Our Business and Industry

The U.S. government provides a significant portion of our revenue. In 2020, approximately 70% of our consolidated revenue was from the U.S. government. Levels of U.S. defense spending are driven by threats to national security. Competing demands for federal funds can pressure various areas of spending. Decreases in U.S. government defense and other spending or changes in spending allocation or priorities could result in one or more of our programs being reduced, delayed or terminated, which could impact our financial performance.

For additional information relating to U.S. budget matters, see the Business Environment section of Management's Discussion and Analysis of Financial Condition and Results of Operations in Item 7.

U.S. government contracts are not always fully funded at inception, and any funding is subject to disruption or delay. Our U.S. government revenue is funded by agency budgets that operate on an October-to-September fiscal year. Early each calendar year, the President of the United States presents to the Congress the budget for the upcoming fiscal year. This budget proposes funding levels for every federal agency and is the result of months of policy and program reviews throughout the executive branch. For the remainder of the year, the Appropriations and Authorization Committees of the Congress review the President's budget proposals and establish the funding levels for the upcoming fiscal year. Once these levels are enacted into law, the Executive Office of the President administers the funds to the agencies.

There are two primary risks associated with the U.S. government budget cycle. First, the annual process may be delayed or disrupted. If the annual budget is not approved by the beginning of the government fiscal year, portions of the U.S. government can shut down or operate under a continuing resolution that maintains spending at prior-year levels, which can impact funding for our programs and timing of new awards. Second, the Congress typically appropriates funds on a fiscal-year basis, even though contract performance may extend over many years. Future revenue under existing multi-year contracts is conditioned on the continuing availability of congressional appropriations. Changes in appropriations in subsequent years may impact the funding available for these programs. Delays or changes in funding can impact the timing of available funds or lead to changes in program content.

Our U.S. government contracts are subject to termination rights by the customer. U.S. government contracts generally permit the government to terminate a contract, in whole or in part, for convenience. If a contract is terminated for convenience, a contractor usually is entitled to receive payments for its allowable costs incurred and the proportionate share of fees or earnings for the work performed. The government may also terminate a contract for default in the event of a breach by the contractor. If a contract is terminated for default, the government in most cases pays only for the work it has accepted. The termination of multiple or large programs could have a material adverse effect on our future revenue and earnings.

Government contractors operate in a highly regulated environment and are subject to audit by the U.S. government. Numerous U.S. government agencies routinely audit and review government contractors. These agencies review a contractor's performance under its contracts and compliance with applicable laws, regulations and standards. The U.S. government also reviews the adequacy of, and compliance with, internal control systems and policies, including the contractor's purchasing, property, estimating, material, earned value management and accounting systems. In some cases, audits may result in delayed payments or contractor costs not being reimbursed or subject to repayment. If an audit or investigation were to result in allegations against a contractor of improper or illegal activities, civil or criminal penalties and administrative sanctions could result, including termination of contracts, forfeiture of profits, suspension of payments, fines and suspension or prohibition from doing business with the U.S. government. In addition, reputational harm could result if allegations of impropriety were made. In some cases, audits may result in disputes with the respective government agency that can result in negotiated settlements, arbitration or litigation. Moreover, new laws, regulations or standards, or changes to existing ones, can increase our performance and compliance costs and reduce our profitability.

Our Aerospace segment is subject to changing customer demand for business aircraft. The business jet market is driven by the demand for business-aviation products and services by corporate, individual and government customers in the United States and around the world. The Aerospace segment's results also depend on other factors, including general economic conditions, the availability of credit, pricing pressures and trends in capital goods markets. In addition, if customers default on existing contracts and the contracts are not replaced, the segment's anticipated revenue and profitability could be reduced materially.

Earnings and margin depend on our ability to perform on our contracts. When agreeing to contractual terms, our management team makes assumptions and projections about future conditions and events. The accounting for our contracts and programs requires assumptions and estimates about these conditions and events. These projections and estimates assess:

- the productivity and availability of labor;
- the complexity of the work to be performed;
- the cost and availability of materials and components; and
- schedule requirements.

If there is a significant change in one or more of these circumstances, estimates or assumptions, or if the risks under our contracts are not managed adequately, the profitability of contracts could be adversely affected. This could affect earnings and margin materially.

Earnings and margin depend in part on subcontractor and supplier performance. We rely on other companies to provide materials, components and subsystems for our products. Subcontractors also perform some of the services that we provide to our customers. We depend on these subcontractors and suppliers to meet our contractual obligations in full compliance with customer requirements and applicable law. Misconduct by subcontractors, such as a failure to comply with procurement regulations or engaging in unauthorized activities, may harm our future revenue and earnings. We manage our supplier base carefully to avoid or minimize customer issues. We sometimes rely on only one or two sources of supply that, if disrupted, could have an adverse effect on our ability to meet our customer commitments. Our ability to perform our obligations may be materially adversely affected if one or more of these suppliers is unable to provide the agreed-upon materials, perform the agreed-upon services in a timely and cost-effective manner, or engages in misconduct or other improper activities.

Our future success depends in part on our ability to develop new products and technologies and maintain a qualified workforce to meet the needs of our customers. Many of the products and services we provide involve sophisticated technologies and engineering, with related complex manufacturing and system-integration processes. Our customers' requirements change and evolve regularly. Accordingly, our future performance depends in part on our ability to continue to develop, manufacture and provide innovative products and services and bring those offerings to market quickly at cost-effective prices. Some new products, particularly in our Aerospace segment, must meet extensive and time-consuming regulatory requirements that are often outside our control and may result in unanticipated delays. Additionally, due to the highly specialized nature of our business, we must hire and retain the skilled and qualified personnel necessary to perform the services required by our customers. To the extent that the demand for skilled personnel exceeds supply, we could experience higher labor, recruiting or training costs in order to attract and retain such employees. If we were unable to develop new products that meet customers' changing needs and satisfy regulatory requirements in a timely manner or successfully attract and retain qualified personnel, our future revenue and earnings may be materially adversely affected.

Risks Relating to Our International Operations

Sales and operations outside the United States are subject to different risks that may be associated with doing business in foreign countries. In some countries there is increased chance for economic, legal or political changes, and procurement procedures may be less robust or mature, which may complicate the contracting process. Our non-U.S. operations may be sensitive to and impacted by changes in a foreign government's national policies and priorities, political leadership and budgets, which may be influenced by changes in threat environments, geopolitical uncertainties, volatility in economic conditions and other economic and political factors. Changes and developments in any of these matters or factors may occur suddenly and could impact funding for programs or delay purchasing decisions or customer payments. Non-U.S. transactions can involve increased financial and legal risks arising from foreign exchange rate variability and differing legal systems. Our non-U.S. operations are subject to U.S. and foreign laws and regulations, including laws and regulations relating to import-export controls, technology transfers, the Foreign Corrupt Practices Act (FCPA) and other anti-corruption laws, and the International Traffic in Arms Regulations (ITAR). An unfavorable event or trend in any one or more of these factors or a failure to comply with U.S. or foreign laws could result in administrative, civil or criminal liabilities, including suspension or debarment from government contracts or suspension of our export privileges, and could materially adversely affect revenue and earnings associated with our non-U.S. operations.

In addition, some non-U.S. government customers require contractors to enter into letters of credit, performance or surety bonds, bank guarantees and other similar financial arrangements. We may also be required to agree to specific in-country purchases, manufacturing agreements or financial support arrangements, known as offsets, that require us to satisfy investment or other requirements or face penalties. Offset requirements may extend over several years and could require us to team with local companies to fulfill these requirements. If we do not satisfy these financial or offset requirements, our future revenue and earnings may be materially adversely affected.

Risks Relating to Our Acquisitions and Similar Investment Activities

We have made and expect to continue to make investments, including acquisitions and joint ventures, that involve risks and uncertainties. When evaluating potential acquisitions and joint ventures, we make judgments regarding the value of business opportunities, technologies, and other assets and the risks and costs of potential liabilities based on information available to us at the time of the transaction. Whether we realize the anticipated benefits from these transactions depends on multiple factors, including our integration of the businesses involved; the performance of the underlying products, capabilities or technologies; market conditions following the acquisition; and acquired liabilities, including some that may not have been identified prior to the acquisition. These factors could materially adversely affect our financial results.

Changes in business conditions may cause goodwill and other intangible assets to become impaired. Goodwill represents the purchase price paid in excess of the fair value of net tangible and intangible assets acquired in a business combination. Goodwill is not amortized and remains on our balance sheet indefinitely unless there is an impairment or a sale of a portion of the business. Goodwill is subject to an impairment test on an annual basis or when circumstances indicate that the likelihood of an impairment is greater than 50%. Such circumstances include a significant adverse change in the business climate for one of our reporting units or a decision to dispose of a reporting unit or a significant portion of a reporting unit. We face some uncertainty in our business environment due to a variety of challenges, including changes in government spending. We may experience unforeseen circumstances that adversely affect the value of our goodwill or intangible assets and trigger an evaluation of the amount of the recorded goodwill and intangible assets. Future write-offs of goodwill or other intangible assets as a result of an impairment in the business could materially adversely affect our results of operations and financial condition.

Other Business and Operational Risks

Our business could be negatively impacted by cybersecurity events and other disruptions. We face various cybersecurity threats, including threats to our IT infrastructure and attempts to gain access to our proprietary or classified information, denial-of-service attacks, as well as threats to the physical security of our facilities and employees, and threats from terrorist acts. We also design and manage IT systems and products that contain IT systems for various customers. We generally face the same security threats for these systems as for our own internal systems. In addition, we face cyber threats from entities that may seek to target us through our customers, suppliers, subcontractors and other third parties with whom we do business. Accordingly, we maintain information security staff, policies and procedures for managing risk to our information systems, and conduct employee training on cybersecurity to mitigate persistent and continuously evolving cybersecurity threats. However, there can be no assurance that any such actions will be sufficient to prevent cybersecurity breaches, disruptions, unauthorized release of sensitive information or corruption of data.

We have experienced cybersecurity threats such as viruses and attacks targeting our IT systems. Such prior events have not had a material impact on our financial condition, results of operations or liquidity. However, future threats could, among other things, cause harm to our business and our reputation; disrupt our operations; expose us to potential liability, regulatory actions and loss of business; challenge our eligibility for future work on sensitive or classified systems for government customers; and impact our results of operations materially. Due to the evolving nature of these security threats, the potential impact of any future incident cannot be predicted. Our insurance coverage may not be adequate to cover all the costs related to cybersecurity attacks or disruptions resulting from such events.

Our business may continue to be negatively impacted by the Coronavirus (COVID-19) pandemic or other similar outbreaks. The COVID-19 pandemic has had, and could continue to have, a negative effect on our business, results of operations and financial condition. Effects include disruptions or restrictions on our employees' ability to work effectively, as well as temporary closures of our facilities or the facilities of our customers or suppliers, which can affect our ability to perform on our contracts. Resulting cost increases may not be fully recoverable on our contracts or adequately covered by insurance, which could impact our profitability. In addition, the COVID-19 pandemic has resulted in a widespread health crisis that is adversely affecting the economies and financial markets of many countries, which could result in a prolonged economic downturn that may negatively affect demand for our products and services. The imposition of quarantine and travel restrictions has affected and may continue to negatively affect portions of our business, particularly our Aerospace and Technologies segments. The extent to which COVID-19 continues to impact our business, results of operations and financial condition is highly uncertain and will depend on future developments. Such developments may include the geographic spread and duration of the virus, the severity of the disease and the actions that may be taken by various governmental authorities and other third parties in response to the pandemic. Other outbreaks of contagious diseases or other adverse public health developments in countries where we operate or our customers are located could similarly affect our business in the future.

FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements that are based on management's expectations, estimates, projections and assumptions. Words such as "expects," "anticipates," "plans," "believes," "scheduled," "outlook," "estimates," "should" and variations of these words and similar expressions are intended to identify forward-looking statements. Examples include projections of revenue, earnings, operating margin, segment performance, cash flows, contract awards, aircraft production, deliveries and backlog. In making these statements, we rely on assumptions and analyses based on our experience and perception of historical trends, current conditions and expected future developments as well as other factors we consider appropriate under the circumstances. We believe our estimates and judgments are reasonable based on information available to us at the time. Forward-looking statements are made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, as amended. These statements are not guarantees of future performance and involve risks and uncertainties that are difficult to predict. Therefore, actual future results and trends may differ materially from what is forecast in forward-looking statements due to a variety of factors, including, without limitation, the risk factors discussed in this Form 10-K.

All forward-looking statements speak only as of the date of this report or, in the case of any document incorporated by reference, the date of that document. All subsequent written and oral forward-looking statements attributable to General Dynamics or any person acting on our behalf are qualified by the cautionary statements in this section. We do not undertake any obligation to update or publicly release any revisions to forward-looking statements to reflect events, circumstances or changes in expectations after the date of this report. These factors may be revised or supplemented in subsequent reports on SEC Forms 10-Q and 8-K.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We operate in a number of offices, manufacturing plants, laboratories, warehouses and other facilities in the United States and abroad. We believe our facilities are adequate for our present needs and, given planned improvements and construction, expect them to remain adequate for the foreseeable future.

On December 31, 2020, our segments had material operations at the following locations:

- **Aerospace** – Van Nuys, California; West Palm Beach, Florida; Brunswick and Savannah, Georgia; Cahokia, Illinois; Westfield, Massachusetts; Teterboro, New Jersey; New York, New York; Tulsa, Oklahoma; Dallas, Texas; Dulles, Virginia; Appleton, Wisconsin; Sydney, Australia; Beijing and Shanghai, China; Mexicali, Mexico; Singapore; Basel, Switzerland; Farnborough, United Kingdom.

- **Marine Systems** – San Diego, California; Groton and New London, Connecticut; Jacksonville, Florida; Honolulu, Hawaii; Bath and Brunswick, Maine; Middletown and North Kingstown, Rhode Island; Norfolk and Portsmouth, Virginia; Bremerton, Washington; Mexicali, Mexico.
- **Combat Systems** – Anniston, Alabama; East Camden, Arkansas; Healdsburg, California; Crawfordsville, St. Petersburg and Tallahassee, Florida; Marion, Illinois; Saco, Maine; Sterling Heights, Michigan; Lima, Ohio; Eynon and Scranton, Pennsylvania; Garland, Texas; Joint Base Lewis-McChord, Washington; Vienna, Austria; La Gardeur, London and Valleyfield, Canada; Kaiserslautern, Germany; Madrid, Sevilla and Trubia, Spain; Kreuzlingen and Tägerwilen, Switzerland; Merthyr Tydfil, United Kingdom.
- **Technologies** – Daleville, Alabama; Scottsdale, Arizona; Orlando, Florida; Bossier City, Louisiana; Annapolis Junction, Maryland; Dedham, Pittsfield and Taunton, Massachusetts; Bloomington, Minnesota; Rensselaer, New York; Greensboro, North Carolina; Chesapeake and Marion, Virginia; multiple locations in Northern Virginia; Ottawa, Canada; Oakdale and St. Leonards, United Kingdom.

A summary of floor space by segment on December 31, 2020, follows:

(Square feet in millions)	Company-owned Facilities	Leased Facilities	Government-owned Facilities	Total
Aerospace	6.6	8.9	0.5	16.0
Marine Systems	8.3	4.3	—	12.6
Combat Systems	6.5	4.6	5.2	16.3
Technologies	3.1	7.8	0.9	11.8
Total square feet	24.5	25.6	6.6	56.7

ITEM 3. LEGAL PROCEEDINGS

For information relating to legal proceedings, see Note O to the Consolidated Financial Statements in Item 8.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

All of our executive officers are appointed annually. None of our executive officers were selected pursuant to any arrangement or understanding between the officer and any other person. The name, age, offices and positions of our executives held for at least the past five years as of February 9, 2021, were as follows (references are to positions with General Dynamics Corporation, unless otherwise noted):

Name, Position and Office	Age
Jason W. Aiken - Senior Vice President and Chief Financial Officer since January 2014; Vice President of the company and Chief Financial Officer of Gulfstream Aerospace Corporation, September 2011 - December 2013; Vice President and Controller, April 2010 - August 2011; Staff Vice President, Accounting, July 2006 - March 2010	48
Christopher J. Brady - Vice President of the company and President of General Dynamics Mission Systems since January 2019; Vice President, Engineering of General Dynamics Mission Systems, January 2015 - December 2018; Vice President, Engineering of General Dynamics C4 Systems, May 2013 - December 2014; Vice President, Assured Communications Systems of General Dynamics C4 Systems, August 2004 - May 2013	58
Mark L. Burns - Vice President of the company and President of Gulfstream Aerospace Corporation since July 2015; Vice President of the company since February 2014; President, Product Support of Gulfstream Aerospace Corporation, June 2008 - June 2015	61
Danny Deep - Vice President of the company and President of General Dynamics Land Systems since April 2020; Chief Operating Officer of General Dynamics Land Systems, September 2018 - April 2020; Vice President of General Dynamics Land Systems – Canada, January 2011 - September 2018	51
Gregory S. Gallopoulos - Senior Vice President, General Counsel and Secretary since January 2010; Vice President and Deputy General Counsel, July 2008 - January 2010; Managing Partner of Jenner & Block LLP, January 2005 - June 2008	61
M. Amy Gilliland - Senior Vice President of the company since April 2015; President of General Dynamics Information Technology since September 2017; Deputy for Operations of General Dynamics Information Technology, April 2017 - September 2017; Senior Vice President, Human Resources and Administration, April 2015 - March 2017; Vice President, Human Resources, February 2014 - March 2015; Staff Vice President, Strategic Planning, January 2013 - February 2014; Staff Vice President, Investor Relations, June 2008 - January 2013	46
Kevin M. Graney - Vice President of the company and President of Electric Boat Corporation since October 2019; Vice President of the company and President of NASSCO, January 2017 - October 2019; Vice President and General Manager of NASSCO, November 2013 - January 2017	56
Kimberly A. Kuryea - Senior Vice President, Human Resources and Administration since April 2017; Vice President and Controller, September 2011 - March 2017; Chief Financial Officer of General Dynamics Advanced Information Systems, November 2007 - August 2011; Staff Vice President, Internal Audit, March 2004 - October 2007	53
Christopher Marzilli - Executive Vice President, Technologies since December 2020; Executive Vice President, Information Technology and Mission Systems, January 2019 - December 2020; Vice President of the company and President of General Dynamics Mission Systems, January 2015 - December 2018; Vice President of the company and President of General Dynamics C4 Systems, January 2006 - December 2014; Senior Vice President and Deputy General Manager of General Dynamics C4 Systems, November 2003 - January 2006	61
William A. Moss - Vice President and Controller since April 2017; Staff Vice President, Internal Audit, May 2015 - March 2017; Staff Vice President, Accounting, August 2010 - May 2015	57

Phebe N. Novakovic - Chairman and Chief Executive Officer since January 2013; President and Chief Operating Officer, May 2012 - December 2012; Executive Vice President, Marine Systems, May 2010 - May 2012; Senior Vice President, Planning and Development, July 2005 - May 2010; Vice President, Strategic Planning, October 2002 - July 2005	63
Mark C. Roualet - Executive Vice President, Combat Systems, since March 2013; Vice President of the company and President of General Dynamics Land Systems, October 2008 - March 2013; Senior Vice President and Chief Operating Officer of General Dynamics Land Systems, July 2007 - October 2008	62
Robert E. Smith - Executive Vice President, Marine Systems, since July 2019; Vice President of the company and President of Jet Aviation, January 2014 - July 2019; Vice President and Chief Financial Officer of Jet Aviation, July 2012 - January 2014	53

PART II

ITEM 5. MARKET FOR THE COMPANY'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common stock is listed on the New York Stock Exchange under the trading symbol "GD."

On January 31, 2021, there were approximately 10,000 holders of record of our common stock.

For information regarding securities authorized for issuance under our equity compensation plans, see Note Q to the Consolidated Financial Statements contained in Item 8.

We did not make any unregistered sales of equity securities in 2020.

The following table provides information about our fourth-quarter purchases of equity securities that are registered pursuant to Section 12 of the Securities Exchange Act of 1934, as amended:

Period	Total Number of Shares	Average Price per Share	Total Number of Shares Purchased as Part of Publicly Announced Program	Maximum Number of Shares That May Yet Be Purchased Under the Program
Shares Purchased Pursuant to Share Buyback Program				
9/28/20-10/25/20	—	$ —	—	13,022,968
10/26/20-11/22/20	450,000	141.31	450,000	12,572,968
11/23/20-12/31/20	250,000	148.27	250,000	12,322,968
*Shares Delivered or Withheld Pursuant to Restricted Stock Vesting**				
9/28/20-10/25/20	—	—		
10/26/20-11/22/20	1,018	134.55		
11/23/20-12/31/20	90	151.38		
	701,108	$ 143.79		

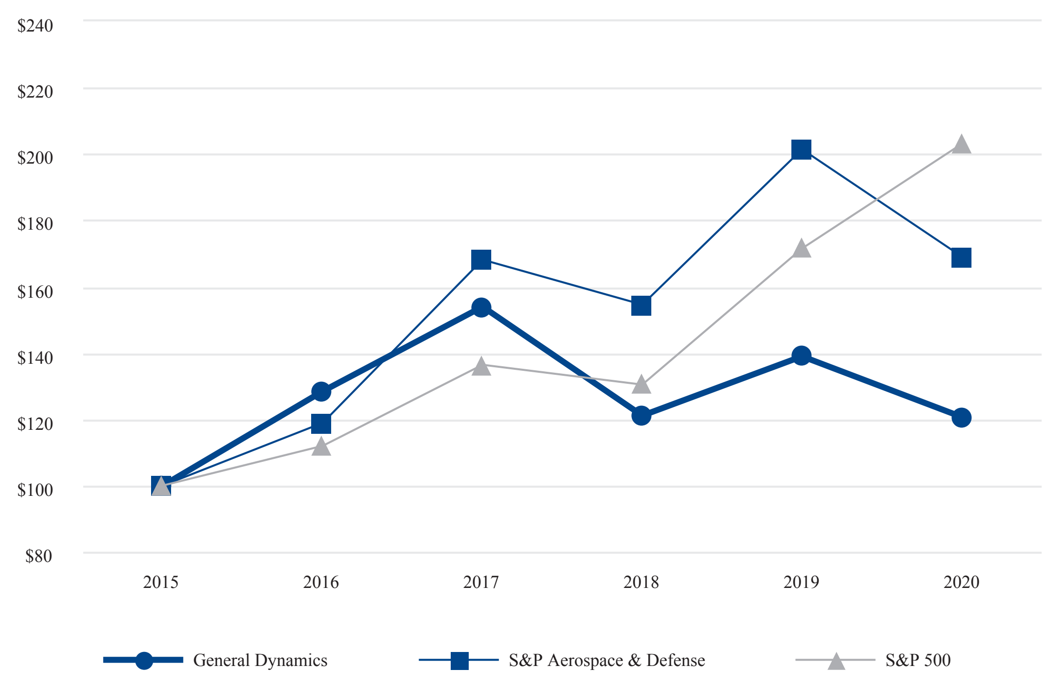
* Represents shares withheld by, or delivered to, us pursuant to provisions in agreements with recipients of restricted stock granted under our equity compensation plans that allow us to withhold, or the recipient to deliver to us, the number of shares with a fair value equal to the statutory tax withholding due upon vesting of the restricted shares.

On March 4, 2020, the board of directors authorized management to repurchase up to 10 million additional shares of the company's outstanding common stock on the open market. On December 31, 2020, 12.3 million shares remained authorized by our board of directors for repurchase.

For additional information relating to our purchases of common stock during the past three years, see Note M to the Consolidated Financial Statements in Item 8.

The following performance graph compares the cumulative total return to shareholders on our common stock, assuming reinvestment of dividends, with similar returns for the Standard & Poor's® 500 Index and the Standard & Poor's® Aerospace & Defense Index, both of which include General Dynamics.

Cumulative Total Return
Based on Investments of $100 Beginning December 31, 2015
(Assumes Reinvestment of Dividends)



ITEM 6. SELECTED FINANCIAL DATA

The following table presents selected historical financial data derived from the Consolidated Financial Statements and other company information for each of the five years presented. This information should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations in Item 7 and the Consolidated Financial Statements and the Notes thereto in Item 8.

(Dollars and shares in millions, except per-share and employee amounts)	2020	2019	2018	2017	2016
Summary of Operations					
Revenue	$37,925	$ 39,350	$36,193	$30,973	$30,561
Operating earnings	4,133	4,570	4,394	4,168	3,725
Operating margin	10.9%	11.6%	12.1%	13.5%	12.2%
Interest, net	(477)	(460)	(356)	(103)	(91)
Provision for income tax, net	(571)	(718)	(727)	(1,100)	(977)
Earnings from continuing operations	3,167	3,484	3,358	2,977	2,679
Return on sales (a)	8.4%	8.9%	9.3%	9.6%	8.8%
Discontinued operations, net of tax	—	—	(13)	—	(107)
Net earnings	3,167	3,484	3,345	2,977	2,572
Diluted earnings per share:					
Continuing operations	11.00	11.98	11.22	9.77	8.64
Net earnings	11.00	11.98	11.18	9.77	8.29
Cash Flows					
Net cash provided by operating activities	$ 3,858	$ 2,981	$ 3,148	$ 3,876	$ 2,163
Net cash used by investing activities	(974)	(994)	(10,234)	(788)	(391)
Net cash (used) provided by financing activities	(903)	(1,997)	5,086	(2,399)	(2,169)
Net cash used by discontinued operations	(59)	(51)	(20)	(40)	(54)
Cash dividends declared per common share	4.40	4.08	3.72	3.36	3.04
Financial Position					
Cash and equivalents	$ 2,824	$ 902	$ 963	$ 2,983	$ 2,334
Total assets	51,308	49,349	45,887	35,469	33,380
Short- and long-term debt	12,998	11,930	12,417	3,982	3,888
Shareholders' equity	15,661	13,978	12,110	11,801	10,509
Debt-to-equity (b)	83.0%	85.3%	102.5%	33.7%	37.0%
Debt-to-capital (c)	45.4%	46.0%	50.6%	25.2%	27.0%
Book value per share (d)	54.67	48.26	41.95	39.75	34.75
Other Information					
Free cash flow from operations (e)	$ 2,891	$ 1,994	$ 2,458	$ 3,448	$ 1,771
Return on equity (f)	21.8%	26.4%	27.3%	26.5%	25.1%
Return on invested capital (e)	11.8%	14.0%	15.4%	16.8%	16.3%
Funded backlog	58,783	57,530	55,826	52,031	51,783
Total backlog	89,489	86,945	67,871	63,175	62,206
Shares outstanding	286.5	289.6	288.7	296.9	302.4
Weighted average shares outstanding:					
Basic	286.9	288.3	295.3	299.2	304.7
Diluted	287.9	290.8	299.2	304.6	310.4
Employees	100,700	102,900	105,600	98,600	98,800

Note: Prior-period information has been restated for the retrospective application of a change in accounting principle related to the amortization of actuarial gains and losses for our qualified U.S. government pension plans, which we adopted in the fourth quarter of 2020. For further discussion of this change in accounting principle, see Note T to the Consolidated Financial Statements in Item 8.

(a) Return on sales is calculated as earnings from continuing operations divided by revenue.
(b) Debt-to-equity ratio is calculated as total debt divided by total equity as of year end.
(c) Debt-to-capital ratio is calculated as total debt divided by the sum of total debt plus total equity as of year end.
(d) Book value per share is calculated as total equity divided by total outstanding shares as of year end.
(e) See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations, for a reconciliation of net cash provided by operating activities to free cash flow from operations and the calculation of return on invested capital (ROIC), both of which are non-GAAP management metrics.
(f) Return on equity is calculated by dividing earnings from continuing operations by our average equity during the year.

ITEM 7. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

(Dollars in millions, except per-share amounts or unless otherwise noted)

For an overview of our operating segments, including a discussion of our major products and services and the reorganization of our Information Technology and Mission Systems operating segments into a single Technologies segment, see the Business discussion contained in Item 1. Prior-period segment information has been restated for the reorganization.

A discussion of our financial condition and results of operations for 2020 compared with 2019 is presented below and should be read in conjunction with our Consolidated Financial Statements included in Item 8, while a discussion of 2019 compared with 2018 can be found in Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2019. The Technologies segment’s results of operations for 2019 compared with 2018 can be obtained from the discussions of the former Information Technology and Mission Systems operating segments.

BUSINESS ENVIRONMENT

GLOBAL PANDEMIC

The Coronavirus (COVID-19) pandemic has caused significant disruptions to national and global economies and government activities. Our businesses have been designated as critical infrastructure by the U.S. government and many non-U.S. governments and, as such, are required to stay open. During this time, we have continued to conduct our operations to the fullest extent possible, while responding to the pandemic with actions that include:

- implementing measures to protect the health and safety of our employees.
- modifying employee work locations and schedules where possible and permitted under our contracts.
- coordinating closely with our suppliers and customers.
- managing our cost structure in the context of current business activity.
- instituting various aspects of our business continuity programs.
- planning for and working aggressively to mitigate disruptions that may occur.
- supporting our communities and the U.S. government in addressing the challenges of the pandemic, such as the production of medical supplies and donation of personal protective equipment.

While we expect this situation to be temporary, any longer-term impact to our business is currently unknown due to the uncertainty around the pandemic’s duration and its broader impact. See the Risk Factors in Item 1A, regarding the COVID-19 pandemic, as well as additional risks facing our business, which may be affected by the COVID-19 pandemic.

The United States and some other governments have taken steps to respond to the pandemic and to support economic activity and liquidity in the capital markets. In the United States, the adoption of the Coronavirus Aid, Relief, and Economic Security Act (the CARES Act) provides various forms of relief. The CARES Act includes provisions that allow agencies to reimburse contractors for payments to covered workers who are prevented from working due to COVID-19 facility closures or other restrictions; however, such reimbursement is subject to the availability of funds. These provisions of the CARES Act have been extended through March 31, 2021. The CARES Act also allows for loans to companies. To date, we have not sought or accepted CARES Act loans. In addition, the U.S. Department of Defense (DoD) increased progress payment rates and reduced retention rates on certain contracts to provide liquidity to federal contractors and their suppliers. We in turn advanced payments across our supplier base to help maintain the health and liquidity of our supply chain. Outside of the United States, other governments have established various government workforce programs, which can support business continuity for our foreign operations. We continue to assess the benefits and limitations of the actions taken by the United States and other governments. See Note A to the Consolidated Financial Statements in Item 8 for additional information about our use of estimates and other uncertainties.

Our U.S. government business experienced some disruption from the COVID-19 pandemic, including reduced activities due to select customer site closures and limited access to some customer sites, travel restrictions, slowdowns in the provision of materials from suppliers, and lower man-hours at some manufacturing sites. Internationally, while government actions shut down some of our facilities in the second quarter, our defense business has largely returned to normal operations. Within our Aerospace segment, pandemic-related travel limitations resulted in lower demand for aircraft services due to reduced flight activity, and disrupted the aircraft sales process by limiting our ability to arrange demonstration flights and coordinate in-person access to customers. To de-risk elements of the supply chain and better align production with demand, we have reduced our aircraft production rate until such time that the marketplace supports future increases. Accordingly, we have adjusted staffing levels and taken other cost control measures. The Review of Operating Segments includes additional information on the full-year results for each of our segments.

We expect COVID-19 to continue to negatively impact our businesses, particularly Aerospace, until the large economies of the world recover from the effects of the pandemic. As air travel resumes, we expect aircraft services volume to increase, but we could see some future aircraft deliveries delayed to the extent customers have difficulty traveling to take possession of their aircraft. In addition, should the global economy experience a significant extended downturn from the pandemic, demand for our aerospace products and services would likely be impacted. We believe the support by the DoD, and the U.S. government generally, of the defense industrial base has helped and will continue to help mitigate the effects of disruptions on our U.S. defense business. Our non-U.S. defense business will be impacted to varying degrees based on the response of the countries in which they operate. We will continue to assess further potential consequences to our employees, business, supply chain and customers, and take actions to mitigate adverse outcomes.

We took actions in 2020 to strengthen our liquidity and financial condition. In March 2020, we issued $4 billion of fixed-rate notes to repay $2.5 billion of fixed- and floating-rate notes that matured in May 2020 and for general corporate purposes, including the repayment of a portion of our borrowings under our commercial paper program. In addition to this long-term borrowing, we renewed our access to $5 billion of credit facilities. While part of our pre-COVID-19 planning, this liquidity preserves our financial flexibility during the pandemic. We believe that our cash flows from operations and borrowing capacity are sufficient to support our short- and long-term liquidity needs.

OUR MARKETS

With approximately 70% of our revenue from the U.S. government, government spending levels — particularly defense spending — influence our financial performance. On December 27, 2020, the fiscal year (FY) 2021 defense appropriations bill was signed into law. It totaled $696 billion, a modest increase over FY 2020, and included $627 billion in the base budget in compliance with the previously established spending caps and $69 billion for overseas contingency operations.

The long-term outlook for our U.S. defense business is influenced by the U.S. military's funding priorities, the diversity of our programs and customers, our insight into customer requirements stemming from our incumbency on core programs, our ability to evolve our products to address a fast-changing threat environment and our proven track record of successful contract execution.

International demand for military equipment and technologies presents opportunities for our non-U.S. operations and exports from our North American businesses. While the revenue potential can be significant, there are risks to doing business in foreign countries, including changing budget priorities and overall spending pressures unique to each country.

In our Aerospace segment, we expect our investment in the development of new aircraft products and technologies to support the segment's long-term growth. Similarly, we believe the aircraft services business will be a source of steady revenue growth as the global business jet fleet continues to grow and the impact of the pandemic subsides.

RESULTS OF OPERATIONS

INTRODUCTION

An understanding of our accounting practices is necessary in the evaluation of our financial statements and operating results. The following paragraphs explain how we recognize revenue and operating costs in our operating segments and the terminology we use to describe our operating results.

In the Aerospace segment, we record revenue on contracts for new aircraft when the customer obtains control of the asset, which is generally upon delivery and acceptance by the customer of the fully outfitted aircraft. Revenue associated with the segment's custom completions of narrow-body and wide-body aircraft and the segment's services businesses is recognized as work progresses or upon delivery of services. Fluctuations in revenue from period to period result from the number and mix of new aircraft deliveries, progress on aircraft completions, and the level and type of aircraft services performed during the period.

The majority of the Aerospace segment's operating costs relates to new aircraft production on firm orders and consists of labor, material, subcontractor and overhead costs. The costs are accumulated in production lots, recorded in inventory and recognized as operating costs at aircraft delivery based on the estimated average unit cost in a production lot. While changes in the estimated average unit cost for a production lot impact the level of operating costs, the amount of operating costs reported in a given period is based largely on the number and type of aircraft delivered. Operating costs in the Aerospace segment's completions and services businesses are recognized generally as incurred.

For new aircraft, operating earnings and margin are a function of the prices of our aircraft, our operational efficiency in manufacturing and outfitting the aircraft, and the mix of ultra-large-cabin, large-cabin and mid-cabin aircraft deliveries. Aircraft mix can also refer to the stage of program maturity for our aircraft models. A new aircraft model typically has lower margins in its initial production lots, and then margins generally increase as we realize efficiencies in the production process. Additional factors affecting the segment's earnings and margin include the volume, mix and profitability of completions and services work performed, the volume of and market for pre-owned aircraft, and the level of general and administrative (G&A) and net research and development (R&D) costs incurred by the segment.

In the defense segments, revenue on long-term government contracts is recognized generally over time as the work progresses, either as products are produced or as services are rendered. Typically, revenue is recognized over time using costs incurred to date relative to total estimated costs at completion to measure progress toward satisfying our performance obligations. Incurred cost represents work performed, which corresponds with, and thereby best depicts, the transfer of control to the customer. Contract costs include labor, material, overhead and, when appropriate, G&A expenses. Variances in costs recognized from period to period reflect primarily increases and decreases in production or activity levels on individual contracts. Because costs are used as a measure of progress, year-over-year variances in cost result in corresponding variances in revenue, which we generally refer to as volume.

Operating earnings and margin in the defense segments are driven by changes in volume, performance or contract mix. Performance refers to changes in profitability based on adjustments to estimates at completion on individual contracts. These adjustments result from increases or decreases to the estimated value of the contract, the estimated costs to complete the contract or both. Therefore, changes in costs incurred in the period compared with prior periods do not necessarily impact profitability. It is only when total estimated costs at completion on a given contract change without a corresponding change in the contract value (or vice versa) that the profitability of that contract may be impacted. Contract mix refers to changes in the volume of higher- versus lower-margin work. Higher or lower margins can result from a number of factors, including contract type (e.g., fixed-price/cost-reimbursable) and type of work (e.g., development/production). Contract mix can also refer to the stage of program maturity for our long-term production contracts. New long-term production contracts typically have lower margins initially, and then margins generally increase as we achieve learning curve improvements or realize other cost reductions.

In the discussion that follows, prior-period information has been restated for the retrospective application of a change in accounting principle related to the amortization of actuarial gains and losses for our qualified U.S. government pension plans, which we adopted in the fourth quarter of 2020 as discussed in Note T to the Consolidated Financial Statements in Item 8.

CONSOLIDATED OVERVIEW

2020 IN REVIEW

- Outstanding operating performance in the face of a challenging business environment:
  - Revenue of $37.9 billion with sequential growth throughout the year.
  - Cash from operating activities of $3.9 billion, or 122% percent of net earnings.
- Record-high backlog of $89.5 billion increased $2.5 billion, or 2.9%, from 2019, supporting our long-term growth expectations:
  - Several significant contract awards received in 2020 in our defense segments, including $9.5 billion from the U.S. Navy for the construction of the first two Columbia-class submarines.

Year Ended December 31	2020	2019	Variance	
Revenue	$ 37,925	$ 39,350	$ (1,425)	(3.6)%
Operating costs and expenses	(33,792)	(34,780)	988	(2.8)%
Operating earnings	4,133	4,570	(437)	(9.6)%
Operating margin	10.9%	11.6%		

Our consolidated revenue decreased in 2020 due to fewer aircraft deliveries and lower aircraft service activity in our Aerospace segment. Also in 2020, revenue was impacted by lower information technology (IT) services volume in our Technologies segment. These decreases were driven by the impact of the COVID-19 pandemic. Higher volume on the Virginia-class and Columbia-class submarine programs in our Marine Systems segment helped offset some of these decreases. The combined revenue in our defense businesses was up approximately $300 compared with 2019.

Operating margin decreased in 2020 due primarily to reduced aircraft deliveries and related restructuring charges in our Aerospace segment. Operating margin was also negatively impacted by COVID-related disruptions in our Technologies segment, including a loss on a contract with a non-U.S. customer and non-fee bearing cost reimbursements by the U.S. government authorized under Section 3610 of the CARES Act.

REVIEW OF OPERATING SEGMENTS

Following is a discussion of operating results and outlook for each of our operating segments. For the Aerospace segment, results are analyzed by specific types of products and services, consistent with how the segment is managed. For the defense segments, the discussion is based on markets and the lines of products and services offered with a supplemental discussion of specific contracts and programs when significant to the results. Additional information regarding our segments can be found in Note S to the Consolidated Financial Statements in Item 8.

AEROSPACE

Year Ended December 31	2020	2019	Variance	
Revenue	$ 8,075	$ 9,801	$ (1,726)	(17.6)%
Operating earnings	1,083	1,532	(449)	(29.3)%
Operating margin	13.4 %	15.6%		
Gulfstream aircraft deliveries (in units)	127	147	(20)	(13.6)%

Operating Results

The change in the Aerospace segment's revenue in 2020 consisted of the following:

Aircraft manufacturing	$ (1,426)
Aircraft services and completions	(300)
Total decrease	$ (1,726)

In 2020, quarantine and travel restrictions resulting from the COVID-19 pandemic had a significant impact on the segment's results. In an effort to de-risk elements of the supply chain and better align production with demand, in April we reduced our aircraft production and delivery rates for the year. As a result, aircraft manufacturing revenue decreased in 2020 due primarily to fewer deliveries of the ultra-large-cabin G650 aircraft, offset partially by additional deliveries of the large-cabin G600 and G500 aircraft. In addition, decreased flight activity due to the pandemic resulted in lower demand for maintenance work and reduced volume at our fixed-base operator (FBO) facilities in 2020.

The change in the segment's operating earnings in 2020 consisted of the following:

Aircraft manufacturing	$	(590)
Aircraft services and completions		(39)
Restructuring charges		(59)
G&A/other expenses		239
Total decrease	$	(449)

Aircraft manufacturing operating earnings were down in 2020 due to reduced aircraft production and delivery rates and a somewhat less favorable mix in aircraft deliveries. In 2020, operating earnings were also down in aircraft services and completions due to lower volume. Full-year results were negatively impacted by restructuring actions taken to adjust the workforce size to the revised 2020 production levels. These decreases were offset partially by lower net G&A/other expenses, including reduced R&D expenses. Overall, R&D expenses have been trending downward with the completion of the G500 and G600 test programs. In total, the Aerospace segment's operating margin decreased 220 basis points to 13.4%.

The Aerospace segment's operating results progressively improved during 2020 following the initial disruption from the pandemic in the second quarter. Fourth quarter revenue grew 23% over third quarter and operating earnings grew 42% on increased deliveries of all large-cabin models, as well as increased aircraft services activity. As a result, the segment's operating margin increased 220 basis points in the fourth quarter compared with the third quarter and exceeded the fourth quarter of 2019.

2021 Outlook

We expect the Aerospace segment's 2021 revenue to be around $8 billion. Operating margin is expected to be approximately 12.5%, down from 2020 as a result of fewer anticipated aircraft deliveries as the segment completed production of the G550 aircraft, offset by higher anticipated aircraft services volume that carries lower margins.

MARINE SYSTEMS

Year Ended December 31	2020	2019	Variance	
Revenue	$ 9,979	$ 9,183	$ 796	8.7 %
Operating earnings	854	785	69	8.8 %
Operating margin	8.6%	8.5%		

Operating Results

The increase in the Marine Systems segment's revenue in 2020 consisted of the following:

U.S. Navy ship construction	$	668
U.S. Navy ship engineering, repair and other services		176
Commercial ship construction		(48)
Total increase	$	796

Revenue from U.S. Navy ship construction and engineering work was up in 2020 due to increased volume on the Columbia-class submarine program. Revenue from U.S. Navy ship construction also increased due to higher volume on the Virginia-class submarine and Expeditionary Sea Base (ESB) auxiliary support ship programs. This revenue growth was achieved as management worked to protect employees and support the supply chain to keep these critical programs on track during the pandemic. The Marine Systems segment's operating margin increased 10 basis points in 2020 despite the impact of the pandemic and a workforce strike at our Bath Iron Works shipyard.

2021 Outlook

We expect the Marine Systems segment's 2021 revenue to be approximately $10.3 billion. Operating margin is expected to be approximately 8.3%, down from 2020 due to increased work on the first two Columbia-class submarines, which carry a lower margin consistent with lead boats in a new class.

COMBAT SYSTEMS

Year Ended December 31	2020	2019	Variance	
Revenue	$ 7,223	$ 7,007	$ 216	3.1 %
Operating earnings	1,041	996	45	4.5 %
Operating margin	14.4%	14.2%		

Operating Results

The increase in the Combat Systems segment's revenue in 2020 consisted of the following:

Weapons systems and munitions	$ 125
International military vehicles	54
U.S. military vehicles	37
Total increase	$ 216

Revenue was up across the Combat Systems segment in 2020 as the business overcame disruptions caused by the pandemic in the first half of the year. Weapons systems and munitions revenue was up driven by increased production of artillery and missile subcomponents. Revenue from international military vehicles increased due to higher volume on a contract to produce armored combat support vehicles (ACSVs) for the Canadian government and the British Army's AJAX armored fighting vehicle program, offset partially by lower volume on Piranha wheeled armored vehicle programs. Revenue from U.S. military vehicles increased due primarily to higher volume on the U.S. Army's Abrams main battle tank program. The Combat Systems segment's operating margin increased 20 basis points compared with 2019 driven by favorable contract mix and strong operating performance.

2021 Outlook

We expect the Combat Systems segment's 2021 revenue to be about $7.3 billion with operating margin of approximately 14.5%.

TECHNOLOGIES

Year Ended December 31	2020	2019	Variance	
Revenue	$ 12,648	$ 13,359	$ (711)	(5.3)%
Operating earnings	1,211	1,311	(100)	(7.6)%
Operating margin	9.6%	9.8%		

Operating Results

The change in the Technologies segment's revenue in 2020 consisted of the following:

IT services	$	(530)
C4ISR* solutions		(181)
Total decrease	$	(711)

* Command, control, communications, computers, intelligence, surveillance and reconnaissance

IT services revenue decreased due to the partial closure of some customer sites to all but mission critical personnel and a lower level of customer and program activity as a result of the COVID-19 pandemic. IT services revenue was also lower due to the exit of non-core lines of business in 2019. C4ISR revenue decreased due to the sale of a satellite communications business in the second quarter and volume timing on several programs, including a mobile communications network program. These decreases were offset partially by increased volume on programs supporting Navy platforms.

The Technologies segment's operating margin decreased 20 basis points compared with 2019 due to COVID-related disruptions in our IT services business, including customer reimbursement of idle workforce cost at zero fee and a loss recognized on a contract with a non-U.S. customer from schedule delays caused by COVID travel restrictions. The Technologies segment's operating performance steadily improved in the second half of 2020 with a reduced impact from the pandemic. Operating margin increased 120 basis points in the fourth quarter compared with the third quarter, returning to the same level of performance as fourth quarter of 2019.

2021 Outlook

We expect the Technologies segment's 2021 revenue to be approximately $13.2 billion with operating margin of around 9.5%.

CORPORATE

Corporate operating results consisted primarily of equity-based compensation expense and totaled $56 in 2020 and $54 in 2019. Corporate operating costs are expected to be approximately $85 in 2021.

OTHER INFORMATION

PRODUCT AND SERVICE REVENUE AND OPERATING COSTS

Year Ended December 31	2020	2019	Variance	
Revenue:				
Products	$ 22,188	$ 23,130	$ (942)	(4.1)%
Services	15,737	16,220	(483)	(3.0)%
Operating Costs:				
Products	$ (18,192)	$ (18,611)	$ 419	(2.3)%
Services	(13,408)	(13,752)	344	(2.5)%

The change in product revenue in 2020 consisted of the following:

Aircraft manufacturing	$	(1,426)
Ship construction		620
Other, net		(136)
Total decrease	$	(942)

In 2020, aircraft manufacturing revenue decreased due to the reduced production and delivery rates caused by the COVID-19 pandemic. This decrease was offset partially by increased volume on the Virginia-class and Columbia-class submarine programs. In 2020, product operating costs decreased at a lower rate than revenue due primarily to the mix of Gulfstream aircraft deliveries.

The change in service revenue in 2020 consisted of the following:

IT services	$	(530)
Other, net		47
Total decrease	$	(483)

In 2020, IT services revenue decreased due to the partial closure of some customer sites to all but mission critical personnel and a lower level of customer and program activity as a result of the COVID-19 pandemic. In 2020, the primary driver of the decrease in service operating costs was the change in volume of IT services described above.

G&A EXPENSES

As a percentage of revenue, G&A expenses were 5.8% in 2020 and 6.1% in 2019. We expect G&A expenses as a percentage of revenue in 2021 to be generally consistent with 2020.

INTEREST, NET

Net interest expense was $477 in 2020 and $460 in 2019. See Note K to the Consolidated Financial Statements in Item 8 for additional information regarding our debt obligations, including interest rates. We expect 2021 net interest expense to be approximately $420, reflecting repayment of our scheduled debt maturities of $3 billion in 2021.

OTHER, NET

Net other income was $82 in 2020 and $92 in 2019. Other represents primarily the non-service components of pension and other post-retirement benefits, which were income in both periods. In 2021, we expect net other income to be approximately $90.

PROVISION FOR INCOME TAX, NET

Our effective tax rate was 15.3% in 2020 and 17.1% in 2019. The decrease is due to a variety of factors, including higher research tax credits. For further discussion, including a reconciliation of our effective tax rate from the statutory federal rate, see Note F to the Consolidated Financial Statements in Item 8. For 2021, we anticipate a full-year effective tax rate of approximately 16%.

BACKLOG AND ESTIMATED POTENTIAL CONTRACT VALUE

Our total backlog, including funded and unfunded portions, was $89.5 billion on December 31, 2020, up 2.9% from $86.9 billion at the end of 2019. Our total backlog is equal to our remaining performance obligations under contracts with customers as discussed in Note B to the Consolidated Financial Statements in Item 8. Our total estimated contract value, which combines total backlog with estimated potential contract value, was $134.7 billion on December 31, 2020, up 6.7% from $126.2 billion at the end of 2019.

The following table details the backlog and estimated potential contract value of each segment at the end of 2020 and 2019:

	Funded	Unfunded	Total Backlog	Estimated Potential Contract Value	Total Estimated Contract Value
	December 31, 2020				
Aerospace	$ 11,308	$ 318	$ 11,626	$ 2,800	$ 14,426
Marine Systems	23,646	26,336	49,982	4,876	54,858
Combat Systems	14,341	226	14,567	9,774	24,341
Technologies	9,488	3,826	13,314	27,727	41,041
Total	$ 58,783	$ 30,706	$ 89,489	$ 45,177	$ 134,666
	December 31, 2019				
Aerospace	$ 13,168	$ 181	$ 13,349	$ 2,989	$ 16,338
Marine Systems	20,012	24,175	44,187	5,453	49,640
Combat Systems	14,474	439	14,913	4,322	19,235
Technologies	9,876	4,620	14,496	26,485	40,981
Total	$ 57,530	$ 29,415	$ 86,945	$ 39,249	$ 126,194

For additional information about our major products and services in backlog see the Business discussion contained in Item 1.

AEROSPACE

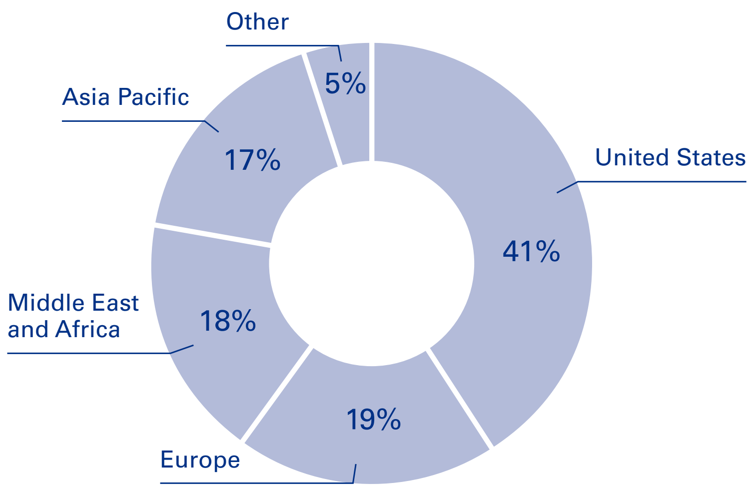
Aerospace funded backlog represents new aircraft and custom completion orders for which we have definitive purchase contracts and deposits from customers. Unfunded backlog consists of agreements to provide future aircraft maintenance and support services. Beyond total backlog, estimated potential contract value represents primarily options and other agreements with existing customers to purchase new aircraft and long-term aircraft services agreements.

Following reduced order activity in the first half of 2020 due to the COVID-19 pandemic, orders in the second half of 2020 reflected improved demand for Gulfstream aircraft. We received orders for all models of Gulfstream aircraft, including strong order activity for the new G700 aircraft, which is scheduled to enter service in the fourth quarter of 2022. Despite the impact of the COVID-19 pandemic, the segment achieved a book-to-bill ratio (orders divided by revenue) of 0.9-to-1 in 2020.

Demand for Gulfstream aircraft remains strong across customer types and geographic regions, generating orders from public and privately held companies, individuals, and governments around the world. Geographically, U.S. customers represented more than 55% of the segment's orders in 2020 and

41% of the segment's backlog on December 31, 2020, demonstrating continued strong domestic demand.

The following represents Gulfstream aircraft (in units) in backlog by region on December 31, 2020:



DEFENSE SEGMENTS

The total backlog in our defense segments represents the estimated remaining sales value of work to be performed under firm contracts. The funded portion of total backlog includes items that have been authorized and appropriated by the U.S. Congress and funded by customers, as well as commitments by international customers that are approved and funded similarly by their governments. The unfunded portion of total backlog includes the amounts we believe are likely to be funded, but there is no guarantee that future budgets and appropriations will provide the same funding level currently anticipated for a given program.

Estimated potential contract value in our defense segments includes unexercised options associated with existing firm contracts and unfunded work on indefinite delivery, indefinite quantity (IDIQ) contracts. Contract options represent agreements to perform additional work under existing contracts at the election of the customer. We recognize options in backlog when the customer exercises the option and establishes a firm order. For IDIQ contracts, we evaluate the amount of funding we expect to receive and include this amount in our estimated potential contract value. This amount is often less than the total IDIQ contract value, particularly when the contract has multiple awardees. The actual amount of funding received in the future may be higher or lower than our estimate of potential contract value.

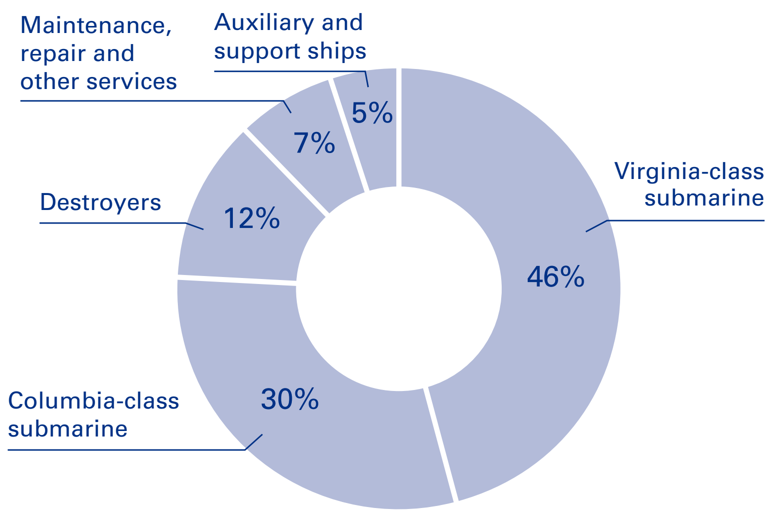
Total backlog in our defense segments was $77.9 billion on December 31, 2020, up 5.8% from $73.6 billion at the end of 2019 driven by the award of a contract from the U.S. Navy for the construction of the first two Columbia-class submarines. Estimated potential contract value in our defense segments was $42.4 billion on December 31, 2020, up 16.9% from $36.3 billion at year-end 2019 due to strong demand from customers in our Combat Systems and Technologies segments.

MARINE SYSTEMS

The Marine Systems segment's backlog consists of very long-term submarine and surface ship construction programs, as well as numerous engineering and repair contracts. The segment's book-to-bill ratio was 1.6-to-1 in 2020, resulting in backlog growth of 13.1% from year-end 2019. The increase in backlog is due primarily to the award of a $9.5 billion contract for the construction of the first two Columbia-class ballistic-missile submarines, as well as associated design and engineering support. Other significant contract awards received in the Marine Systems segment during 2020 include:

- $990 from the U.S. Navy for the John Lewis-class (T-AO-205) fleet replenishment oiler program, including the construction of two additional ships.
- $575 from the Navy to provide maintenance and repair services for the Arleigh Burke-class (DDG-51) guided-missile destroyer, Independence-class Littoral Combat Ship (LCS), San Antonio-class amphibious transport dock, Ticonderoga-class guided-missile cruiser, Wasp-class amphibious assault ship and Whidbey Island-class dock landing ship programs.
- $310 from the Navy for Virginia-class submarine construction. The Virginia-class submarine program was the company's largest defense program in 2020 and the largest program in the company's backlog.

The following represents the Marine Systems segment's total estimated contract value by major program on December 31, 2020:



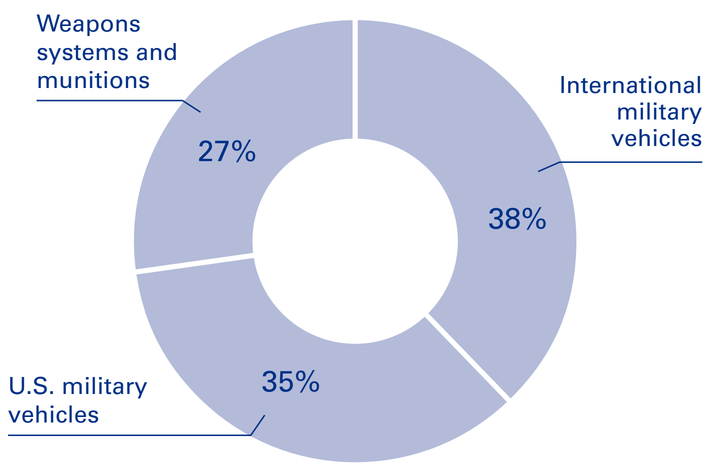
COMBAT SYSTEMS

The Combat Systems segment's backlog consists of a mix of U.S. and international combat vehicles, weapons systems and munitions programs. The vehicle programs are generally long-term, franchise programs, while the weapons systems and munitions programs tend to be shorter-term in nature. The segment's total estimated contract value at the end of 2020 was up 26.5% from year-end 2019, driven by awards from the U.S. Army related to Abrams main battle tanks and Stryker wheeled combat vehicles described below.

We received the following significant contract awards in the Combat Systems segment during 2020:

- $405 from the U.S. Army to upgrade Abrams tanks to the M1A2 System Enhancement Package Version 3 (SEPv3) configuration. The contract has a maximum potential value of $4.3 billion.
- $320 from the Army to upgrade Stryker vehicles to the double-V-hull A1 configuration. The contract has a maximum potential value of $2.5 billion.
- $230 from the Army to produce Stryker Initial Maneuver Short-Range Air Defense (IM-SHORAD) vehicles. The contract has a maximum potential value of $1.2 billion.
- $215 from the Army for the production of Hydra-70 rockets. The contract has a maximum potential value of $3.4 billion.
- $870 to deliver 8x8 wheeled combat vehicles, maintenance and lifecycle support to the Spanish Ministry of Defense.

The following represents the Combat Systems segment's total estimated contract value by market on December 31, 2020:



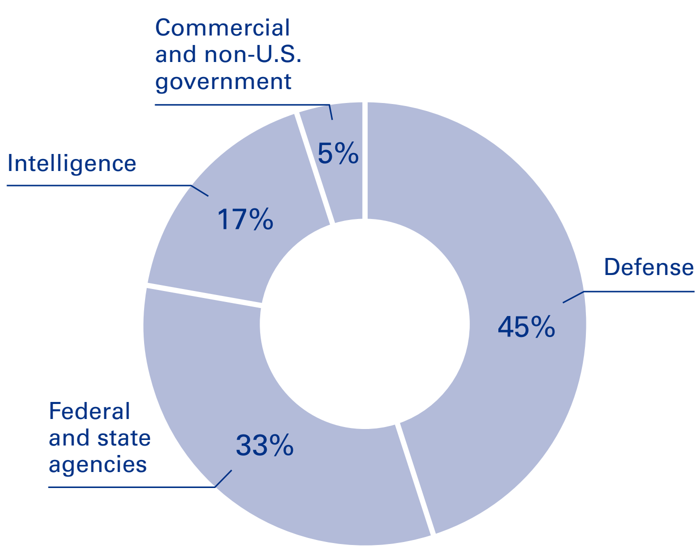
TECHNOLOGIES

The Technologies segment's backlog consists of thousands of contracts and task orders across a mix of U.S. and non-U.S. government and commercial customers. These contracts can be shorter-cycle or span multiple years, but commonly include a small, initially funded order. Therefore, our estimated potential contract value of $27.7 billion is an important indicator of future orders and revenue. In 2020, approximately 60% of the segment's orders were from additional work on IDIQ contracts or the exercise of options. Our total estimated contract value remained stable in 2020 despite the impact of reduced new business opportunities caused by COVID-19.

We received the following significant contract awards in the Technologies segment during 2020:

- The Defense Enterprise Office Solutions (DEOS) contract from the General Services Administration in partnership with the DoD and Defense Information Systems Agency (DISA) to stand up cloud environments and support the migration of over 3.2 million existing DoD Office 365 users to the cloud. The contract has a maximum potential value of $4.4 billion.
- An IDIQ award from the U.S. Department of State to provide overseas consular services to support visa processing and other functions for U.S. embassies and consultants under the Global Support Strategy (GSS) program. The program has a maximum potential contract value of $3.3 billion among three awardees.
- An IDIQ contract to modernize the Army's training programs. The contract has a maximum potential value of $885.
- A contract to provide enterprise IT and cybersecurity services and solutions for the DoD. The contract has a maximum potential value of $760.
- A contract to provide enterprise IT, communications and mission command support services to U.S. Army Europe. The contract has a maximum potential value of $695.
- A contract from the U.S. Air Force for the Battlefield Information Collection and Exploitation System (BICES) program to provide intelligence information sharing capabilities for the DoD. The contract has a maximum potential value of $620.

The following represents the Technologies segment's total estimated contract value by customer on December 31, 2020:



FINANCIAL CONDITION, LIQUIDITY AND CAPITAL RESOURCES

We place a strong emphasis on cash flow generation. This focus gives us the flexibility for capital deployment while preserving a strong balance sheet to position us for future opportunities. Cash generated by operating activities in 2020 and 2019 was deployed to pay dividends, fund capital expenditures and business acquisitions, and repurchase our common stock.

Year Ended December 31	2020	2019
Net cash provided by operating activities	$ 3,858	$ 2,981
Net cash used by investing activities	(974)	(994)
Net cash used by financing activities	(903)	(1,997)
Net cash used by discontinued operations	(59)	(51)
Net increase (decrease) in cash and equivalents	1,922	(61)
Cash and equivalents at beginning of year	902	963
Cash and equivalents at end of year	2,824	902
Short- and long-term debt	(12,998)	(11,930)
Net debt	$ (10,174)	$ (11,028)
Debt-to-equity (a)	83.0%	85.3%
Debt-to-capital (b)	45.4%	46.0%

(a) Debt-to-equity ratio is calculated as total debt divided by total equity as of year end.
(b) Debt-to-capital ratio is calculated as total debt divided by the sum of total debt plus total equity as of year end.

We expect to continue to generate funds in excess of our short- and long-term liquidity needs. We believe we have adequate funds on hand and sufficient borrowing capacity to execute our financial and operating strategy. The following is a discussion of our major operating, investing and financing activities in 2020 and 2019, as classified on the Consolidated Statement of Cash Flows in Item 8.

OPERATING ACTIVITIES

Cash provided by operating activities was $3.9 billion in 2020 compared with $3 billion in 2019. The primary driver of cash inflows in both periods was net earnings. However, cash flows in both years were affected negatively by growth in operating working capital (OWC) in our Aerospace segment due to our position in the development and production cycles of our Gulfstream aircraft models. We had anticipated this OWC growth to begin reversing in 2020, but the impact of COVID-19 on our production and delivery rates has delayed this recovery. Cash flows in 2019 were also affected negatively by growth in OWC in our Combat Systems segment due to the timing of payments on a large international wheeled armored vehicle contract. These payment timing issues have been resolved as a result of finalizing a contract amendment with the customer, which contributed to the increase in cash flows in 2020. For additional information about the unbilled receivables balance and activity associated with this contract, see Note H to the Consolidated Financial Statements in Item 8.

INVESTING ACTIVITIES

Cash used by investing activities was $974 in 2020 and $994 in 2019. Our investing activities include cash paid for capital expenditures and business acquisitions; purchases, sales and maturities of marketable securities; and proceeds from asset sales.

Capital Expenditures. The primary use of cash for investing activities in both years was capital expenditures. Capital expenditures were $967 in 2020 and $987 in 2019. Capital expenditures have been at an elevated level the past two years as we continue to invest in our shipyards, particularly for the planned growth in submarine construction. We expect capital expenditures to be approximately 2.5% of revenue in 2021.

Business Acquisitions. In 2020, we acquired five businesses for an aggregate of approximately $205. In 2019, we acquired three businesses for an aggregate of approximately $20.

FINANCING ACTIVITIES

Cash used by financing activities was $903 in 2020 and $2 billion in 2019. Net cash from financing activities includes proceeds received from debt and commercial paper issuances and employee stock options exercises. Our financing activities also include repurchases of common stock, payment of dividends and debt repayments.

Dividends. On March 4, 2020, our board of directors declared an increased quarterly dividend of $1.10 per share, the 23rd consecutive annual increase. Previously, the board had increased the quarterly dividend to $1.02 per share in March 2019. Cash dividends paid were $1.2 billion in 2020 and 2019.

Share Repurchases. Our board of directors from time to time authorizes management to repurchase outstanding shares of our common stock on the open market. We paid $587 and $231 in 2020 and 2019, respectively, to repurchase our outstanding shares. On December 31, 2020, 12.3 million shares remained authorized by our board of directors for repurchase, representing 4.3% of our total shares outstanding.

Debt and Commercial Paper Issuances and Repayments. In March 2020, we issued $4 billion of fixed-rate notes. The proceeds were used to repay $2.5 billion of fixed- and floating-rate notes that matured in May 2020 and for general corporate purposes, including the repayment of a portion of the borrowings under our commercial paper program.

Fixed- and floating-rate notes totaling $2.5 billion mature in May 2021, and an additional $500 of fixed-rate notes mature in July 2021. We currently plan to repay these notes using a combination of cash on hand and the issuance of commercial paper. For additional information regarding our debt obligations, including scheduled debt maturities and interest rates, see Note K to the Consolidated Financial Statements in Item 8.

On December 31, 2020, we had no commercial paper outstanding, but we maintain the ability to access the commercial paper market in the future. Separately, we have $5 billion in committed bank credit facilities for general corporate purposes and working capital needs and to support our commercial paper issuances. We also have an effective shelf registration on file with the Securities and Exchange Commission that allows us to access the debt markets.

NON-GAAP FINANCIAL MEASURES

We emphasize the efficient conversion of net earnings into cash and the deployment of that cash to maximize shareholder returns. As described below, we use free cash flow from operations and return on invested capital (ROIC) to measure our performance in these areas. While we believe these metrics provide useful information, they are not defined operating measures under U.S. generally accepted accounting principles (GAAP), and there are limitations associated with their use. Our calculation of these metrics may not be completely comparable to similarly titled measures of other companies due to potential differences in the method of calculation. As a result, the use of these metrics should not be considered in isolation from, or as a substitute for, other GAAP measures.

Free Cash Flow. We define free cash flow from operations as net cash provided by operating activities less capital expenditures. We believe free cash flow from operations is a useful measure for investors because it portrays our ability to generate cash from our businesses for purposes such as repaying maturing debt, funding business acquisitions, repurchasing our common stock and paying dividends. We use free cash flow from operations to assess the quality of our earnings and as a key performance measure in evaluating management. The following table reconciles the free cash flow from operations with net cash provided by operating activities, as classified on the Consolidated Statement of Cash Flows in Item 8:

Year Ended December 31	2020	2019	2018	2017	2016
Net cash provided by operating activities	$ 3,858	$ 2,981	$ 3,148	$ 3,876	$ 2,163
Capital expenditures	(967)	(987)	(690)	(428)	(392)
Free cash flow from operations	$ 2,891	$ 1,994	$ 2,458	$ 3,448	$ 1,771
Cash flows as a percentage of earnings from continuing operations:					
Net cash provided by operating activities	122 %	86%	94%	133%	81%
Free cash flow from operations	91 %	57%	73%	118%	66%

Return on Invested Capital. We believe ROIC is a useful measure for investors because it reflects our ability to generate returns from the capital we have deployed in our operations. We use ROIC to evaluate investment decisions and as a performance measure in evaluating management. We define ROIC as net operating profit after taxes divided by average invested capital. Net operating profit after taxes is defined as earnings from continuing operations plus after-tax interest and amortization expense, calculated using the statutory federal income tax rate. Average invested capital is defined as the sum of the average debt and shareholders' equity excluding accumulated other comprehensive loss. ROIC excludes goodwill impairments and non-economic accounting changes as they are not reflective of company performance.

ROIC is calculated as follows:

Year Ended December 31	2020	2019	2018	2017	2016
Earnings from continuing operations	$ 3,167	$ 3,484	$ 3,358	$ 2,912	$ 2,679
After-tax interest expense	386	373	295	76	64
After-tax amortization expense	280	287	258	51	57
Net operating profit after taxes	$ 3,833	$ 4,144	$ 3,911	$ 3,039	$ 2,800
Average invested capital	$32,431	$29,620	$25,367	$18,099	$17,168
Return on invested capital	11.8 %	14.0%	15.4%	16.8%	16.3%

* 2017 earnings from continuing operations and 2017 and 2018 average invested capital have not been restated for the retrospective application of a change in accounting principle related to the amortization of actuarial gains and losses for our qualified U.S. government pension plans, which we adopted in the fourth quarter of 2020 as discussed in Note T to the Consolidated Financial Statements in Item 8.

ADDITIONAL FINANCIAL INFORMATION

OFF-BALANCE SHEET ARRANGEMENTS

On December 31, 2020, we had no material off-balance sheet arrangements.

CONTRACTUAL OBLIGATIONS AND COMMERCIAL COMMITMENTS

The following tables present information about our contractual obligations and commercial commitments on December 31, 2020:

		Payments Due by Period			
Contractual Obligations	Total Amount Committed	Less Than 1 Year	1-3 Years	4-5 Years	More Than 5 Years
Debt (a)	$ 16,501	$ 3,389	$ 2,884	$ 2,508	$ 7,720
Operating leases	1,710	298	444	263	705
Finance leases	396	87	124	40	145
Purchase obligations (b)	38,090	17,019	15,111	4,655	1,305
Other long-term liabilities (c)	26,892	4,188	3,479	2,596	16,629
	$ 83,589	$ 24,981	$ 22,042	$ 10,062	$ 26,504

(a) Includes scheduled interest payments. See Note K to the Consolidated Financial Statements in Item 8 for a discussion of long-term debt.

(b) Includes amounts committed under legally enforceable agreements for goods and services with defined terms as to quantity, price and timing of delivery. This amount includes $36.2 billion of purchase obligations for products and services to be delivered under firm government contracts under which we would expect full recourse under normal contract termination clauses.

(c) Represents other long-term liabilities on our Consolidated Balance Sheet, including the current portion of these liabilities. The projected timing of cash flows associated with these obligations is based on management's estimates, which are based largely on historical experience. This amount also includes all liabilities under our defined benefit retirement plans. See Note R to the Consolidated Financial Statements in Item 8 for information regarding these liabilities and the plan assets available to satisfy them.

		Amount of Commitment Expiration by Period			
Commercial Commitments	Total Amount Committed	Less Than 1 Year	1-3 Years	4-5 Years	More Than 5 Years
Letters of credit and guarantees*	$ 1,402	$ 771	$ 336	$ 199	$ 96
Aircraft trade-in options*	339	16	236	87	—
	$ 1,741	$ 787	$ 572	$ 286	$ 96

* See Note O to the Consolidated Financial Statements in Item 8 for a discussion of letters of credit and aircraft trade-in options.

APPLICATION OF CRITICAL ACCOUNTING POLICIES

Management's Discussion and Analysis of Financial Condition and Results of Operations is based on the Consolidated Financial Statements, which have been prepared in accordance with GAAP. The preparation of financial statements in accordance with GAAP requires that we make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of revenue and expenses during the reporting period. On an ongoing basis, we evaluate our estimates including most pervasively those related to various assumptions and projections for our long-term contracts and programs. Other significant estimates include those related to goodwill and intangible assets, income taxes, pension and other post-retirement benefits, workers' compensation, warranty obligations and litigation contingencies. We employ judgment in making our estimates, but they are based on historical experience, currently available information and various other assumptions that we believe to be reasonable under the circumstances. These estimates form the basis for making judgments about the carrying values of assets and liabilities that are not readily available from other sources. Actual results may differ from these estimates. We believe our judgment is applied consistently and produces financial information that fairly depicts the results of operations for all periods presented.

In our opinion, the following policies are critical and require the use of significant judgment in their application:

Revenue. A performance obligation is a promise in a contract to transfer a distinct good or service to the customer, and is the unit of account for revenue. A contract's transaction price is allocated to each distinct performance obligation within that contract and recognized as revenue when, or as, the performance obligation is satisfied. Our performance obligations are satisfied over time as work progresses or at a point in time.

Substantially all of our revenue in the defense segments is recognized over time, because control is transferred continuously to our customers. Typically, revenue is recognized over time using costs incurred to date relative to total estimated costs at completion to measure progress toward satisfying our performance obligations. Incurred cost represents work performed, which corresponds with, and thereby best depicts, the transfer of control to the customer. Contract costs include labor, material, overhead and, when appropriate, G&A expenses.

Most of our revenue recognized at a point in time is for the manufacture of business jet aircraft in our Aerospace segment. Revenue on these contracts is recognized when the customer obtains control of the asset, which is generally upon delivery and acceptance by the customer of the fully outfitted aircraft.

The majority of our revenue is derived from long-term contracts and programs that can span several years. Accounting for long-term contracts and programs involves the use of various techniques to estimate total contract revenue and costs. For long-term contracts, we estimate the profit on a contract as the difference between the total estimated revenue and expected costs to complete a contract and recognize that profit over the life of the contract.

Contract estimates are based on various assumptions to project the outcome of future events that often span several years. These assumptions include labor productivity and availability; the complexity of the work to be performed; the cost and availability of materials; the performance of subcontractors; and the availability and timing of funding from the customer.

The nature of our contracts gives rise to several types of variable consideration, including claims and award and incentive fees. We include in our contract estimates additional revenue for submitted contract modifications or claims against the customer when we believe we have an enforceable right to the modification or claim, the amount can be estimated reliably and its realization is probable. In evaluating these criteria, we consider the contractual/legal basis for the claim, the cause of any additional costs incurred, the reasonableness of those costs and the objective evidence available to support the claim. We include award or incentive fees in the estimated transaction price when there is a basis to reasonably estimate the amount of the fee. These estimates are based on historical award experience, anticipated performance and our best judgment at the time. Because of our certainty in estimating these amounts, they are included in the transaction price of our contracts and the associated remaining performance obligations.

As a significant change in one or more of these estimates could affect the profitability of our contracts, we review and update our contract-related estimates regularly. Our estimates at the end of the year included impacts from the disruptions caused by COVID-19. Given the uncertainties around the pandemic, including its duration and potential future disruptions to our supply chain or workforce, it is reasonably possible that the actual impact of the pandemic on contract costs could be materially different than our current estimates. The United States and some other governments have taken steps to provide relief. Where our customer has agreed to reimburse certain costs, such as provided for by the

Coronavirus Aid, Relief, and Economic Security Act (the CARES Act), we have included those recoveries in our estimates of revenue. To the extent the U.S. government provides for reimbursement of additional costs through legislation and the DoD has available funds, we will seek reimbursement as appropriate.

We recognize adjustments in estimated profit on contracts under the cumulative catch-up method. Under this method, the impact of the adjustment on profit recorded to date on a contract is recognized in the period the adjustment is identified. Revenue and profit in future periods of contract performance are recognized using the adjusted estimate. The aggregate impact of adjustments in contract estimates increased our operating earnings (and diluted earnings per share) by $283 ($0.78) in 2020 and $271 ($0.74) in 2019. No adjustment on any one contract was material to the Consolidated Financial Statements in 2020 or 2019.

Consistent with industry practice, we classify assets and liabilities related to long-term contracts as current, even though some of these amounts may not be realized within one year. The timing of revenue recognition, billings and cash collections results in billed accounts receivable, unbilled receivables (contract assets), and customer advances and deposits (contract liabilities) on the Consolidated Balance Sheet. These assets and liabilities are reported on the Consolidated Balance Sheet on a contract-by-contract basis at the end of each reporting period.

Reorganization of Operating Segments and Composition of Reporting Units. Effective December 31, 2020, for segment reporting purposes, we reorganized our Information Technology and Mission Systems operating segments into a single segment: Technologies. This reorganization reflects our evolving strategic focus on the combined capabilities of the businesses to meet the customer demand for large-scale, end-to-end highly engineered solutions. Our company now has four operating segments: Aerospace, Marine Systems, Combat Systems and Technologies. We refer to the latter three collectively as our defense segments.

This reorganization similarly changed the composition of our reporting units. Accordingly, goodwill of the Information Technology and Mission Systems reporting units was combined and assigned to the Technologies reporting unit. We performed goodwill impairment assessments immediately prior to and following the change. The results indicated that no impairment existed at the former Information Technology and Mission Systems reporting units prior to the change and the Technologies reporting unit following the change.

Long-lived Assets and Goodwill. We review long-lived assets, including intangible assets subject to amortization, for impairment whenever events or changes in circumstances indicate that the carrying value of the assets may not be recoverable. We assess the recoverability of the carrying value of assets held for use based on a review of undiscounted projected cash flows. Impairment losses, where identified, are measured as the excess of the carrying value of the long-lived assets over the estimated fair value as determined by discounted cash flows.

The COVID-19 pandemic has caused significant disruptions to national and global economies and government activities, which has impacted our businesses. As of the end of the year, we have not identified a triggering event requiring an impairment test for our goodwill, intangibles or other long-lived assets. In our Aerospace segment, which has experienced a more significant impact from the pandemic, we do not believe the impact represents a longer-term change that would indicate that the carrying value of the segment's intangibles and long-lived assets may not be recoverable or that the Aerospace reporting unit's estimated fair value has been significantly affected.

Goodwill represents the purchase price paid in excess of the fair value of net tangible and intangible assets acquired in a business combination. We review goodwill for impairment annually at each of our reporting units or when circumstances indicate that the likelihood of an impairment is greater than 50%. Such circumstances include a significant adverse change in the business climate for one of our reporting units or a decision to dispose of a reporting unit or a significant portion of a reporting unit. Our reporting units are consistent with our operating segments in Note S to the Consolidated Financial Statements in Item 8. We use both qualitative and quantitative approaches when testing goodwill for impairment. When determining the approach to be used, we consider the current facts and circumstances of each reporting unit as well as the excess of each reporting unit's estimated fair value over its carrying value based on our most recent quantitative assessments. Our qualitative approach evaluates the business environment and various events impacting the reporting unit including, but not limited to, macroeconomic conditions, changes in the business environment and reporting unit-specific events. If, based on the qualitative assessment, we determine that it is more likely than not that the fair value of a reporting unit is greater than its carrying value, then a quantitative assessment is not necessary. However, if a quantitative assessment is determined to be necessary, we compare the fair value of a reporting unit to its carrying value and, if necessary, recognize an impairment loss for the amount by which the carrying value exceeds the reporting unit's fair value.

Our estimate of fair value is based primarily on the discounted cash flows of the underlying operations and requires the use of judgment by management. The process requires numerous assumptions, including the timing of work embedded in our backlog, our performance and profitability under our contracts, our success in securing future business, the appropriate risk-adjusted interest rate used to discount the projected cash flows, and terminal value growth rates applied to the final year of projected cash flows. Due to the variables inherent in our estimates of fair value, differences in assumptions may have a material effect on the result of our impairment analysis. To assess the reasonableness of our discounted cash flows, we compare the sum of our reporting units' fair value to our market capitalization. Additionally, we evaluate the reasonableness of each reporting unit's fair value by comparing the fair value to comparable peer companies and recent comparable market transactions.

As of December 31, 2020, we completed qualitative assessments for our Aerospace, Marine Systems and Combat Systems reporting units as the estimated fair values of each of these reporting units significantly exceeded the respective carrying values based on our most recent quantitative assessments, which were performed as of December 31, 2018. Our qualitative assessments, including consideration of the impact of the COVID-19 pandemic, did not present indicators of impairment for these reporting units. As of December 31, 2020, we completed a quantitative assessment for our Technologies reporting unit, and the fair value was well in excess of its carrying value.

Commitments and Contingencies. We are subject to litigation and other legal proceedings arising either from the normal course of business or under provisions relating to the protection of the environment. Estimating liabilities and costs associated with these matters requires the use of judgment. We record a charge against earnings when a liability associated with claims or pending or threatened litigation is probable and when our exposure is reasonably estimable. The ultimate resolution of our exposure related to these matters may change as further facts and circumstances become known.

Retirement Plans. Our pension and other post-retirement benefit costs and obligations depend on several assumptions and estimates. The key assumption is the interest rates used to discount estimated future liabilities. We base the discount rates on a current yield curve developed from a portfolio of high-quality, fixed-income investments with maturities consistent with the projected benefit payout period.

Retirement plan assumptions, including the discount rates, are based on our best judgment, including consideration of current and future market conditions. In the event any of the assumptions change, pension and other post-retirement benefit cost could increase or decrease. For further discussion about our retirement plan assumptions, see Note R to the Consolidated Financial Statements in Item 8.

As described under Other Contract Costs in Note A to the Consolidated Financial Statements in Item 8, our contractual arrangements with the U.S. government provide for the recovery of benefit costs for our government retirement plans. We have elected to defer recognition of the benefit costs until such costs can be allocated to contracts. Therefore, the impact of annual changes in financial reporting assumptions on the retirement benefit cost for these plans does not immediately affect our operating results.

Accounting Standards Updates. See Note A to the Consolidated Financial Statements in Item 8 for information regarding the accounting standard we adopted in 2020 and other new accounting standards that have been issued by the Financial Accounting Standards Board (FASB) but are not effective until after December 31, 2020.

GUARANTOR FINANCIAL INFORMATION

The fixed- and floating-rate notes described in Note K to the Consolidated Financial Statements in Item 8, issued by General Dynamics Corporation (the parent), are fully and unconditionally guaranteed on an unsecured, joint and several basis by several of the parent's 100%-owned subsidiaries (the guarantors). The guarantee of each guarantor ranks equally in right of payment with all other existing and future senior unsecured indebtedness of such guarantor. A listing of the guarantors is included in an exhibit to this Form 10-K.

Because the parent is a holding company, its cash flow and ability to service its debt, including the fixed- and floating-rate notes, depends on the performance of its subsidiaries and the ability of those subsidiaries to distribute cash to the parent, whether by dividends, loans or otherwise. Holders of the fixed- and floating-rate notes have a direct claim only against the parent and the guarantors.

Under the relevant indenture, the guarantee of each guarantor is limited to the maximum amount that can be guaranteed without rendering the guarantee voidable under applicable laws relating to fraudulent conveyance or fraudulent transfer or similar laws affecting the rights of creditors generally. Each indenture also provides that, in the event (1) of a merger, consolidation or sale or disposition of all or substantially all of the assets of a guarantor (other than a transaction with the parent or any of its subsidiaries) or (2) there occurs a transfer, sale or other disposition of the voting stock of a guarantor so that the guarantor is no longer a subsidiary of the parent, then the guarantor or the entity acquiring the assets (in the event of the sale or other disposition of all or substantially all of the assets of a guarantor) will be released and relieved of any obligations under the guarantee.

The following summarized financial information presents the parent and guarantors (collectively, the combined obligor group) on a combined basis. The summarized financial information of the combined obligor group excludes net investment in and earnings of subsidiaries related to interests held by the combined obligor group in subsidiaries that are not guarantors of the notes.

STATEMENT OF EARNINGS INFORMATION

Year Ended December 31	2020
Revenue	$ 13,065
Operating costs and expenses, excluding G&A	(11,190)
Net Earnings	738

BALANCE SHEET INFORMATION

	December 31, 2020	December 31, 2019
Cash and equivalents	$ 1,952	$ 606
Other current assets	2,894	2,875
Noncurrent assets	3,082	2,549
Total assets	$ 7,928	$ 6,030
Short-term debt and current portion of long-term debt	$ 2,998	$ 2,497
Other current liabilities	2,944	2,642
Long-term debt	9,922	8,965
Other noncurrent liabilities	5,645	5,772
Total liabilities	$ 21,509	$ 19,876

The summarized balance sheet information presented above includes the funded status of the company's primary qualified U.S. government pension plans as the parent has the ultimate obligation for the plans.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to market risk, primarily from foreign currency exchange rates, interest rates, commodity prices and investments. See Note N to the Consolidated Financial Statements in Item 8 for a discussion of these risks. The following quantifies the market risk exposure arising from hypothetical changes in foreign currency exchange rates and interest rates.

We had notional forward exchange and interest rate swap contracts outstanding of $9.4 billion and $5 billion on December 31, 2020 and 2019, respectively. A 10% unfavorable rate movement in our portfolio of forward exchange and interest rate swap contracts would have resulted in the following hypothetical, incremental pretax gains (losses):

(Dollars in millions)	2020	2019
Recognized	$ 44	$ 60
Unrecognized	(344)	(161)

Foreign Currency Risk. Our exchange-rate sensitivity relates primarily to changes in the Canadian dollar, euro and Swiss franc exchange rates. While the hypothetical, incremental pretax losses in the table above have increased significantly from 2019, we do not believe this represents a meaningful increase in our risk profile as these losses and gains would be offset by corresponding gains and losses in the remeasurement of the underlying transactions being hedged. We believe these foreign currency forward exchange contracts and the offsetting underlying commitments, when taken together, do not create material market risk.

Interest Rate Risk. Our financial instruments subject to interest rate risk include fixed- and floating-rate long-term debt obligations. On December 31, 2020, we had $12.5 billion par value of fixed-rate debt and $500 of floating-rate notes. Our fixed-rate debt obligations are not putable, and we do not trade these securities in the market. A 10% unfavorable interest rate movement would not have a material impact on the fair value of our fixed-rate debt. As described in Note K to the Consolidated Financial Statements in Item 8, we entered into derivative financial instruments, specifically interest rate swap contracts, to eliminate our floating-rate interest risk.

Investment Risk. Our investment policy allows for purchases of fixed-income securities with an investment-grade rating and a maximum maturity of up to five years. On December 31, 2020 and 2019, we held $2.8 billion and $902 in cash and equivalents, respectively, but held no marketable securities other than those held in trust to meet some of our obligations under workers' compensation and non-qualified pension plans. On December 31, 2020 and 2019, we held marketable securities in trust of $211 and $207, respectively. These marketable securities are reflected at fair value on the Consolidated Balance Sheet in other current and noncurrent assets.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

CONSOLIDATED STATEMENT OF EARNINGS

	Year Ended December 31		
(Dollars in millions, except per-share amounts)	2020	2019*	2018*
Revenue:			
Products	$ 22,188	$ 23,130	$ 20,149
Services	15,737	16,220	16,044
	37,925	39,350	36,193
Operating costs and expenses:			
Products	(18,192)	(18,611)	(15,926)
Services	(13,408)	(13,752)	(13,610)
General and administrative (G&A)	(2,192)	(2,417)	(2,263)
	(33,792)	(34,780)	(31,799)
Operating earnings	4,133	4,570	4,394
Other, net	82	92	47
Interest, net	(477)	(460)	(356)
Earnings from continuing operations before income tax	3,738	4,202	4,085
Provision for income tax, net	(571)	(718)	(727)
Earnings from continuing operations	3,167	3,484	3,358
Discontinued operations, net of tax provision of $13 in 2018	—	—	(13)
Net earnings	$ 3,167	$ 3,484	$ 3,345
Earnings per share			
Basic:			
Continuing operations	$ 11.04	$ 12.09	$ 11.37
Discontinued operations	—	—	(0.04)
Net earnings	$ 11.04	$ 12.09	$ 11.33
Diluted:			
Continuing operations	$ 11.00	$ 11.98	$ 11.22
Discontinued operations	—	—	(0.04)
Net earnings	$ 11.00	$ 11.98	$ 11.18

The accompanying Notes to Consolidated Financial Statements are an integral part of these financial statements.

* Prior-period information has been restated for the retrospective application of a change in accounting principle related to the amortization of actuarial gains and losses for our qualified U.S. government pension plans, which we adopted in the fourth quarter of 2020. For further discussion of this change in accounting principle, see Note T to the Consolidated Financial Statements.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

(Dollars in millions)	Year Ended December 31 2020	2019*	2018*
Net earnings	$ 3,167	$ 3,484	$ 3,345
Gains on cash flow hedges	366	97	36
Foreign currency translation adjustments	353	186	(300)
Change in retirement plans' funded status	(453)	(857)	(45)
Other comprehensive income (loss), pretax	266	(574)	(309)
Benefit for income tax, net	2	156	1
Other comprehensive income (loss), net of tax	268	(418)	(308)
Comprehensive income	$ 3,435	$ 3,066	$ 3,037

The accompanying Notes to Consolidated Financial Statements are an integral part of these financial statements.

* Prior-period information has been restated for the retrospective application of a change in accounting principle related to the amortization of actuarial gains and losses for our qualified U.S. government pension plans, which we adopted in the fourth quarter of 2020. For further discussion of this change in accounting principle, see Note T to the Consolidated Financial Statements.

CONSOLIDATED BALANCE SHEET

(Dollars in millions)	December 31 2020	2019*
ASSETS		
Current assets:		
Cash and equivalents	$ 2,824	$ 902
Accounts receivable	3,161	3,544
Unbilled receivables	8,024	7,857
Inventories	5,745	6,306
Other current assets	1,789	1,679
Total current assets	21,543	20,288
Noncurrent assets:		
Property, plant and equipment, net	5,100	4,475
Intangible assets, net	2,117	2,315
Goodwill	20,053	19,677
Other assets	2,495	2,594
Total noncurrent assets	29,765	29,061
Total assets	$ 51,308	$ 49,349
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Short-term debt and current portion of long-term debt	$ 3,003	$ 2,920
Accounts payable	2,952	3,162
Customer advances and deposits	6,276	7,148
Other current liabilities	3,733	3,571
Total current liabilities	15,964	16,801
Noncurrent liabilities:		
Long-term debt	9,995	9,010
Other liabilities	9,688	9,560
Commitments and contingencies (see Note O)		
Total noncurrent liabilities	19,683	18,570
Shareholders' equity:		
Common stock	482	482
Surplus	3,124	3,039
Retained earnings	33,498	31,633
Treasury stock	(17,893)	(17,358)
Accumulated other comprehensive loss	(3,550)	(3,818)
Total shareholders' equity	15,661	13,978
Total liabilities and shareholders' equity	$ 51,308	$ 49,349

The accompanying Notes to Consolidated Financial Statements are an integral part of these financial statements.

* Prior-period information has been restated for the retrospective application of a change in accounting principle related to the amortization of actuarial gains and losses for our qualified U.S. government pension plans, which we adopted in the fourth quarter of 2020. For further discussion of this change in accounting principle, see Note T to the Consolidated Financial Statements.

CONSOLIDATED STATEMENT OF CASH FLOWS

(Dollars in millions)	Year Ended December 31 2020	2019	2018
Cash flows from operating activities - continuing operations:			
Net earnings	$ 3,167	$ 3,484	$ 3,345
Adjustments to reconcile net earnings to net cash from operating activities:			
Depreciation of property, plant and equipment	523	466	436
Amortization of intangible and finance lease right-of-use assets	355	363	327
Equity-based compensation expense	128	133	140
Deferred income tax (benefit) provision	(127)	92	(3)
Discontinued operations, net of tax	—	—	13
(Increase) decrease in assets, net of effects of business acquisitions:			
Accounts receivable	371	176	417
Unbilled receivables	(116)	(1,303)	(800)
Inventories	502	(376)	(591)
Other current assets	208	8	310
Increase (decrease) in liabilities, net of effects of business acquisitions:			
Accounts payable	(215)	6	(197)
Customer advances and deposits	(707)	(105)	36
Other, net	(231)	37	(285)
Net cash provided by operating activities	3,858	2,981	3,148
Cash flows from investing activities:			
Capital expenditures	(967)	(987)	(690)
Business acquisitions, net of cash acquired	(203)	(19)	(10,099)
Proceeds from sales of assets	171	14	562
Other, net	25	(2)	(7)
Net cash used by investing activities	(974)	(994)	(10,234)
Cash flows from financing activities:			
Proceeds from fixed-rate notes	3,960	—	6,461
Repayment of fixed-rate notes	(2,000)	—	—
Dividends paid	(1,240)	(1,152)	(1,075)
Purchases of common stock	(587)	(231)	(1,769)
Repayment of floating-rate notes	(500)	—	—
(Repayment of) proceeds from credit facility, net	(441)	291	122
Proceeds from commercial paper, gross (maturities greater than 3 months)	420	—	—
Repayment of commercial paper, gross (maturities greater than 3 months)	(420)	—	—
(Repayment of) proceeds from commercial paper, net	—	(850)	850
Proceeds from floating-rate notes	—	—	1,000
Repayment of CSRA accounts receivable purchase agreement	—	—	(450)
Other, net	(95)	(55)	(53)
Net cash (used) provided by financing activities	(903)	(1,997)	5,086
Net cash used by discontinued operations	(59)	(51)	(20)
Net increase (decrease) in cash and equivalents	1,922	(61)	(2,020)
Cash and equivalents at beginning of year	902	963	2,983
Cash and equivalents at end of year	$ 2,824	$ 902	$ 963

The accompanying Notes to Consolidated Financial Statements are an integral part of these financial statements.

CONSOLIDATED STATEMENT OF SHAREHOLDERS' EQUITY

(Dollars in millions)	Common Stock Par	Common Stock Surplus	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Loss	Total Shareholders' Equity
December 31, 2017 (a)	$ 482	$ 2,872	$ 26,509	$ (15,543)	$ (2,519)	$ 11,801
Cumulative-effect adjustments (a) (b)	—	—	573	—	(573)	—
Net earnings	—	—	3,345	—	—	3,345
Cash dividends declared	—	—	(1,101)	—	—	(1,101)
Equity-based awards	—	74	—	105	—	179
Shares purchased	—	—	—	(1,806)	—	(1,806)
Other comprehensive loss (a)	—	—	—	—	(308)	(308)
December 31, 2018 (a)	482	2,946	29,326	(17,244)	(3,400)	12,110
Net earnings	—	—	3,484	—	—	3,484
Cash dividends declared	—	—	(1,177)	—	—	(1,177)
Equity-based awards	—	93	—	70	—	163
Shares purchased	—	—	—	(184)	—	(184)
Other comprehensive loss (a)	—	—	—	—	(418)	(418)
December 31, 2019 (a)	482	3,039	31,633	(17,358)	(3,818)	13,978
Cumulative-effect adjustment (c)	—	—	(37)	—	—	(37)
Net earnings	—	—	3,167	—	—	3,167
Cash dividends declared	—	—	(1,265)	—	—	(1,265)
Equity-based awards	—	85	—	67	—	152
Shares purchased	—	—	—	(602)	—	(602)
Other comprehensive income	—	—	—	—	268	268
December 31, 2020	$ 482	$ 3,124	$ 33,498	$ (17,893)	$ (3,550)	$ 15,661

The accompanying Notes to Consolidated Financial Statements are an integral part of these financial statements.

(a) Prior-period information has been restated for the retrospective application of a change in accounting principle related to the amortization of actuarial gains and losses for our qualified U.S. government pension plans, which we adopted in the fourth quarter of 2020. For further discussion of this change in accounting principle, see Note T to the Consolidated Financial Statements.

(b) Reflects the cumulative effects of Accounting Standards Update (ASU) 2016-01, Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities, and ASU 2018-02, Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income, which we adopted on January 1, 2018.

(c) Reflects the cumulative effect of ASU 2016-13, Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments, which we adopted on January 1, 2020. See Note A for additional details.

A. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Organization. General Dynamics is a global aerospace and defense company that offers a broad portfolio of products and services in business aviation; ship construction and repair; land combat vehicles, weapons systems and munitions; and technology products and services.

Effective December 31, 2020, for segment reporting purposes, we reorganized our Information Technology and Mission Systems operating segments into a single segment: Technologies. This reorganization reflects our evolving strategic focus on the combined capabilities of the businesses to meet the customer demand for large-scale, end-to-end highly engineered solutions. Our company now has four operating segments: Aerospace, Marine Systems, Combat Systems and Technologies. We refer to the latter three collectively as our defense segments. Prior-period segment information has been restated for this change.

Basis of Consolidation and Classification. The Consolidated Financial Statements include the accounts of General Dynamics Corporation and our wholly owned and majority-owned subsidiaries. We eliminate all inter-company balances and transactions in the Consolidated Financial Statements. Some prior-year amounts have been reclassified among financial statement accounts or disclosures to conform to the current-year presentation.

Consistent with industry practice, we classify assets and liabilities related to long-term contracts as current, even though some of these amounts may not be realized within one year.

Further discussion of our significant accounting policies is contained in the other notes to these financial statements.

Use of Estimates and Other Uncertainties. The Coronavirus (COVID-19) pandemic has caused significant disruptions to national and global economies and government activities. Our businesses have been designated as critical infrastructure by the U.S. government and many non-U.S. governments and, as such, are required to stay open. Within our Aerospace segment, quarantine and travel restrictions in connection with the pandemic have impacted the timing of aircraft deliveries, and the economic consequences of COVID-19 have impacted demand. Our defense business has also experienced disruptions, such as customer site closures, travel restrictions and social distancing requirements, which have impacted contract execution. We have instituted various initiatives throughout the company as part of our business continuity programs, and we continue to work to mitigate risk when disruptions occur. While we expect this situation to be temporary, any longer-term impact to our business is currently unknown due to the uncertainty around the pandemic's duration and its broader impact.

The nature of our business requires that we make estimates and assumptions in accordance with U.S. generally accepted accounting principles (GAAP). These estimates and assumptions affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of revenue and expenses during the reporting period. We base our estimates on historical experience, currently available information and various other assumptions that we believe are reasonable under the circumstances. The COVID-19 pandemic has impacted these estimates and assumptions and will continue to do so. The accounting for long-term contracts requires the use of estimates (see Note B). Our estimates at the end of the year included impacts from the disruptions caused by COVID-19. Given the uncertainties around the pandemic, including its duration and potential future disruptions to our supply chain or workforce, it is reasonably possible that the actual impact of the pandemic on contract costs could be materially different than our current estimates. The United States and some other governments have taken steps to provide relief. Where our customer has agreed to reimburse certain costs, such as provided for by the Coronavirus Aid, Relief, and Economic Security Act (the CARES Act), we have included those recoveries in our estimates of revenue. To the extent the U.S. government provides for reimbursement of additional costs through legislation and the U.S. Department of Defense (DoD) has available funds, we will seek reimbursement as appropriate.

Change in Accounting Principle. In the fourth quarter of 2020, we retrospectively changed our accounting method related to the amortization of actuarial gains and losses for our qualified U.S. government pension plans that impacted our prior-period financial statements. See Note T for further discussion of this change in accounting principle.

Discontinued Operations, Net of Tax. On April 3, 2018, we completed our acquisition of CSRA, Inc. (CSRA). See Note C for further discussion of the acquisition. In the third quarter of 2018, we disposed of CSRA operations to address an organizational conflict of interest with respect to services provided to a government customer. In accordance with GAAP, the sale did not result in a gain for financial reporting purposes. However, the sale generated a taxable gain, resulting in tax expense of $13.

Research and Development Expenses. Company-sponsored research and development (R&D) expenses, including Aerospace product-development costs, were $374 in 2020, $466 in 2019 and $502 in 2018. R&D expenses have trended downward over the three-year period with the completion of the G500 and G600 aircraft test programs, offset partially by increased activities associated with the development of the new G700 aircraft model. R&D expenses are included in operating costs and expenses in the Consolidated Statement of Earnings in the period in which they are incurred. Customer-sponsored R&D expenses are charged directly to the related contracts.

The Aerospace segment has cost-sharing arrangements with some of its suppliers that enhance the segment's internal development capabilities and offset a portion of the financial cost associated with the segment's product development efforts. These arrangements explicitly state that supplier contributions are for reimbursement of costs we incur in the development of new aircraft models and technologies, and we retain substantial rights in the products developed under these arrangements. We record amounts received from these cost-sharing arrangements as a reduction of R&D expenses. We have no obligation to refund any amounts received under the agreements regardless of the outcome of the development efforts. Under the typical terms of an agreement, payments received from suppliers for their share of the costs are based on milestones and are recognized as received. Our policy is to defer payments in excess of the costs we have incurred.

Interest, Net. Net interest expense consisted of the following:

Year Ended December 31	2020	2019	2018
Interest expense	$ 489	$ 472	$ 374
Interest income	(12)	(12)	(18)
Interest expense, net	$ 477	$ 460	$ 356

The increase in 2019 is due primarily to the impact of financing the CSRA acquisition, including the issuance of $7.5 billion of fixed- and floating-rate notes in the second quarter of 2018. See Note K for additional information regarding our debt obligations, including interest rates.

Cash and Equivalents and Investments in Debt and Equity Securities. We consider securities with a maturity of three months or less to be cash equivalents. Our cash balances are invested primarily in time deposits rated A-/A3 or higher. Our investments in other securities are included in other current and noncurrent assets on the Consolidated Balance Sheet. We report our equity securities at fair value with subsequent changes in fair value recognized in net earnings. We report our available-for-sale debt securities at fair value with unrealized gains and losses recognized as a component of other comprehensive income in the Consolidated Statement of Comprehensive Income. We had no trading or held-to-maturity debt securities on December 31, 2020 or 2019. See Note E for additional information regarding our investments in debt and equity securities.

Other Contract Costs. Other contract costs represent amounts that are not currently allocable to government contracts, such as a portion of our estimated workers' compensation obligations, other insurance-related assessments, pension and other post-retirement benefits, and environmental expenses. These costs will become allocable to contracts generally after they are paid. We have elected to defer these costs in other current assets on the Consolidated Balance Sheet until they can be allocated to contracts. We expect to recover these costs through ongoing business, including existing backlog and probable follow-on contracts. We regularly assess the probability of recovery of these costs. If the backlog in the future does not support the continued deferral of these costs, the profitability of our remaining contracts could be adversely affected. Other contract costs on December 31, 2020 and 2019, were $499 and $652, respectively.

Long-lived Assets and Goodwill. We review long-lived assets, including intangible assets subject to amortization, for impairment whenever events or changes in circumstances indicate that the carrying value of the assets may not be recoverable. We assess the recoverability of the carrying value of assets held for use based on a review of undiscounted projected cash flows. Impairment losses, where identified, are measured as the excess of the carrying value of the long-lived assets over the estimated fair value as determined by discounted cash flows.

The COVID-19 pandemic has caused significant disruptions to national and global economies and government activities, which has impacted our businesses. As of the end of the year, we have not identified a triggering event requiring an impairment test for our goodwill, intangibles or other long-lived assets. In our Aerospace segment, which has experienced a more significant impact from the pandemic, we do not believe the impact represents a longer-term change that would indicate that the carrying value of the segment's intangibles and long-lived assets may not be recoverable or that the Aerospace reporting unit's estimated fair value has been significantly affected.

Goodwill represents the purchase price paid in excess of the fair value of net tangible and intangible assets acquired in a business combination. We review goodwill for impairment annually at each of our reporting units or when circumstances indicate that the likelihood of an impairment is greater than 50%. Our reporting units are consistent with our operating segments in Note S. We use both qualitative and quantitative approaches when testing goodwill for impairment. When determining the approach to be used, we consider the current facts and circumstances of each reporting unit as well as the excess of each reporting unit's estimated fair value over its carrying value based on our most recent quantitative assessments. Our qualitative approach evaluates the business environment and various events impacting the reporting unit including, but not limited to, macroeconomic conditions, changes in the business environment and reporting unit-specific events. If, based on the qualitative assessment, we determine that it is more likely than not that the fair value of a reporting unit is greater than its carrying value, then a quantitative assessment is not necessary. However, if a quantitative assessment is determined to be necessary, we compare the fair value of a reporting unit to its carrying value and, if necessary, recognize an impairment loss for the amount by which the carrying value exceeds the reporting unit's fair value. Our estimate of fair value is based primarily on the discounted cash flows of the underlying operations.

As of December 31, 2020, we completed qualitative assessments for our Aerospace, Marine Systems and Combat Systems reporting units as the estimated fair values of each of these reporting units significantly exceeded the respective carrying values based on our most recent quantitative assessments, which were performed as of December 31, 2018. Our qualitative assessments, including consideration of the impact of the COVID-19 pandemic, did not present indicators of impairment for these reporting units.

Effective December 31, 2020, we reorganized our Information Technology and Mission Systems operating segments into a single segment: Technologies. This reorganization similarly changed the composition of our reporting units. Accordingly, goodwill of the Information Technology and Mission Systems reporting units was combined and assigned to the Technologies reporting unit. We performed goodwill impairment assessments immediately prior to the change, and the results indicated that no impairment existed at the former Information Technology and Mission Systems reporting units. As of December 31, 2020, we completed a quantitative assessment for our Technologies reporting unit, and the fair value was well in excess of its carrying value. For a summary of our goodwill by reporting unit, see Note C.

Accounting Standards Updates. Effective January 1, 2020, we adopted ASU 2016-13, Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments. ASU 2016-13 significantly changes how entities account for credit losses for financial assets and certain other instruments, including trade receivables and contract assets, that are not measured at fair value through net income. The ASU requires a number of changes to the assessment of credit losses, including the utilization of an expected credit loss model, which requires consideration of a broader range of information to estimate expected credit losses over the entire lifetime of the asset, including losses where probability is considered remote. Additionally, the standard requires the estimation of lifetime expected losses for trade receivables and contract assets that are classified as current. We adopted the standard on a modified retrospective basis and recognized the cumulative effect as a $37 decrease to retained earnings on the date of adoption.

Effective January 1, 2019, we adopted Accounting Standards Codification (ASC) Topic 842, Leases. ASC Topic 842 requires the recognition of lease rights and obligations as assets and liabilities on the balance sheet. Previously, lessees were not required to recognize on the balance sheet assets and liabilities arising from operating leases. As we elected the cumulative-effect adoption method, prior-period information has not been restated.

There are other accounting standards that have been issued by the Financial Accounting Standards Board (FASB) but are not effective until after December 31, 2020. These standards are not expected to have a material impact on our results of operations, financial condition or cash flows.

B. REVENUE

Performance Obligations. A performance obligation is a promise in a contract to transfer a distinct good or service to the customer, and is the unit of account for revenue. A contract's transaction price is allocated to each distinct performance obligation within that contract and recognized as revenue when, or as, the performance obligation is satisfied. The majority of our contracts have a single performance obligation as the promise to transfer the individual goods or services is not separately identifiable from other promises in the contracts and is, therefore, not distinct. Some of our contracts have multiple performance obligations, most commonly due to the contract covering multiple phases of the product life cycle (development, production, maintenance and support). For contracts with multiple performance obligations, we allocate the contract's transaction price to each performance obligation using our best estimate of the standalone selling price of each distinct good or service in the contract. The primary method used to estimate standalone selling price is the expected cost plus a margin approach, under which we forecast our expected costs of satisfying a performance obligation and then add an appropriate margin for that distinct good or service.

Contract modifications are routine in the performance of our contracts. Contracts are often modified to account for changes in contract specifications or requirements. In most instances, contract modifications are for goods or services that are not distinct and, therefore, are accounted for as part of the existing contract.

Our performance obligations are satisfied over time as work progresses or at a point in time. Revenue from products and services transferred to customers over time accounted for 77% of our revenue in 2020, 73% in 2019 and 74% in 2018. Substantially all of our revenue in the defense segments is recognized over time, because control is transferred continuously to our customers. Typically, revenue is recognized over time using costs incurred to date relative to total estimated costs at completion to measure progress toward satisfying our performance obligations. Incurred cost represents work performed, which corresponds with, and thereby best depicts, the transfer of control to the customer. Contract costs include labor, material, overhead and, when appropriate, G&A expenses.

Revenue from goods and services transferred to customers at a point in time accounted for 23% of our revenue in 2020, 27% in 2019 and 26% in 2018. Most of our revenue recognized at a point in time is for the manufacture of business jet aircraft in our Aerospace segment. Revenue on these contracts is recognized when the customer obtains control of the asset, which is generally upon delivery and acceptance by the customer of the fully outfitted aircraft.

On December 31, 2020, we had $89.5 billion of remaining performance obligations, which we also refer to as total backlog. We expect to recognize approximately 35% of our remaining performance obligations as revenue in 2021, an additional 30% by 2023 and the balance thereafter.

Contract Estimates. The majority of our revenue is derived from long-term contracts and programs that can span several years. Accounting for long-term contracts and programs involves the use of various techniques to estimate total contract revenue and costs. For long-term contracts, we estimate the profit on a contract as the difference between the total estimated revenue and expected costs to complete a contract and recognize that profit over the life of the contract.

Contract estimates are based on various assumptions to project the outcome of future events that often span several years. These assumptions include labor productivity and availability; the complexity of the work to be performed; the cost and availability of materials; the performance of subcontractors; and the availability and timing of funding from the customer.

The nature of our contracts gives rise to several types of variable consideration, including claims and award and incentive fees. We include in our contract estimates additional revenue for submitted contract modifications or claims against the customer when we believe we have an enforceable right to the modification or claim, the amount can be estimated reliably and its realization is probable. In evaluating these criteria, we consider the contractual/legal basis for the claim, the cause of any additional costs incurred, the reasonableness of those costs and the objective evidence available to support the claim. We include award or incentive fees in the estimated transaction price when there is a basis to reasonably estimate the amount of the fee. These estimates are based on historical award experience, anticipated performance and our best judgment at the time. Because of our certainty in estimating these amounts, they are included in the transaction price of our contracts and the associated remaining performance obligations.

As a significant change in one or more of these estimates could affect the profitability of our contracts, we review and update our contract-related estimates regularly. We recognize adjustments in estimated profit on contracts under the cumulative catch-up method. Under this method, the impact of the adjustment on profit recorded to date on a contract is recognized in the period the adjustment is identified. Revenue and profit in future periods of contract performance are recognized using the adjusted estimate. If at any time the estimate of contract profitability indicates an anticipated loss on the contract, we recognize the total loss in the period it is identified.

The impact of adjustments in contract estimates on our operating earnings can be reflected in either operating costs and expenses or revenue. The aggregate impact of adjustments in contract estimates increased our revenue, operating earnings and diluted earnings per share as follows:

Year Ended December 31	2020	2019	2018
Revenue	$ 389	$ 342	$ 377
Operating earnings	283	271	345
Diluted earnings per share	$ 0.78	$ 0.74	$ 0.91

No adjustment on any one contract was material to the Consolidated Financial Statements in 2020, 2019 or 2018.

Revenue by Category. Our portfolio of products and services consists of approximately 10,000 active contracts. The following series of tables presents our revenue disaggregated by several categories.

Revenue by major products and services was as follows:

Year Ended December 31	2020	2019	2018
Aircraft manufacturing	$ 6,115	$ 7,541	$ 6,262
Aircraft services and completions	1,960	2,260	2,193
Total Aerospace	8,075	9,801	8,455
Nuclear-powered submarines	6,938	6,254	5,712
Surface ships	2,055	1,912	1,872
Repair and other services	986	1,017	918
Total Marine Systems	9,979	9,183	8,502
Military vehicles	4,687	4,620	4,027
Weapons systems, armament and munitions	1,991	1,906	1,798
Engineering and other services	545	481	416
Total Combat Systems	7,223	7,007	6,241
Information technology (IT) services	7,892	8,422	8,269
C4ISR* solutions	4,756	4,937	4,726
Total Technologies	12,648	13,359	12,995
Total revenue	$ 37,925	$ 39,350	$ 36,193

* Command, control, communications, computers, intelligence, surveillance and reconnaissance

Revenue by contract type was as follows:

Year Ended December 31, 2020	Aerospace	Marine Systems	Combat Systems	Technologies	Total Revenue
Fixed-price	$ 7,402	$ 6,924	$ 6,159	$ 5,794	$ 26,279
Cost-reimbursement	—	3,045	997	5,300	9,342
Time-and-materials	673	10	67	1,554	2,304
Total revenue	$ 8,075	$ 9,979	$ 7,223	$ 12,648	$ 37,925
Year Ended December 31, 2019					
Fixed-price	$ 8,949	$ 6,331	$ 6,049	$ 6,344	$ 27,673
Cost-reimbursement	—	2,839	894	5,263	8,996
Time-and-materials	852	13	64	1,752	2,681
Total revenue	$ 9,801	$ 9,183	$ 7,007	$ 13,359	$ 39,350
Year Ended December 31, 2018					
Fixed-price	$ 7,600	$ 5,493	$ 5,406	$ 6,107	$ 24,606
Cost-reimbursement	—	3,004	800	5,283	9,087
Time-and-materials	855	5	35	1,605	2,500
Total revenue	$ 8,455	$ 8,502	$ 6,241	$ 12,995	$ 36,193

Our segments operate under fixed-price, cost-reimbursement and time-and-materials contracts. Our production contracts are primarily fixed-price. Under these contracts, we agree to perform a specific scope of work for a fixed amount. Contracts for research, engineering, repair and maintenance, and other services are typically cost-reimbursement or time-and-materials. Under cost-reimbursement contracts, the customer reimburses contract costs incurred and pays a fixed, incentive or award-based fee. These fees are determined by our ability to achieve targets set in the contract, such as cost, quality, schedule and performance. Under time-and-materials contracts, the customer pays a fixed hourly rate for direct labor and generally reimburses us for the cost of materials.

Each of these contract types presents advantages and disadvantages. Typically, we assume more risk with fixed-price contracts. However, these types of contracts offer additional profits when we complete the work for less than originally estimated. Cost-reimbursement contracts generally subject us to lower risk. Accordingly, the associated base fees are usually lower than fees earned on fixed-price contracts. Under time-and-materials contracts, our profit may vary if actual labor-hour rates vary significantly from the negotiated rates. Also, because these contracts can provide little or no fee for managing material costs, the content mix can impact profitability.

Revenue by customer was as follows:

Year Ended December 31, 2020	Aerospace	Marine Systems	Combat Systems	Technologies	Total Revenue
U.S. government:					
Department of Defense (DoD)	$ 394	$ 9,656	$ 3,813	$ 6,977	$ 20,840
Non-DoD	—	9	12	4,705	4,726
Foreign Military Sales (FMS)	119	206	366	46	737
Total U.S. government	513	9,871	4,191	11,728	26,303
U.S. commercial	4,268	97	254	272	4,891
Non-U.S. government	221	9	2,704	551	3,485
Non-U.S. commercial	3,073	2	74	97	3,246
Total revenue	$ 8,075	$ 9,979	$ 7,223	$ 12,648	$ 37,925
Year Ended December 31, 2019					
U.S. government:					
DoD	$ 305	$ 8,837	$ 3,695	$ 7,027	$ 19,864
Non-DoD	88	2	13	5,151	5,254
FMS	105	188	340	56	689
Total U.S. government	498	9,027	4,048	12,234	25,807
U.S. commercial	5,270	142	229	327	5,968
Non-U.S. government	399	9	2,663	673	3,744
Non-U.S. commercial	3,634	5	67	125	3,831
Total revenue	$ 9,801	$ 9,183	$ 7,007	$ 13,359	$ 39,350
Year Ended December 31, 2018					
U.S. government:					
DoD	$ 236	$ 8,098	$ 2,903	$ 6,437	$ 17,674
Non-DoD	—	2	8	5,296	5,306
FMS	98	145	317	66	626
Total U.S. government	334	8,245	3,228	11,799	23,606
U.S. commercial	3,983	245	251	301	4,780
Non-U.S. government	546	10	2,698	743	3,997
Non-U.S. commercial	3,592	2	64	152	3,810
Total revenue	$ 8,455	$ 8,502	$ 6,241	$ 12,995	$ 36,193

Contract Balances. The timing of revenue recognition, billings and cash collections results in billed accounts receivable, unbilled receivables (contract assets), and customer advances and deposits (contract liabilities) on the Consolidated Balance Sheet. In our defense segments, amounts are billed as work progresses in accordance with agreed-upon contractual terms, either at periodic intervals (e.g., biweekly or monthly) or upon achievement of contractual milestones. Generally, billing occurs subsequent to revenue recognition, resulting in contract assets. However, we sometimes receive advances or deposits from our customers, particularly on our international contracts, before revenue is recognized, resulting in contract liabilities. These assets and liabilities are reported on the Consolidated Balance Sheet on a contract-by-contract basis at the end of each reporting period. In our Aerospace segment, we generally receive deposits from customers upon contract execution and upon achievement of contractual milestones. These deposits are liquidated when revenue is recognized. Changes in the contract asset and liability balances during the year ended December 31, 2020, were not materially impacted by any other factors.

Revenue recognized in 2020, 2019 and 2018 that was included in the contract liability balance at the beginning of each year was $3.8 billion, $4.5 billion and $4.3 billion, respectively. This revenue represented primarily the sale of business jet aircraft.

C. ACQUISITIONS AND DIVESTITURES, GOODWILL, AND INTANGIBLE ASSETS

Acquisitions and Divestitures
In 2020, we acquired three businesses in our Aerospace segment and two businesses in our Combat Systems segment for an aggregate of approximately $205.

In 2019, we acquired two businesses in our Aerospace segment and a business in our Technologies segment for an aggregate of approximately $20.

In 2018, in addition to the acquisition of CSRA (described below), we acquired three businesses in our Aerospace segment, a business in our Combat Systems segment and a business in our Technologies segment for an aggregate of approximately $400.

The operating results of these acquisitions have been included with our reported results since the respective closing dates. The purchase prices of the acquisitions have been allocated to the estimated fair value of net tangible and intangible assets acquired, with any excess purchase price recorded as goodwill.

In 2020, we completed the sale of a business in our Aerospace segment and two businesses in our Technologies segment, one of which was classified as held for sale on the Consolidated Balance Sheet on December 31, 2019. In 2019, we completed the sale of a business in our Technologies segment that was classified as held for sale on the Consolidated Balance Sheet on December 31, 2018. In 2018, we completed the sale of three businesses in our Technologies segment: a commercial health products business, CSRA operations that we were required by a government customer to dispose of to address an organizational conflict of interest with respect to services provided to the customer and a public-facing contact-center business.

CSRA Acquisition
On April 3, 2018, we acquired 100% of the outstanding shares of CSRA for $41.25 per share in cash plus the assumption of outstanding net debt. CSRA is a provider of IT solutions to the defense, intelligence and federal civilian markets and is included in our Technologies segment.

Fair Value of Net Assets Acquired. The following table summarizes the allocation of the $9.7 billion cash purchase price to the estimated fair values of the assets acquired and liabilities assumed on the acquisition date, with the excess recorded as goodwill:

Cash and equivalents	$	45
Accounts receivable		155
Unbilled receivables		415
Other current assets		303
Property, plant and equipment, net		326
Intangible assets, net		2,066
Goodwill		7,935
Other noncurrent assets		369
Total assets	$	11,614
Accounts payable	$	(135)
Customer advances and deposits		(151)
Current lease obligation		(51)
Other current liabilities		(434)
Noncurrent lease obligation		(207)
Noncurrent deferred tax liability		(355)
Other noncurrent liabilities		(532)
Total liabilities	$	(1,865)
Net assets acquired	$	9,749

Pro Forma Information (Unaudited). The following pro forma information presents our consolidated revenue and earnings from continuing operations as if the acquisition of CSRA and the related financing transactions had occurred on January 1, 2017:

Year Ended December 31		2018
Revenue	$	37,534
Earnings from continuing operations		3,390
Diluted earnings per share from continuing operations	$	11.33

The pro forma information was prepared by combining our reported historical results with the historical results of CSRA for the pre-acquisition periods. In addition, the reported historical amounts were adjusted for the following items, net of associated tax effects:

- The impact of acquisition financing.
- The removal of CSRA operations that we were required by a government customer to dispose of to address an organizational conflict of interest with respect to services provided to the customer.
- The removal of CSRA's historical pre-acquisition intangible asset amortization expense and debt-related interest expense.
- The impact of intangible asset amortization expense assuming our estimate of fair value was applied on January 1, 2017.
- The payment of acquisition-related costs assuming they were incurred on January 1, 2017.

The pro forma information does not reflect the realization of expected cost savings or synergies from the acquisition, and does not reflect what our combined results of operations would have been had the acquisition occurred on January 1, 2017.

Goodwill

The changes in the carrying amount of goodwill by reporting unit were as follows:

	Aerospace	Marine Systems	Combat Systems	Information Technology	Mission Systems	Technologies	Total Goodwill
December 31, 2018 (a)	$ 2,813	$ 297	$ 2,633	$ 9,622	$ 4,229	$ —	$ 19,594
Acquisitions/ divestitures (b)	3	—	15	77	6	—	101
Other (c)	15	—	33	1	(67)	—	(18)
December 31, 2019 (a)	2,831	297	2,681	9,700	4,168	—	19,677
Acquisitions (b)	72	—	65	—	—	—	137
Other (c)	162	—	40	46	(9)	—	239
Change in reporting unit composition (d)	—	—	—	(9,746)	(4,159)	13,905	—
December 31, 2020 (e)	$ 3,065	$ 297	$ 2,786	$ —	$ —	$ 13,905	$ 20,053

(a) Goodwill in the Information Technology and Mission Systems reporting units is net of $536 and $1.3 billion of accumulated impairment losses, respectively.

(b) Includes adjustments during the purchase price allocation period.

(c) Consists primarily of adjustments for foreign currency translation and for the allocation of goodwill to operations classified as held for sale.

(d) Effective December 31, 2020, we reorganized our Information Technology and Mission Systems operating segments into a single Technologies segment. See Note A for additional information regarding the segment reorganization. This reorganization similarly changed the composition of our reporting units. Accordingly, goodwill of the Information Technology and Mission Systems reporting units was combined and assigned to the Technologies reporting unit.

(e) Goodwill in the Technologies reporting unit is net of $1.8 billion of accumulated impairment losses.

Intangible Assets

Intangible assets consisted of the following:

December 31	Gross Carrying Amount (a) 2020	Accumulated Amortization 2020	Net Carrying Amount 2020	Gross Carrying Amount (a) 2019	Accumulated Amortization 2019	Net Carrying Amount 2019
Contract and program intangible assets (b)	$ 3,399	$ (1,600)	$ 1,799	$ 3,776	$ (1,779)	$ 1,997
Trade names and trademarks	516	(229)	287	474	(195)	279
Technology and software	134	(106)	28	164	(126)	38
Other intangible assets	161	(158)	3	159	(158)	1
Total intangible assets	$ 4,210	$ (2,093)	$ 2,117	$ 4,573	$ (2,258)	$ 2,315

(a) Changes in gross carrying amounts consist primarily of adjustments for write-offs of fully amortized intangible assets, acquired intangible assets and foreign currency translation.

(b) Consists of acquired backlog and probable follow-on work and associated customer relationships.

We did not recognize any impairments of our intangible assets in 2020, 2019 or 2018. The amortization lives (in years) of our intangible assets on December 31, 2020, were as follows:

Intangible Asset	Range of Amortization Life
Contract and program intangible assets	7-30
Trade names and trademarks	30
Technology and software	5-15
Other intangible assets	7

Amortization expense is included in operating costs and expenses in the Consolidated Statement of Earnings. Amortization expense for intangible assets was $261 in 2020, $277 in 2019 and $270 in 2018. We expect to record annual amortization expense over the next five years as follows:

Year Ended December 31	Amortization Expense
2021	$ 221
2022	197
2023	180
2024	170
2025	162

D. EARNINGS PER SHARE

We compute basic earnings per share (EPS) using net earnings for the period and the weighted average number of common shares outstanding during the period. Basic weighted average shares outstanding have decreased in 2020 and 2019 due to share repurchases. See Note M for further discussion of our share repurchases. Diluted EPS incorporates the additional shares issuable upon the assumed exercise of stock options and the release of restricted stock and restricted stock units (RSUs).

Basic and diluted weighted average shares outstanding were as follows (in thousands):

Year Ended December 31	2020	2019	2018
Basic weighted average shares outstanding	286,922	288,286	295,262
Dilutive effect of stock options and restricted stock/RSUs*	991	2,550	3,898
Diluted weighted average shares outstanding	287,913	290,836	299,160

* Excludes outstanding options to purchase shares of common stock that had exercise prices in excess of the average market price of our common stock during the year and, therefore, the effect of including these options would be antidilutive. These options totaled 7,159 in 2020, 4,985 in 2019 and 3,143 in 2018.

E. FAIR VALUE

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in the principal or most advantageous market in an orderly transaction between marketplace participants. Various valuation approaches can be used to determine fair value, each requiring different valuation inputs. The following hierarchy classifies the inputs used to determine fair value into three levels:

- Level 1 - quoted prices in active markets for identical assets or liabilities.
- Level 2 - inputs, other than quoted prices, observable by a marketplace participant either directly or indirectly.
- Level 3 - unobservable inputs significant to the fair value measurement.

We did not have any significant non-financial assets or liabilities measured at fair value on December 31, 2020 or 2019.

Our financial instruments include cash and equivalents, accounts receivable and payable, marketable securities held in trust and other investments, short- and long-term debt, and derivative financial instruments. The carrying values of cash and equivalents and accounts receivable and payable on the Consolidated Balance Sheet approximate their fair value. The following tables present the fair values of our other financial assets and liabilities on December 31, 2020 and 2019, and the basis for determining their fair values:

Financial Assets (Liabilities)	Carrying Value	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
	December 31, 2020				
Measured at fair value:					
Marketable securities held in trust:					
Cash and equivalents	$ 19	$ 19	$ 17	$ 2	$ —
Available-for-sale debt securities	134	134	—	134	—
Equity securities	58	58	58	—	—
Other investments	9	9	—	—	9
Cash flow hedges	419	419	—	419	—
Measured at amortized cost:					
Short- and long-term debt principal	(13,117)	(14,606)	—	(14,606)	—
	December 31, 2019				
Measured at fair value:					
Marketable securities held in trust:					
Cash and equivalents	$ 24	$ 24	$ 11	$ 13	$ —
Available-for-sale debt securities	129	129	—	129	—
Equity securities	54	54	54	—	—
Other investments	4	4	—	—	4
Cash flow hedges	26	26	—	26	—
Measured at amortized cost:					
Short- and long-term debt principal	(12,005)	(12,339)	—	(12,339)	—

Our Level 1 assets include investments in publicly traded equity securities valued using quoted prices from the market exchanges. The fair value of our Level 2 assets and liabilities, which consist primarily of fixed-income securities, cash flow hedge assets and our fixed-rate notes, is determined under a market approach using valuation models that incorporate observable inputs such as interest rates, bond yields and quoted prices for similar assets. Our Level 3 assets include direct private equity investments that are measured using inputs unobservable to a marketplace participant.

F. INCOME TAXES

Income Tax Provision. We calculate our provision for federal, state and foreign income taxes based on current tax law. The following is a summary of our net provision for income taxes for continuing operations:

Year Ended December 31	2020	2019	2018
Current:			
U.S. federal	$ 558	$ 471	$ 587
State	8	36	48
Foreign	132	119	95
Total current	698	626	730
Deferred:			
U.S. federal	(130)	49	(37)
State	(2)	1	8
Foreign	5	42	26
Total deferred	(127)	92	(3)
Provision for income taxes, net	$ 571	$ 718	$ 727
Net income tax payments	$ 764	$ 572	$ 532

The reported tax provision differs from the amounts paid because some income and expense items are recognized in different time periods for financial reporting than for income tax purposes. State and local income taxes allocable to U.S. government contracts are included in operating costs and expenses in the Consolidated Statement of Earnings and, therefore, are not included in the provision above.

The reconciliation from the statutory federal income tax rate to our effective income tax rate follows:

Year Ended December 31	2020	2019	2018
Statutory federal income tax rate	21.0%	21.0%	21.0%
Domestic tax credits	(4.6)	(2.0)	(1.1)
Equity-based compensation	(0.2)	(1.1)	(1.1)
Contract close-outs	—	—	(0.5)
Foreign derived intangible income	(2.1)	(1.4)	(1.2)
State tax on commercial operations, net of federal benefits	0.1	0.7	1.1
Global impact of international operations	1.9	0.2	0.6
Other, net	(0.8)	(0.3)	(1.0)
Effective income tax rate	15.3%	17.1%	17.8%

Net Deferred Tax Liability. The tax effects of temporary differences between reported earnings and taxable income consisted of the following:

December 31	2020	2019
Retirement benefits	$ 1,042	$ 990
Lease liabilities	373	418
Tax loss and credit carryforwards	311	323
Salaries and wages	259	167
Workers' compensation	167	148
Other	373	367
Deferred assets	2,525	2,413
Valuation allowances	(273)	(291)
Net deferred assets	$ 2,252	$ 2,122
Intangible assets	$ (1,067)	$ (1,070)
Lease right-of-use assets	(379)	(418)
Contract accounting methods	(311)	(375)
Property, plant and equipment	(270)	(291)
Capital Construction Fund qualified ships	(59)	(164)
Other	(590)	(359)
Deferred liabilities	$ (2,676)	$ (2,677)
Net deferred tax liability	$ (424)	$ (555)

Our deferred tax assets and liabilities are included in other noncurrent assets and liabilities on the Consolidated Balance Sheet. Our net deferred tax liability consisted of the following:

December 31	2020	2019
Deferred tax asset	$ 37	$ 33
Deferred tax liability	(461)	(588)
Net deferred tax liability	$ (424)	$ (555)

We believe it is more likely than not that we will generate sufficient taxable income in future periods to realize our deferred tax assets, subject to the valuation allowances recognized.

Our deferred tax balance associated with our retirement benefits includes a deferred tax asset of $1.2 billion on December 31, 2020 and $1.1 billion on December 31, 2019, related to the amounts recorded in accumulated other comprehensive loss (AOCL) to recognize the funded status of our retirement plans. See Notes M and R for additional details.

One of our deferred tax liabilities results from our participation in the Capital Construction Fund (CCF), a program established by the U.S. government and administered by the Maritime Administration that supports the acquisition, construction, reconstruction or operation of U.S. flag merchant marine vessels. The program allows us to defer federal and state income taxes on earnings derived from eligible programs as long as the proceeds are deposited in the fund and withdrawals are used for qualified activities. We had U.S. government accounts receivable pledged (and thereby deposited) to the CCF of $295 and $340 on December 31, 2020 and 2019, respectively.

On December 31, 2020, we had net operating loss carryforwards of $1.1 billion, substantially all of which are associated with jurisdictions that have an indefinite carryforward period.

Tax Uncertainties. We participate in the Internal Revenue Service (IRS) Compliance Assurance Process (CAP), a real-time audit of our consolidated federal corporate income tax return. The IRS has examined our consolidated federal income tax returns through 2019.

For all periods open to examination by tax authorities, we periodically assess our liabilities and contingencies based on the latest available information. Where we believe there is more than a 50% chance that our tax position will not be sustained, we record our best estimate of the resulting tax liability, including interest, in the Consolidated Financial Statements. We include any interest or penalties incurred in connection with income taxes as part of income tax expense.

Based on all known facts and circumstances and current tax law, we believe the total amount of any unrecognized tax benefits on December 31, 2020, was not material to our results of operations, financial condition or cash flows. In addition, there are no tax positions for which it is reasonably possible that the unrecognized tax benefits will vary significantly over the next 12 months, producing, individually or in the aggregate, a material effect on our results of operations, financial condition or cash flows.

G. ACCOUNTS RECEIVABLE

Accounts receivable represent amounts billed and currently due from customers. Payment is typically received from our customers either at periodic intervals (e.g., biweekly or monthly) or upon achievement of contractual milestones. Accounts receivable consisted of the following:

December 31	2020	2019
Non-U.S. government	$ 1,701	$ 1,847
U.S. government	1,040	1,076
Commercial	420	621
Total accounts receivable	$ 3,161	$ 3,544

Receivables from non-U.S. government customers included amounts related to long-term production programs for the Spanish Ministry of Defence of $1.6 billion and $1.7 billion on December 31, 2020 and 2019, respectively. A different ministry, the Spanish Ministry of Industry, has funded work on these programs in advance of costs incurred by the company. The cash advances are reported on the Consolidated Balance Sheet in current customer advances and deposits and will be repaid to the Ministry of Industry as we collect on the outstanding receivables from the Ministry of Defence. The net amounts for these programs on December 31, 2020 and 2019, were advance payments of $245 and $295, respectively. With respect to our other receivables, we expect to collect substantially all of the year-end 2020 balance during 2021.

H. UNBILLED RECEIVABLES

Unbilled receivables represent revenue recognized on long-term contracts (contract costs and estimated profits) less associated advances and progress billings. These amounts will be billed in accordance with the agreed-upon contractual terms. Unbilled receivables consisted of the following:

December 31	2020	2019
Unbilled revenue	$ 36,657	$ 33,481
Advances and progress billings	(28,633)	(25,624)
Net unbilled receivables	$ 8,024	$ 7,857

On December 31, 2020 and 2019, net unbilled receivables included $2.8 billion and $2.9 billion, respectively, associated with a large international wheeled armored vehicle contract in our Combat Systems segment. We had experienced delays in payment under the contract in 2018 and 2019, which resulted in the large unbilled receivables balances. In March 2020, we finalized a contract amendment with the customer that included a revised payment schedule. Under the amended contract, we received two $500 progress payments, one in each of the first and second quarters of 2020. Further progress payments will be due annually that will liquidate the net unbilled receivables balance over the next few years. Other than the balance related to the large international vehicle contract, we expect to bill substantially all of the remaining year-end 2020 net unbilled receivables balance during 2021. The amount not expected to be billed in 2021 results primarily from the agreed-upon contractual billing terms.

G&A costs in unbilled revenue on December 31, 2020 and 2019, were $427 and $441, respectively. Contract costs also may include estimated contract recoveries for matters such as contract changes and claims for unanticipated contract costs. We record revenue associated with these matters only when the amount of recovery can be estimated reliably and realization is probable.

I. INVENTORIES

The majority of our inventories are for business jet aircraft. Our inventories are stated at the lower of cost or net realizable value. Work in process represents largely labor, material and overhead costs associated with aircraft in the manufacturing process and is based primarily on the estimated average unit cost in a production lot. Raw materials are valued primarily on the first-in, first-out method. We record pre-owned aircraft acquired in connection with the sale of new aircraft at the lower of the trade-in value or the estimated net realizable value.

Inventories consisted of the following:

December 31	2020	2019
Work in process	$ 3,990	$ 4,419
Raw materials	1,712	1,733
Finished goods	30	30
Pre-owned aircraft	13	124
Total inventories	$ 5,745	$ 6,306

J. PROPERTY, PLANT AND EQUIPMENT, NET

Property, plant and equipment (PP&E) is carried at historical cost, net of accumulated depreciation. PP&E by major asset class consisted of the following:

December 31	2020	2019
Machinery and equipment	$ 5,941	$ 5,441
Buildings and improvements	3,558	3,232
Construction in process	802	688
Land and improvements	413	400
Total PP&E	10,714	9,761
Accumulated depreciation	(5,614)	(5,286)
PP&E, net	$ 5,100	$ 4,475

We depreciate most of our assets using the straight-line method and the remainder using accelerated methods. Buildings and improvements are depreciated over periods of up to 50 years. Machinery and equipment are depreciated over periods of up to 30 years. Our government customers provide certain facilities and equipment for our use that are not included above.

K. DEBT

Debt consisted of the following:

December 31		2020	2019
Fixed-rate notes due:	Interest rate:		
May 2020	2.875%	$ —	$ 2,000
May 2021	3.000%	2,000	2,000
July 2021	3.875%	500	500
November 2022	2.250%	1,000	1,000
May 2023	3.375%	750	750
August 2023	1.875%	500	500
November 2024	2.375%	500	500
April 2025	3.250%	750	—
May 2025	3.500%	750	750
August 2026	2.125%	500	500
April 2027	3.500%	750	—
November 2027	2.625%	500	500
May 2028	3.750%	1,000	1,000
April 2030	3.625%	1,000	—
April 2040	4.250%	750	—
November 2042	3.600%	500	500
April 2050	4.250%	750	—
Floating-rate notes due:			
May 2020	3-month LIBOR + 0.29%	—	500
May 2021	3-month LIBOR + 0.38%	500	500
Other	Various	117	505
Total debt principal		13,117	12,005
Less unamortized debt issuance costs and discounts		119	75
Total debt		12,998	11,930
Less current portion		3,003	2,920
Long-term debt		$ 9,995	$ 9,010

In March 2020, we issued $4 billion of fixed-rate notes. The proceeds were used to repay $2.5 billion of fixed- and floating-rate notes that matured in May 2020 and for general corporate purposes, including the repayment of a portion of our borrowings under our commercial paper program. We also amended two of our credit facilities to, among other things, extend their expiration dates.

Interest payments associated with our debt were $459 in 2020, $434 in 2019 and $312 in 2018.

The aggregate amounts of scheduled principal maturities of our debt are as follows:

Year Ended December 31	Debt Principal
2021	$ 3,006
2022	1,010
2023	1,255
2024	505
2025	1,503
Thereafter	5,838
Total debt principal	$ 13,117

On December 31, 2020, we had no commercial paper outstanding, but we maintain the ability to access the commercial paper market in the future. Separately, we have $5 billion in committed bank credit facilities for general corporate purposes and working capital needs and to support our commercial paper issuances. These credit facilities include a $2 billion 364-day facility expiring in March 2021, a $2 billion multi-year facility expiring in March 2023 and a $1 billion multi-year facility expiring in March 2025. We may renew or replace these credit facilities in whole or in part at or prior to their expiration dates. We also have an effective shelf registration on file with the Securities and Exchange Commission that allows us to access the debt markets.

Our financing arrangements contain a number of customary covenants and restrictions. We were in compliance with all covenants and restrictions on December 31, 2020.

L. OTHER LIABILITIES

A summary of significant other liabilities by balance sheet caption follows:

December 31	2020	2019
Salaries and wages	$ 1,007	$ 941
Workers' compensation	338	306
Retirement benefits	306	296
Operating lease liabilities	262	252
Fair value of cash flow hedges	79	32
Other (a)	1,741	1,744
Total other current liabilities	$ 3,733	$ 3,571
Retirement benefits	$ 5,182	$ 5,172
Operating lease liabilities	1,149	1,251
Customer deposits on commercial contracts	872	709
Deferred income taxes	461	588
Other (b)	2,024	1,840
Total other liabilities	$ 9,688	$ 9,560

(a) Consists primarily of dividends payable, taxes payable, environmental remediation reserves, warranty reserves, deferred revenue and supplier contributions in the Aerospace segment, liabilities of discontinued operations, finance lease liabilities and insurance-related costs.

(b) Consists primarily of warranty reserves, workers' compensation liabilities, finance lease liabilities and liabilities of discontinued operations.

M. SHAREHOLDERS' EQUITY

Authorized Stock. Our authorized capital stock consists of 500 million shares of $1 per share par value common stock and 50 million shares of $1 per share par value preferred stock. The preferred stock is issuable in series, with the rights, preferences and limitations of each series to be determined by our board of directors.

Shares Issued and Outstanding. On December 31, 2020, we had 481,880,634 shares of common stock issued and 286,477,836 shares of common stock outstanding, including unvested restricted stock of 488,435 shares. On December 31, 2019, we had 481,880,634 shares of common stock issued and 289,610,336 shares of common stock outstanding. No shares of our preferred stock were outstanding on either date. The only changes in our shares outstanding during 2020 and 2019 resulted from shares repurchased in the open market and share activity under our equity compensation plans. See Note Q for additional details.

Share Repurchases. Our board of directors from time to time authorizes management to repurchase outstanding shares of our common stock on the open market. On March 4, 2020, the board of directors authorized management to repurchase up to 10 million additional shares of the company's outstanding stock. In 2020, we repurchased 4.1 million of our outstanding shares for $602. On December 31, 2020, 12.3 million shares remained authorized by our board of directors for repurchase, representing 4.3% of our total shares outstanding. We repurchased 1.1 million shares for $184 in 2019 and 10.1 million shares for $1.8 billion in 2018.

Dividends per Share. Our board of directors declared dividends per share of $4.40 in 2020, $4.08 in 2019 and $3.72 in 2018. We paid cash dividends of $1.2 billion in 2020 and 2019 and $1.1 billion in 2018.

Accumulated Other Comprehensive Loss. The changes, pretax and net of tax, in each component of AOCL consisted of the following:

	(Losses)/ Gains on Cash Flow Hedges	Unrealized Gains on Marketable Securities	Foreign Currency Translation Adjustments	Changes in Retirement Plans' Funded Status	AOCL
December 31, 2017	$ (94)	$ 19	$ 402	$ (2,846)	$ (2,519)
Cumulative-effect adjustments*	(4)	(19)	—	(550)	(573)
Other comprehensive loss, pretax	36	—	(300)	(45)	(309)
Benefit from income tax, net	(9)	—	—	10	1
Other comprehensive loss, net of tax	27	—	(300)	(35)	(308)
December 31, 2018	(71)	—	102	(3,431)	(3,400)
Other comprehensive loss, pretax	97	—	186	(857)	(574)
Benefit from income tax, net	(24)	—	—	180	156
Other comprehensive loss, net of tax	73	—	186	(677)	(418)
December 31, 2019	2	—	288	(4,108)	(3,818)
Other comprehensive income, pretax	366	—	353	(453)	266
Benefit from income tax, net	(96)	—	—	98	2
Other comprehensive income, net of tax	270	—	353	(355)	268
December 31, 2020	$ 272	$ —	$ 641	$ (4,463)	$ (3,550)

* Reflects the cumulative effects of ASU 2016-01, Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities, and ASU 2018-02, Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income, which we adopted on January 1, 2018.

Amounts reclassified out of AOCL related primarily to changes in our retirement plans' funded status and included pretax recognized net actuarial losses and amortization of prior service credit. See Note R for these amounts, which are included in our net periodic pension and other post-retirement benefit cost.

N. DERIVATIVE FINANCIAL INSTRUMENTS AND HEDGING ACTIVITIES

We are exposed to market risk, primarily from foreign currency exchange rates, interest rates, commodity prices and investments. We may use derivative financial instruments to hedge some of these risks as described below. We do not use derivative financial instruments for trading or speculative purposes.

Foreign Currency Risk. Our foreign currency exchange rate risk relates to receipts from customers, payments to suppliers and inter-company transactions denominated in foreign currencies. To the extent possible, we include terms in our contracts that are designed to protect us from this risk. Otherwise, we enter into derivative financial instruments, principally foreign currency forward purchase and sale contracts, designed to offset and minimize our risk. The dollar-weighted two-year average maturity of these instruments generally matches the duration of the activities that are at risk.

Interest Rate Risk. Our financial instruments subject to interest rate risk include fixed- and floating-rate long-term debt obligations. We entered into derivative financial instruments, specifically interest rate swap contracts, to eliminate our floating-rate interest risk. The interest rate risk associated with our financial instruments is not material.

Commodity Price Risk. We are subject to rising labor and commodity price risk, primarily on long-term, fixed-price contracts. To the extent possible, we include terms in our contracts that are designed to protect us from these risks. Some of the protective terms included in our contracts are considered derivative financial instruments but are not accounted for separately, because they are clearly and closely related to the host contract. We have not entered into any material commodity hedging contracts but may do so as circumstances warrant. We do not believe that changes in labor or commodity prices will have a material impact on our results of operations or cash flows.

Investment Risk. Our investment policy allows for purchases of fixed-income securities with an investment-grade rating and a maximum maturity of up to five years. On December 31, 2020 and 2019, we held $2.8 billion and $902 in cash and equivalents, respectively, but held no marketable securities other than those held in trust to meet some of our obligations under workers' compensation and non-qualified pension plans. On December 31, 2020 and 2019, we held marketable securities in trust of $211 and $207, respectively. These marketable securities are reflected at fair value on the Consolidated Balance Sheet in other current and noncurrent assets. See Note E for additional details.

Hedging Activities. We had notional forward exchange and interest rate swap contracts outstanding of $9.4 billion and $5 billion on December 31, 2020 and 2019, respectively. These derivative financial instruments are cash flow hedges, and are reflected at fair value on the Consolidated Balance Sheet in other current assets and liabilities. See Note E for additional details.

Changes in fair value (gains and losses) related to derivative financial instruments that qualify as cash flow hedges are deferred in AOCL until the underlying transaction is reflected in earnings. Alternatively, gains and losses on derivative financial instruments that do not qualify for hedge accounting are recorded each period in earnings. All gains and losses from derivative financial instruments recognized in the Consolidated Statement of Earnings are presented in the same line item as the underlying transaction, either operating costs and expenses or interest expense.

Net gains and losses recognized in earnings on derivative financial instruments that do not qualify for hedge accounting were not material to our results of operations in any of the past three years. Net gains and losses reclassified to earnings from AOCL related to qualified hedges were also not material to our results of operations in any of the past three years, and we do not expect the amount of these gains and losses that will be reclassified to earnings during the next 12 months to be material.

We had no material derivative financial instruments designated as fair value or net investment hedges on December 31, 2020 or 2019.

Foreign Currency Financial Statement Translation. We translate foreign currency balance sheets from our international businesses' functional currency (generally the respective local currency) to U.S. dollars at the end-of-period exchange rates, and statements of earnings at the average exchange rates for each period. The resulting foreign currency translation adjustments are a component of AOCL.

We do not hedge the fluctuation in reported revenue and earnings resulting from the translation of these international operations' results into U.S. dollars. The impact of translating our non-U.S. operations' revenue and earnings into U.S. dollars was not material to our results of operations in any of the past three years. In addition, the effect of changes in foreign exchange rates on non-U.S. cash balances was not material in any of the past three years.

O. COMMITMENTS AND CONTINGENCIES

Litigation

In 2015, Electric Boat Corporation, a subsidiary of General Dynamics Corporation, received a Civil Investigative Demand from the U.S. Department of Justice regarding an investigation of potential False Claims Act violations relating to alleged failures of Electric Boat's quality system with respect to allegedly non-conforming parts purchased from a supplier. In 2016, Electric Boat was made aware that it is a defendant in a lawsuit related to this matter which had been filed under seal in U.S. district court. Also in 2016, the Suspending and Debarring Official for the U.S. Department of the Navy issued a Show Cause Letter to Electric Boat requesting that Electric Boat respond to the official's concerns regarding Electric Boat's oversight and management with respect to its quality assurance systems for subcontractors and suppliers. Electric Boat responded to the Show Cause Letter and engaged in discussions with the U.S. government.

In the third quarter of 2019, the Department of Justice declined to intervene in the qui tam action, noting that its investigation continues, and the court unsealed the relator's complaint. In the fourth quarter of 2020, the relator filed a second amended complaint. Given the current status of these matters, we are unable to express a view regarding the ultimate outcome or, if the outcome is adverse, to estimate an amount or range of reasonably possible loss. Depending on the outcome of these matters, there could be a material impact on our results of operations, financial condition and cash flows.

Additionally, various other claims and legal proceedings incidental to the normal course of business are pending or threatened against us. These other matters relate to such issues as government investigations and claims, the protection of the environment, asbestos-related claims and employee-related matters. The nature of litigation is such that we cannot predict the outcome of these other matters. However, based on information currently available, we believe any potential liabilities in these other proceedings, individually or in the aggregate, will not have a material impact on our results of operations, financial condition or cash flows.

Environmental
We are subject to and affected by a variety of federal, state, local and foreign environmental laws and regulations. We are directly or indirectly involved in environmental investigations or remediation at some of our current and former facilities and third-party sites that we do not own but where we have been designated a Potentially Responsible Party (PRP) by the U.S. Environmental Protection Agency or a state environmental agency. Based on historical experience, we expect that a significant percentage of the total remediation and compliance costs associated with these facilities will continue to be allowable contract costs and, therefore, recoverable under U.S. government contracts.

As required, we provide financial assurance for certain sites undergoing or subject to investigation or remediation. We accrue environmental costs when it is probable that a liability has been incurred and the amount can be reasonably estimated. Where applicable, we seek insurance recovery for costs related to environmental liabilities. We do not record insurance recoveries before collection is considered probable. Based on all known facts and analyses, we do not believe that our liability at any individual site, or in the aggregate, arising from such environmental conditions will be material to our results of operations, financial condition or cash flows. We also do not believe that the range of reasonably possible additional loss beyond what has been recorded would be material to our results of operations, financial condition or cash flows.

Other
Government Contracts. As a government contractor, we are subject to U.S. government audits and investigations relating to our operations, including claims for fines, penalties, and compensatory and treble damages. We believe the outcome of such ongoing government audits and investigations will not have a material impact on our results of operations, financial condition or cash flows.

In the performance of our contracts, we routinely request contract modifications that require additional funding from the customer. Most often, these requests are due to customer-directed changes in the scope of work. While we are entitled to recovery of these costs under our contracts, the administrative process with our customer may be protracted. Based on the circumstances, we periodically file requests for equitable adjustment (REAs) that are sometimes converted into claims. In some cases, these requests are disputed by our customer. We believe our outstanding modifications, REAs and other claims will be resolved without material impact to our results of operations, financial condition or cash flows.

Letters of Credit and Guarantees. In the ordinary course of business, we have entered into letters of credit, bank guarantees, surety bonds and other similar arrangements with financial institutions and insurance carriers totaling approximately $1.4 billion on December 31, 2020. In addition, from time to time and in the ordinary course of business, we contractually guarantee the payment or performance of our subsidiaries arising under certain contracts.

Aircraft Trade-ins. In connection with orders for new aircraft in contract backlog, our Aerospace segment has outstanding options with some customers to trade in aircraft as partial consideration in their new-aircraft transaction. These trade-in commitments are generally structured to establish the fair market value of the trade-in aircraft at a date generally 45 or fewer days preceding delivery of the new aircraft to the customer. At that time, the customer is required to either exercise the option or allow its expiration. Other trade-in commitments are structured to guarantee a pre-determined trade-in value. These commitments present more risk in the event of an adverse change in market conditions. In either case, any excess of the pre-established trade-in price above the fair market value at the time the new aircraft is delivered is treated as a reduction of revenue in the new-aircraft sales transaction. As of December 31, 2020, the estimated change in fair market values from the date of the commitments was not material.

Labor Agreements. On December 31, 2020, approximately one-fifth of the employees of our subsidiaries were working under collectively bargained terms and conditions, including 61 collective agreements that we have negotiated directly with unions and works councils. A number of these agreements expire within any given year. Historically, we have been successful at renegotiating these labor agreements without any material disruption of operating activities. In 2021, we expect to negotiate the terms of 19 agreements covering approximately 2,200 employees. We do not expect the renegotiations will, either individually or in the aggregate, have a material impact on our results of operations, financial condition or cash flows.

Product Warranties. We provide warranties to our customers associated with certain product sales. We record estimated warranty costs in the period in which the related products are delivered. The warranty liability recorded at each balance sheet date is based generally on the number of months of warranty coverage remaining for the products delivered and the average historical monthly warranty payments. Warranty obligations incurred in connection with long-term production contracts are accounted for within the contract estimates at completion. Our other warranty obligations, primarily for business jet aircraft, are included in other current and noncurrent liabilities on the Consolidated Balance Sheet.

The changes in the carrying amount of warranty liabilities for each of the past three years were as follows:

Year Ended December 31	2020	2019	2018
Beginning balance	$ 619	$ 480	$ 467
Warranty expense	113	258	129
Payments	(108)	(105)	(102)
Adjustments	36	(14)	(14)
Ending balance	$ 660	$ 619	$ 480

P. LEASES

We determine at its inception whether an arrangement that provides us control over the use of an asset is a lease. We recognize at lease commencement a right-of-use (ROU) asset and lease liability based on the present value of the future lease payments over the lease term. We have elected not to recognize an ROU asset and lease liability for leases with terms of 12 months or less. Some of our leases include options to extend the term of the lease for up to 30 years or to terminate the lease within 1 year. When it is reasonably certain that we will exercise the option, we include the impact of the option in the lease term for purposes of determining total future lease payments. As most of our lease agreements do not explicitly state the discount rate implicit in the lease, we use our incremental borrowing rate on the commencement date to calculate the present value of future payments.

Our leases commonly include payments that are based on the Consumer Price Index (CPI) or other similar indices. These variable lease payments are included in the calculation of the ROU asset and lease liability. Other variable lease payments, such as usage-based amounts, are excluded from the ROU asset and lease liability, and are expensed as incurred. In addition to the present value of the future lease payments, the calculation of the ROU asset also includes any deferred rent, lease pre-payments and initial direct costs of obtaining the lease, such as commissions.

In addition to the base rent, real estate leases typically contain provisions for common-area maintenance and other similar services, which are considered non-lease components for accounting purposes. For our real estate leases, we apply a practical expedient to include these non-lease components in calculating the ROU asset and lease liability. For all other types of leases, non-lease components are excluded from our ROU assets and lease liabilities and expensed as incurred.

Our leases are for office space, manufacturing facilities, and machinery and equipment. Real estate represents over 75% of our lease obligations.

The components of lease costs were as follows:

Year Ended December 31	2020	2019
Finance lease cost:		
Amortization of right-of-use assets	$ 94	$ 86
Interest on lease liabilities	25	24
Operating lease cost	326	332
Short-term lease cost	62	75
Variable lease cost	12	14
Sublease income	(16)	(13)
Total lease costs, net	$ 503	$ 518

Additional information related to leases was as follows:

Year Ended December 31	2020	2019
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	$ 323	$ 325
Operating cash flows from finance leases	25	24
Financing cash flows from finance leases	64	57
Right-of-use assets obtained in exchange for lease liabilities:		
Operating leases	205	365
Finance leases	45	50

Additional quantitative lease information was as follows:

December 31	2020	2019
Weighted-average remaining lease term:		
Operating leases	10.5 years	10.7 years
Finance leases	10.1 years	6.1 years
Weighted-average discount rate:		
Operating leases	3%	3%
Finance leases	7%	8%

The following is a reconciliation of future undiscounted cash flows to the operating and finance lease liabilities, and the related ROU assets, presented on the Consolidated Balance Sheet on December 31, 2020:

Year Ended December 31	Operating Leases	Finance Leases
2021	$ 298	$ 87
2022	252	86
2023	192	38
2024	156	21
2025	107	19
Thereafter	705	145
Total future lease payments	1,710	396
Less imputed interest	299	73
Present value of future lease payments	1,411	323
Less current portion of lease liabilities	262	68
Long-term lease liabilities	$ 1,149	$ 255
ROU assets	$ 1,328	$ 333

On December 31, 2019, operating and finance lease liabilities and the related ROU assets were as follows:

	Operating Leases	Finance Leases
Current portion of lease liabilities	$ 252	$ 67
Long-term lease liabilities	1,251	287
ROU assets	1,432	391

Lease liabilities are included on the Consolidated Balance Sheet in current and noncurrent other liabilities, while ROU assets are included in noncurrent other assets.

On December 31, 2020, we had additional future payments on leases that had not yet commenced of $79. These leases will commence in 2021 and 2022, and have lease terms of 1 to 20 years.

Q. EQUITY COMPENSATION PLANS

Equity Compensation Overview. We have equity compensation plans for employees, as well as for non-employee members of our board of directors. The equity compensation plans seek to provide an effective means of attracting and retaining directors, officers and key employees, and to provide them with incentives to enhance our growth and profitability. Under the equity compensation plans, awards may be granted to officers, employees or non-employee directors in common stock, options to purchase common stock, restricted shares of common stock, participation units or any combination of these.

Annually, we grant awards of stock options, restricted stock and RSUs to participants in our equity compensation plans in early March. Additionally, we may make limited ad hoc grants on a quarterly basis for new hires or promotions. We issue common stock under our equity compensation plans from treasury stock. On December 31, 2020, in addition to the shares reserved for issuance upon the exercise of outstanding stock options, approximately 23 million shares have been authorized for awards that may be granted in the future.

Equity-based Compensation Expense. Equity-based compensation expense is included in G&A expenses. The following table details the components of equity-based compensation expense recognized in net earnings in each of the past three years:

Year Ended December 31	2020	2019	2018
Stock options	$ 43	$ 43	$ 45
Restricted stock/RSUs	58	62	65
Total equity-based compensation expense, net of tax	$ 101	$ 105	$ 110

Stock Options. Stock options granted under our equity compensation plans are issued with an exercise price at the fair value of our common stock determined by the average of the high and low stock prices as listed on the New York Stock Exchange (NYSE) on the date of grant. The majority of our outstanding stock options vest over three years, with 50% of the options vesting after two years and the remaining 50% vesting the following year, and expire 10 years after the grant date.

We recognize compensation expense related to stock options on a straight-line basis over the vesting period of the awards, net of estimated forfeitures. Estimated forfeitures are based on our historical forfeiture experience. We estimate the fair value of stock options on the date of grant using the Black-Scholes option pricing model with the following assumptions for each of the past three years:

Year Ended December 31	2020	2019	2018
Expected volatility	21.1-26.9%	19.7-20.0%	17.6-18.2%
Weighted average expected volatility	21.2%	19.7%	17.6%
Expected term (in months)	60	64	68
Risk-free interest rate	0.4-1.5%	1.7-2.6%	2.6-2.9%
Expected dividend yield	2.4%	2.0%	1.8%

We determine the above assumptions based on the following:

- Expected volatility is based on the historical volatility of our common stock over a period equal to the expected term of the option.
- Expected term is based on assumptions used by a set of comparable peer companies.
- Risk-free interest rate is the yield on a U.S. Treasury zero-coupon issue with a remaining term equal to the expected term of the option at the grant date.
- Expected dividend yield is based on our historical dividend yield.

The resulting weighted average fair value per stock option granted (in dollars) was $24.86 in 2020, $29.06 in 2019 and $37.42 in 2018. Stock option expense reduced pretax operating earnings (and on a diluted per-share basis) by $55 ($0.15) in 2020 and 2019 and $57 ($0.15) in 2018. Compensation expense for stock options is reported as a Corporate expense for segment reporting purposes (see Note S). On December 31, 2020, we had $72 of unrecognized compensation cost related to stock options, which is expected to be recognized over a weighted average period of 1.9 years.

A summary of stock option activity during 2020 follows:

In Shares and Dollars	Shares Under Option	Weighted Average Exercise Price Per Share
Outstanding on December 31, 2019	9,767,749	$ 161.54
Granted	2,538,120	165.20
Exercised	(910,572)	101.16
Forfeited/canceled	(266,576)	174.52
Outstanding on December 31, 2020	11,128,721	$ 167.00
Vested and expected to vest on December 31, 2020	10,746,380	$ 167.02
Exercisable on December 31, 2020	6,133,048	$ 161.18

Summary information with respect to our stock options' intrinsic value and remaining contractual term on December 31, 2020, follows:

	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding	6.7	$ 56
Vested and expected to vest	6.6	56
Exercisable	5.1	56

In the table above, intrinsic value is calculated as the excess, if any, of the market price of our stock on the last trading day of the year over the exercise price of the options. For stock options exercised, intrinsic value is calculated as the difference between the market price on the date of exercise and the exercise price. The total intrinsic value of stock options exercised was $57 in 2020, $244 in 2019 and $147 in 2018.

Restricted Stock/RSUs. The fair value of restricted stock and RSUs equals the average of the high and low market prices of our common stock as listed on the NYSE on the date of grant. Grants of restricted stock are awards of shares of common stock. Participation units represent obligations that have a value derived from or related to the value of our common stock. These include stock appreciation rights, phantom stock units and RSUs, and are payable in cash or common stock.

Restricted stock and RSUs generally vest over a three-year restriction period after the grant date, during which recipients may not sell, transfer, pledge, assign or otherwise convey their restricted shares to another party. During this period, restricted stock recipients receive cash dividends on their restricted shares and are entitled to vote those shares, while RSU recipients receive dividend-equivalent units instead of cash dividends and are not entitled to vote their RSUs or dividend-equivalent units.

We grant RSUs with one or more performance measures determined by the compensation committee of the board of directors as described in our proxy statement. Depending on the company's performance, the number of RSUs earned may be less than, equal to or greater than the original number of RSUs awarded subject to a payout range.

We generally recognize compensation expense related to restricted stock and RSUs on a straight-line basis over the vesting period of the awards. Compensation expense related to restricted stock and RSUs reduced pretax operating earnings (and on a diluted per-share basis) by $73 ($0.20) in 2020, $79 ($0.21) in 2019 and $83 ($0.22) in 2018. Compensation expense for restricted stock and RSUs is reported as an operating expense for segment reporting purposes (see Note S). On December 31, 2020, we had $56 of unrecognized compensation cost related to restricted stock and RSUs, which is expected to be recognized over a weighted average period of 1.6 years.

A summary of restricted stock and RSU activity during 2020 follows:

In Shares and Dollars	Shares/ Share-Equivalent Units	Weighted Average Grant-Date Fair Value Per Share
Nonvested at December 31, 2019	1,224,364	$ 181.11
Granted	559,168	170.57
Vested	(609,870)	172.23
Forfeited	(23,511)	173.91
Nonvested at December 31, 2020	1,150,151	$ 180.98

The total fair value of vesting shares was $103 in 2020, $88 in 2019 and $242 in 2018.

R. RETIREMENT PLANS

We provide retirement benefits to eligible employees through a variety of plans:

- Defined contribution
- Defined benefit
    - Pension (qualified and non-qualified)
    - Other post-retirement benefit

Substantially all of our plans use a December 31 measurement date consistent with our fiscal year.

Defined Contribution Plans
We provide eligible employees the opportunity to participate in defined contribution plans (commonly known as 401(k) plans), which permit contributions on a before-tax and after-tax basis. Employees may contribute to various investment alternatives. In most of these plans, we match a portion of the employees’ contributions. Our contributions to these plans totaled $379 in 2020, $333 in 2019 and $302 in 2018. The defined-contribution plans held approximately 19 million shares of our common stock, representing approximately 7% of our outstanding shares on December 31, 2020 and 2019.

Defined Benefit Plans
Plan Descriptions. We have trusteed, qualified pension plans covering eligible employees aligned with the markets in our business: U.S. government, non-U.S. government and commercial. Some of these plans require employees to make contributions to the plan. We also sponsor several non-qualified pension plans, which provide eligible executives with additional benefits, including excess benefits over limits imposed on qualified plans by federal tax law. The principal factors affecting the benefits earned by participants in our pension plans are employees’ years of service and compensation levels. Our primary U.S. pension plans, which comprise the majority of our unfunded obligation, were closed to new salaried participants on January 1, 2007, and were closed to new hourly participants in subsequent collective bargaining agreements over the next several years. Additionally, we have made several changes to these plans for certain participants that limit or cease the benefits that accrue for future service.

In addition to pension benefits, we maintain plans that provide post-retirement healthcare and life insurance coverage for certain employees and retirees. These benefits vary by employment status, age, service and salary level at retirement. The coverage provided and the extent to which the retirees share in the cost of the program vary throughout the company. The plans provide health and life insurance benefits only to those employees who retire directly from our service and not to those who terminate service prior to eligibility for retirement.

Contributions. It is our policy to fund our qualified pension plans in a manner that optimizes the tax deductibility and contract recovery of contributions considered within our capital deployment framework. Therefore, we may make discretionary contributions in addition to the required contributions determined in accordance with IRS regulations. We contributed $480 to our qualified pension plans in 2020. In 2021, our required contributions are approximately $360.

We maintain several tax-advantaged accounts, primarily Voluntary Employees' Beneficiary Association (VEBA) trusts, to fund the obligations for some of our other post-retirement benefit plans. For non-funded plans, claims are paid as received. Contributions to our other post-retirement benefit plans were not material in 2020 and are not expected to be material in 2021.

Benefit Payments. We expect the following benefits to be paid from our defined benefit plans over the next 10 years:

	Pension Benefits	Other Post-retirement Benefits
2021	$ 887	$ 64
2022	912	63
2023	935	62
2024	961	60
2025	981	59
2026-2030	5,094	273

Benefit Cost. Our annual benefit cost consists of five primary elements:

- the cost of benefits earned by employees for services rendered during the year.
- an interest charge on our plan liabilities.
- an expected return on our plan assets for the year.
- actuarial gains and losses, which result from changes in assumptions and differences between actual and expected return on assets and participant experience.
- the cost or credit attributed to prior service resulting from changes we make to plan benefit terms.

For qualified pension plans and other post-retirement benefit plans, actuarial gains and losses and prior service costs or credits are initially deferred in AOCL and then amortized on a straight-line basis over future years. For our qualified U.S. government pension plans, we amortize actuarial gains and losses over a custom amortization period based on the amount of pension costs allocable to our U.S. government contracts. For the remaining qualified pension plans and other post-retirement benefit plans, we amortize only the amount of actuarial gains and losses that exceeds 10% of the greater of plan assets or benefit obligations. This amount is amortized over the average remaining service period of plan participants who are active employees unless all or almost all of a plan's participants are inactive or are not accruing additional benefits, then the amortization period is based on the average remaining life expectancy of the plan participants. To further reduce the volatility of our annual benefit cost, gains and losses resulting from the return on plan assets are included over five years in the determination of the amortizable amount of actuarial gains and losses. For non-qualified pension plans, we recognize actuarial gains and losses immediately.

Net annual benefit cost (credit) consisted of the following:

	Pension Benefits		
Year Ended December 31	2020	2019	2018
Service cost	$ 115	$ 111	$ 180
Interest cost	491	600	532
Expected return on plan assets	(926)	(911)	(856)
Net actuarial loss	387	355	375
Prior service credit	(18)	(19)	(46)
Net annual benefit cost	$ 49	$ 136	$ 185

	Other Post-retirement Benefits		
Year Ended December 31	2020	2019	2018
Service cost	$ 10	$ 8	$ 10
Interest cost	27	35	33
Expected return on plan assets	(36)	(36)	(40)
Net actuarial gain	(3)	(8)	(4)
Prior service credit	(1)	(3)	(4)
Net annual benefit credit	$ (3)	$ (4)	$ (5)

Our contractual arrangements with the U.S. government provide for the recovery of pension and other post-retirement benefit costs related to employees working on government contracts. For these plans, the amount allocated to contracts is determined in accordance with the Cost Accounting Standards (CAS) and Federal Acquisition Regulation. At this time, cumulative benefit costs exceed the amount allocated to contracts. To the extent we consider recovery of benefit costs to be probable based on our backlog and probable follow-on contracts, we defer the excess in other contract costs in other current assets on the Consolidated Balance Sheet until the cost is allocable to contracts. See Note A for a discussion of our other contract costs. To the extent there is a non-service component of net annual benefit cost (credit) for our defined benefit plans, it is reported in other income (expense) in the Consolidated Statement of Earnings.

Funded Status. We recognize an asset or liability on the Consolidated Balance Sheet equal to the funded status of each of our defined benefit plans. The funded status is the difference between the fair value of the plan's assets and its benefit obligation. The following is a reconciliation of the benefit obligations and plan/trust assets, and the resulting funded status, of our defined benefit plans:

Year Ended December 31	Pension Benefits 2020	Pension Benefits 2019	Other Post-retirement Benefits 2020	Other Post-retirement Benefits 2019
Change in Benefit Obligation				
Benefit obligation at beginning of year	$ (18,107)	$ (15,720)	$ (1,027)	$ (935)
Service cost	(115)	(111)	(10)	(8)
Interest cost	(491)	(600)	(27)	(35)
Amendments	37	(3)	2	(8)
Actuarial loss	(1,780)	(2,446)	(60)	(101)
Settlement/curtailment/other	(65)	(33)	(4)	(4)
Benefits paid	829	806	64	64
Benefit obligation at end of year	$ (19,692)	$ (18,107)	$ (1,062)	$ (1,027)
Change in Plan/Trust Assets				
Fair value of assets at beginning of year	$ 13,177	$ 11,532	$ 644	$ 570
Actual return on plan assets	1,843	2,206	102	117
Employer contributions	480	185	—	2
Settlement/curtailment/other	58	39	—	—
Benefits paid	(807)	(785)	(41)	(45)
Fair value of assets at end of year	$ 14,751	$ 13,177	$ 705	$ 644
Funded status at end of year	$ (4,941)	$ (4,930)	$ (357)	$ (383)

The overall increase in our pension benefit obligation for the year ended December 31, 2020, was due primarily to actuarial losses created by the change in the weighted-average discount rate, which decreased from 3.19% at December 31, 2019, to 2.54% at December 31, 2020.

The overall increase in our pension benefit obligation for the year ended December 31, 2019, was due primarily to actuarial losses created by the change in the weighted-average discount rate, which decreased from 4.28% at December 31, 2018, to 3.19% at December 31, 2019.

Amounts recognized on the Consolidated Balance Sheet consisted of the following:

December 31	Pension Benefits 2020	Pension Benefits 2019	Other Post-retirement Benefits 2020	Other Post-retirement Benefits 2019
Noncurrent assets	$ 69	$ 61	$ 121	$ 94
Current liabilities	(181)	(166)	(125)	(130)
Noncurrent liabilities	(4,829)	(4,825)	(353)	(347)
Net liability recognized	$ (4,941)	$ (4,930)	$ (357)	$ (383)

Amounts deferred in AOCL for our defined benefit plans consisted of the following:

December 31	Pension Benefits 2020	Pension Benefits 2019	Other Post-retirement Benefits 2020	Other Post-retirement Benefits 2019
Net actuarial loss (gain)	$ 5,752	$ 5,276	$ (12)	$ (9)
Prior service (credit) cost	(93)	(73)	12	12
Total amount recognized in AOCL, pretax	$ 5,659	$ 5,203	$ —	$ 3

The following is a reconciliation of the change in AOCL for our defined benefit plans:

	Pension Benefits		Other Post-retirement Benefits	
Year Ended December 31	**2020**	2019	**2020**	2019
Net actuarial loss (gain)	$ 863	$ 1,151	$ (6)	$ 20
Prior service credit (cost)	(38)	3	(1)	8
Amortization of:				
Net actuarial (loss) gain from prior years	(387)	(355)	3	8
Prior service credit	18	19	1	3
Change in AOCL, pretax	$ 456	$ 818	$ (3)	$ 39

A pension plan's funded status is the difference between the plan's assets and its projected benefit obligation (PBO). The PBO is the present value of future benefits attributed to employee services rendered to date, including assumptions about future compensation levels. On December 31, 2020 and 2019, most of our pension plans had a PBO that exceeded the plans' assets. Summary information for those plans follows:

December 31	**2020**	2019
PBO	$ (19,189)	$ (17,651)
Fair value of plan assets	14,191	12,673

A pension plan's accumulated benefit obligation (ABO) is the present value of future benefits attributed to employee services rendered to date, excluding assumptions about future compensation levels. The ABO for all pension plans was $19.4 billion and $17.8 billion on December 31, 2020 and 2019, respectively. The ABO for all other post-retirement plans was $1.1 billion and $1 billion on December 31, 2020 and 2019, respectively. On December 31, 2020 and 2019, most of our defined benefit plans had an ABO that exceeded the plans' assets. Summary information for those plans follows:

	Pension Benefits		Other Post-retirement Benefits	
December 31	**2020**	2019	**2020**	2019
ABO	$ (18,596)	$ (17,080)	$ (784)	$ (783)
Fair value of plan assets	13,829	12,354	300	301

Assumptions. We calculate the plan assets and liabilities for a given year and the net annual benefit cost for the subsequent year using assumptions determined as of December 31 of the year in question.

The following table summarizes the weighted average assumptions used to determine our benefit obligations:

Assumptions on December 31	**2020**	2019
Pension Benefits		
Benefit obligation discount rate	2.54%	3.19%
Rate of increase in compensation levels	2.66%	2.68%
Other Post-retirement Benefits		
Benefit obligation discount rate	2.52%	3.18%
Healthcare cost trend rate:		
Trend rate for next year	6.00%	6.00%
Ultimate trend rate	5.00%	5.00%
Year rate reaches ultimate trend rate	2024	2024

The following table summarizes the weighted average assumptions used to determine our net annual benefit cost:

Assumptions for Year Ended December 31	2020	2019	2018
Pension Benefits			
Discount rates:			
Benefit obligation	3.19%	4.28%	3.69%
Service cost	2.74%	3.81%	3.51%
Interest cost	2.78%	3.92%	3.34%
Expected long-term rate of return on assets	7.41%	7.46%	7.45%
Rate of increase in compensation levels	2.73%	2.77%	2.79%
Other Post-retirement Benefits			
Discount rates:			
Benefit obligation	3.18%	4.24%	3.64%
Service cost	3.35%	4.23%	3.79%
Interest cost	2.78%	3.88%	3.27%
Expected long-term rate of return on assets	6.86%	6.84%	7.75%

We base the discount rates on a current yield curve developed from a portfolio of high-quality, fixed-income investments with maturities consistent with the projected benefit payout period.

We determine the long-term rates of return on assets based on consideration of historical and forward-looking returns and the current and expected asset allocation strategy. We decreased the expected long-term rates of return on assets in our primary U.S. other post-retirement benefit plans by 100 basis points beginning in 2019. For 2021, we decreased the expected long-term rates of return on assets in our primary U.S. pension plans by 25 basis points and in our primary U.S. other post-retirement benefit plans by 25 basis points or 125 basis points depending on the investment mix of each plan's assets. These changes to our expected long-term rates of return in both years resulted from an assessment of the historical and expected long-term returns of our various asset classes.

Retirement plan assumptions are based on our best judgment, including consideration of current and future market conditions. Given the long-term nature of the assumptions being made, actual outcomes can and often do differ from these estimates. Changes in these estimates impact future pension and other post-retirement benefit cost. As discussed above, we defer recognition of the cumulative benefit cost for our government plans in excess of costs allocated to contracts and included in revenue. Therefore, the impact of annual changes in financial reporting assumptions on the cost for these plans does not immediately affect our operating results.

Assets. A committee of our board of directors is responsible for the strategic oversight of our defined benefit plan assets held in trust. Management develops investment policies and provides oversight of a third-party investment manager who reports to the committee on a regular basis. The outsourced third-party investment manager develops investment strategies and makes all day-to-day investment decisions related to defined benefit plan assets in accordance with our investment policy and target allocation percentages.

Our investment policy endeavors to strike the appropriate balance among capital preservation, asset growth and current income. The objective of our investment policy is to generate future returns consistent with our assumed long-term rates of return used to determine net annual benefit cost. Target allocation percentages vary over time depending on the perceived risk and return potential of various asset classes and market conditions. At the end of 2020, our asset allocation policy ranges were:

Equities	48-68%
Fixed income	20-48%
Cash	0-5%
Other asset classes	0-16%

More than 90% of our pension plan assets are held in a single trust for our primary qualified U.S. government and commercial pension plans. On December 31, 2020, the trust was invested largely in publicly traded equities, fixed-income securities and commingled funds comprised of equity securities. The trust also invests in other asset classes consistent with our investment policy. Our investment policy allows the use of derivative instruments when appropriate to reduce anticipated asset volatility, to gain exposure to an asset class or to adjust the duration of fixed-income assets.

We hold assets in VEBA trusts for some of our other post-retirement benefit plans. These assets are managed by a third-party investment manager with oversight by management and are generally invested in publicly traded equities, fixed-income securities and commingled funds comprised of equity and fixed-income securities. Our asset allocation strategy for the VEBA trusts considers potential fluctuations in our other post-retirement benefit obligation, the taxable nature of certain VEBA trusts, tax deduction limits on contributions and the regulatory environment.

Our defined benefit plan assets are reported at fair value. See Note E for a discussion of the hierarchy for determining fair value. Our Level 1 assets include investments in publicly traded equity securities. These securities are actively traded and valued using quoted prices for identical securities from the market exchanges. Our Level 2 assets include fixed-income securities and commingled funds whose underlying investments are valued using observable marketplace inputs. The fair value of plan assets invested in fixed-income securities is generally determined under a market approach using valuation models that incorporate observable inputs such as interest rates, bond yields and quoted prices for similar assets. Our plan assets that are invested in commingled funds are valued using a unit price or net asset value (NAV) that is based on the underlying investments of the fund. Our Level 3 assets consist of real estate funds, insurance deposit contracts, retirement annuity contracts and direct private equity investments.

Certain investments valued using NAV as a practical expedient are excluded from the fair value hierarchy. These investments are redeemable at NAV on a monthly or quarterly basis and have redemption notice periods of up to 90 days. The unfunded commitments related to these investments were not material on December 31, 2020 or 2019.

The fair value of our pension plan assets by investment category and the corresponding level within the fair value hierarchy were as follows:

Asset Category	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
	December 31, 2020			
Cash and equivalents	$ 112	$ —	$ 112	$ —
Equity securities (a):				
U.S. companies	1,137	1,137	—	—
Non-U.S. companies	90	90	—	—
Private equity investments	33	—	—	33
Fixed-income securities:				
Corporate bonds (b)	3,532	—	3,532	—
Treasury securities	1,129	—	1,129	—
Commingled funds:				
Equity funds	7,306	—	7,306	—
Fixed-income funds	416	—	416	—
Real estate funds	90	—	—	90
Other investments:				
Insurance deposit contracts	157	—	—	157
Retirement annuity contracts	38	—	—	38
Total plan assets in fair value hierarchy	$ 14,040	$ 1,227	$ 12,495	$ 318
Plan assets measured using NAV as a practical expedient (c):				
Real estate funds	446			
Hedge funds	254			
Equity funds	11			
Total pension plan assets	$ 14,751			

(a) No single equity holding amounted to more than 1% of the total fair value.

(b) Our corporate bond investments had an average rating of A-.

(c) Investments measured at fair value using NAV as a practical expedient are not classified in the fair value hierarchy. The fair value amounts presented in this table for these investments are included to permit reconciliation of the fair value hierarchy to the total plan assets.

Asset Category	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
	December 31, 2019			
Cash and equivalents	$ 56	$ —	$ 56	$ —
Equity securities (a):				
U.S. companies	958	958	—	—
Non-U.S. companies	128	128	—	—
Private equity investments	26	—	—	26
Fixed-income securities:				
Corporate bonds (b)	2,163	—	2,163	—
Treasury securities	1,855	—	1,855	—
Commingled funds:				
Equity funds	6,494	—	6,494	—
Fixed-income funds	365	—	365	—
Real estate funds	84	—	—	84
Other investments:				
Insurance deposit contracts	137	—	—	137
Retirement annuity contracts	35	—	—	35
Total plan assets in fair value hierarchy	$ 12,301	$ 1,086	$ 10,933	$ 282
Plan assets measured using NAV as a practical expedient (c):				
Real estate funds	443			
Hedge funds	419			
Equity funds	14			
Total pension plan assets	$ 13,177			

(a) No single equity holding amounted to more than 1% of the total fair value.

(b) Our corporate bond investments had an average rating of A.

(c) Investments measured at fair value using NAV as a practical expedient are not classified in the fair value hierarchy. The fair value amounts presented in this table for these investments are included to permit reconciliation of the fair value hierarchy to the total plan assets.

The fair value of our other post-retirement benefit plan assets by category and the corresponding level within the fair value hierarchy were as follows:

Asset Category (a)	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)
	December 31, 2020		
Cash and equivalents	$ 16	$ —	$ 16
Equity securities	97	97	—
Fixed-income securities	134	—	134
Commingled funds:			
Equity funds	320	—	320
Fixed-income funds	128	—	128
Real estate funds	2	2	—
Total plan assets in fair value hierarchy	$ 697	$ 99	$ 598
Plan assets measured using NAV as a practical expedient (b):			
Real estate funds	5		
Hedge funds	3		
Total other post-retirement benefit plan assets	$ 705		

(a) We had no Level 3 investments on December 31, 2020.

(b) Investments measured at fair value using NAV as a practical expedient are not classified in the fair value hierarchy. The fair value amounts presented in this table for these investments are included to permit reconciliation of the fair value hierarchy to the total plan assets.

Asset Category (a)	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)
	December 31, 2019		
Cash and equivalents	$ 18	$ —	$ 18
Equity securities	92	92	—
Fixed-income securities	122	—	122
Commingled funds:			
Equity funds	288	—	288
Fixed-income funds	113	—	113
Real estate funds	2	2	—
Total plan assets in fair value hierarchy	$ 635	$ 94	$ 541
Plan assets measured using NAV as a practical expedient (b):			
Real estate funds	5		
Hedge funds	4		
Total other post-retirement benefit plan assets	$ 644		

(a) We had no Level 3 investments on December 31, 2019.

(b) Investments measured at fair value using NAV as a practical expedient are not classified in the fair value hierarchy. The fair value amounts presented in this table for these investments are included to permit reconciliation of the fair value hierarchy to the total plan assets.

Changes in our Level 3 defined benefit plan assets during 2020 and 2019 were as follows:

	Private Equity Investments	Real Estate Funds	Insurance Deposits Contracts	Retirement Annuity Contracts	Total Level 3 Assets
December 31, 2018	$ 20	$ 68	$ 128	$ —	$ 216
Actual return on plan assets:					
Unrealized gains, net	5	6	6	—	17
Purchases, sales and settlements, net	1	10	3	35	49
December 31, 2019	26	84	137	35	282
Actual return on plan assets:					
Unrealized gains, net	5	7	18	3	33
Realized losses, net	—	(1)	—	—	(1)
Purchases, sales and settlements, net	2	—	2	—	4
December 31, 2020	$ 33	$ 90	$ 157	$ 38	$ 318

S. SEGMENT INFORMATION

We have four operating segments: Aerospace, Marine Systems, Combat Systems and Technologies. We organize our segments in accordance with the nature of products and services offered. We measure each segment's profitability based on operating earnings. As a result, we do not allocate net interest, other income and expense items, and income taxes to our segments.

Summary financial information for each of our segments follows:

	Revenue*			Operating Earnings			Revenue from U.S. Government		
Year Ended December 31	**2020**	2019	2018	**2020**	2019	2018	**2020**	2019	2018
Aerospace	$ 8,075	$ 9,801	$ 8,455	$ 1,083	$ 1,532	$ 1,490	$ 513	$ 498	$ 334
Marine Systems	9,979	9,183	8,502	854	785	761	9,871	9,027	8,245
Combat Systems	7,223	7,007	6,241	1,041	996	962	4,191	4,048	3,228
Technologies	12,648	13,359	12,995	1,211	1,311	1,267	11,728	12,234	11,799
Corporate	—	—	—	(56)	(54)	(86)	—	—	—
Total	$ 37,925	$ 39,350	$ 36,193	$ 4,133	$ 4,570	$ 4,394	$ 26,303	$ 25,807	$ 23,606

* See Note B for additional revenue information by segment.

Corporate operating results consist primarily of equity-based compensation expense. Corporate operating results in 2018 also included one-time charges of approximately $45 associated with the costs to complete the CSRA acquisition.

The following is additional summary financial information for each of our segments:

	Identifiable Assets			Capital Expenditures			Depreciation and Amortization		
Year Ended December 31	2020	2019	2018	2020	2019	2018	2020	2019	2018
Aerospace	$ 12,050	$ 12,324	$ 11,220	$ 95	$ 138	$ 194	$ 201	$ 178	$ 154
Marine Systems	4,488	3,918	3,304	604	449	243	145	122	116
Combat Systems	12,034	11,220	9,872	92	109	91	95	85	87
Technologies	19,663	20,453	20,143	172	222	111	428	437	398
Corporate*	3,073	1,434	1,348	4	69	51	9	7	8
Total	$ 51,308	$ 49,349	$ 45,887	$ 967	$ 987	$ 690	$ 878	$ 829	$ 763

* Corporate identifiable assets are primarily cash and equivalents.

The following table presents our revenue by geographic area based on the location of our customers:

Year Ended December 31	2020	2019	2018
North America:			
United States	$ 31,194	$ 31,775	$ 28,386
Other	1,078	898	813
Total North America	32,272	32,673	29,199
Europe	2,846	2,836	2,807
Asia/Pacific	1,292	1,739	2,287
Africa/Middle East	1,249	1,785	1,611
South America	266	317	289
Total revenue	$ 37,925	$ 39,350	$ 36,193

Our revenue from non-U.S. operations was $4.3 billion in 2020, $4.4 billion in 2019 and $4.2 billion in 2018, and earnings from continuing operations before income taxes from non-U.S. operations were $585 in 2020, $600 in 2019 and $578 in 2018. The long-lived assets associated with these operations were 4% of our total long-lived assets on December 31, 2020 and 2019, and 3% on December 31, 2018.

T. CHANGE IN ACCOUNTING PRINCIPLE

In the fourth quarter of 2020, we retrospectively changed our accounting method related to the amortization of actuarial gains and losses for our qualified U.S. government pension plans in which the participants worked on U.S. government contracts (the Change in Accounting Principle). Prior to the Change in Accounting Principle, actuarial gains and losses were initially recognized as a component of AOCL and then subsequently amortized out of AOCL over time only when they exceeded the accounting corridor, a defined range within which amortization of net gains and losses is not required.

Under the new method, we will no longer use an accounting corridor, and we will amortize the actuarial gains and losses over a custom period. While the historical accounting method was acceptable, we believe the Change in Accounting Principle is preferable as it accelerates the amortization of the actuarial gains and losses, and aligns better with the method used for the allocation of qualified pension costs to our U.S. government contracts in accordance with the CAS. The Change in Accounting Principle has been applied retrospectively to all prior years presented. As of January 1, 2018, the cumulative effect of this change resulted in a $366 decrease in AOCL, $40 decrease in deferred tax asset in other noncurrent assets, $57 increase in deferred tax liability in other noncurrent liabilities and $463 increase in other contract costs in other current assets on the Consolidated Balance Sheet.

The following tables summarize the effects of the Change in Accounting Principle on selected line items of our Consolidated Financial Statements:

CONSOLIDATED STATEMENT OF EARNINGS

Year Ended December 31, 2020	As Calculated Under Previous Method	Effect of the Change in Accounting Principle	As Reported
Operating costs and expenses	$ (33,739)	$ (53)	$ (33,792)
Other, net	29	53	82

Year Ended December 31, 2019	As Previously Reported	Effect of the Change in Accounting Principle	As Adjusted
Operating costs and expenses	$ (34,702)	$ (78)	$ (34,780)
Other, net	14	78	92

Year Ended December 31, 2018	As Previously Reported	Effect of the Change in Accounting Principle	As Adjusted
Operating costs and expenses	$ (31,736)	$ (63)	$ (31,799)
Other, net	(16)	63	47

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

Year Ended December 31, 2020	As Calculated Under Previous Method	Effect of the Change in Accounting Principle	As Reported
Change in retirement plans' funded status	$ (491)	$ 38	$ (453)
Benefit from income tax, net	10	(8)	2
Other comprehensive income, net of tax	238	30	268
Comprehensive income	3,405	30	3,435

Year Ended December 31, 2019	As Previously Reported	Effect of the Change in Accounting Principle	As Adjusted
Change in retirement plans' funded status	$ (886)	$ 29	$ (857)
Benefit from income tax, net	162	(6)	156
Other comprehensive loss, net of tax	(441)	23	(418)
Comprehensive income	3,043	23	3,066

Year Ended December 31, 2018	As Previously Reported	Effect of the Change in Accounting Principle	As Adjusted
Change in retirement plans' funded status	$ (61)	$ 16	$ (45)
Benefit from income tax, net	5	(4)	1
Other comprehensive loss, net of tax	(320)	12	(308)
Comprehensive income	3,025	12	3,037

CONSOLIDATED BALANCE SHEET

December 31, 2020	As Calculated Under Previous Method	Effect of the Change in Accounting Principle	As Reported
Other current assets	$ 1,243	$ 546	$ 1,789
Other liabilities	9,573	115	9,688
Accumulated other comprehensive loss	(3,981)	431	(3,550)

December 31, 2019	As Previously Reported	Effect of the Change in Accounting Principle	As Adjusted
Other current assets	$ 1,171	$ 508	$ 1,679
Other liabilities	9,453	107	9,560
Accumulated other comprehensive loss	(4,219)	401	(3,818)

CONSOLIDATED STATEMENT OF SHAREHOLDERS' EQUITY

	Retained Earnings	Accumulated Other Comprehensive Loss	Total Shareholders' Equity
December 31, 2017 – as reported	$ 26,444	$ (2,820)	$ 11,435
Cumulative-effect of the Change in Accounting Principle as of December 31, 2017	65	301	366
December 31, 2017 – as adjusted	26,509	(2,519)	11,801
Year ended December 31, 2018 – as reported	2,882	(958)	297
Effect of the Change in Accounting Principle*	(65)	77	12
December 31, 2018 – as adjusted	29,326	(3,400)	12,110
Year ended December 31, 2019 – as reported	2,307	(441)	1,845
Effect of the Change in Accounting Principle	—	23	23
December 31, 2019 – as adjusted	31,633	(3,818)	13,978
Year ended December 31, 2020 – under previous method	1,865	238	1,653
Effect of the Change in Accounting Principle	—	30	30
December 31, 2020 – as reported	$ 33,498	$ (3,550)	$ 15,661

* Includes the impact of our January 1, 2018, adoption of ASU 2018-02, the change in accounting principle which resulted in a reclassification of $65 of stranded tax effects resulting from the implementation of the Tax Cuts and Jobs Act (tax reform) from accumulated other comprehensive loss to retained earnings.

UNAUDITED QUARTERLY CONSOLIDATED STATEMENT OF EARNINGS

	2019				2020			
As Calculated Under Previous Method	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Operating costs and expenses	$ (8,247)	$ (8,465)	$ (8,545)	$ (9,445)	$ (7,808)	$ (8,423)	$ (8,347)	$ (9,161)
Other, net	18	12	(12)	(4)	14	18	12	(15)
Effect of the Change in Accounting Principle								
Operating costs and expenses	$ (13)	$ (13)	$ (32)	$ (20)	$ (7)	$ (7)	$ (12)	$ (27)
Other, net	13	13	32	20	7	7	12	27
As Calculated Under New Method								
Operating costs and expenses	$ (8,260)	$ (8,478)	$ (8,577)	$ (9,465)	$ (7,815)	$ (8,430)	$ (8,359)	$ (9,188)
Other, net	31	25	20	16	21	25	24	12

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of General Dynamics Corporation:

Opinion on the Consolidated Financial Statements

We have audited the accompanying Consolidated Balance Sheet of General Dynamics Corporation and subsidiaries (the Company) as of December 31, 2020 and 2019, the related Consolidated Statements of Earnings, Comprehensive Income, Cash Flows, and Shareholders' Equity for each of the years in the three-year period ended December 31, 2020, and the related notes (collectively, the Consolidated Financial Statements). In our opinion, the Consolidated Financial Statements present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2020, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 9, 2021, expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Change in Accounting Principle

As discussed in Note A to the Consolidated Financial Statements, the Company changed its method of accounting for leases as of January 1, 2019, in accordance with the adoption of Accounting Standards Codification (ASC) Topic 842, *Leases*.

Basis for Opinion

These Consolidated Financial Statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these Consolidated Financial Statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the Consolidated Financial Statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the Consolidated Financial Statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the Consolidated Financial Statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the Consolidated Financial Statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the Consolidated Financial Statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the Consolidated Financial

Statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the Consolidated Financial Statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Estimation of costs to complete for select long-term contracts

As discussed in Note B to the Consolidated Financial Statements, accounting for long-term contracts involves estimation of the costs to complete a contract in order to accurately recognize the associated revenue. The estimated costs to complete each contract are used to assess the proportion of revenues to recognize based upon the costs incurred-to-date in comparison to the total estimate of costs to complete the contract.

We identified the assessment of the estimation of costs to complete for a select group of long-term contracts in the defense segments as a critical audit matter. The estimated costs to complete for the select group of long-term contracts incorporates assumptions, such as labor hours and the cost of materials for the work to be performed. The evaluation of one or more of the assumptions used in estimating the costs to complete each selected contract required a high level of subjective auditor judgment, due to the nature of the individual contracts and related contract performance risks. Specifically, changes to certain assumptions may have a significant impact on the estimated revenue recorded during the period.

The following are primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the estimation of costs to complete the selected long-term contracts. This included contract level controls over the estimated cost assumptions. For certain contracts, we compared the Company's historical estimates of costs to actual costs incurred to assess the Company's ability to estimate accurately. Based on the nature of the individual contract, we evaluated certain assumptions within the Company's estimation of costs to complete by:

- reading the underlying contract and related amendments to obtain an understanding of the contractual requirements and related performance obligations
- assessing costs incurred to-date and the relative progress toward satisfying the performance obligation(s) of the contract
- assessing, if relevant, the estimated costs to complete on similar or predecessor contracts and programs
- inquiring of financial and operational personnel of the Company to identify factors that should be considered within the cost to complete estimates or indications of potential management bias
- inspecting correspondence, if any, between the Company and the customer regarding actual to-date and expected performance
- analyzing the sufficiency of the Company's assessment of contract performance risks included within the estimated costs to complete.

Discount rates used in pension benefit obligation

As discussed in Note R to the Consolidated Financial Statements, the Company's pension benefit obligation and the associated plan assets were $19.7 billion and $14.8 billion, respectively, on December 31, 2020. These balances resulted in a net liability of $4.9 billion. The pension benefit obligation is the estimated present value of future pension benefits attributed to employee services rendered to date, including assumptions about future market conditions. The weighted average discount rate used in estimating the pension benefit obligation as of December 31, 2020, of 2.54% was based on a current yield curve developed from a portfolio of high-quality, fixed-income investments with maturities consistent with the projected benefit payout period. The selected discount rate has a significant effect on the measurement of the pension benefit obligation.

We identified the evaluation of the discount rate for certain pension benefit obligations to be a critical audit matter. This is due to the specialized skills required to assess the discount rate assumption used to discount estimated future benefit payments. In addition, the pension benefit obligations for certain plans were sensitive to changes in this assumption.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the pension benefit obligation process. This included a control related to the determination of the discount rate assumption. We involved an actuarial professional with specialized skills and knowledge, who assisted in:

– evaluating the Company's methodology used to develop the discount rates

– recalculating discount rates using the cash flows and spot rates provided by the Company

– evaluating the Company's determination of the discount rates for certain plans by comparing changes in the discount rate from the prior year against changes in published indices using publicly available market data and historical experience.

We have served as the Company's auditor since 2002.

KPMG LLP

McLean, Virginia
February 9, 2021

SUPPLEMENTARY DATA (UNAUDITED)

(Dollars in millions, except per-share amounts)	2019				2020			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Revenue	$ 9,261	$ 9,555	$ 9,761	$10,773	$ 8,749	$ 9,264	$ 9,431	$10,481
Operating earnings	1,001	1,077	1,184	1,308	934	834	1,072	1,293
Net earnings	745	806	913	1,020	706	625	834	1,002
Earnings per share*:								
Basic	$ 2.59	$ 2.80	$ 3.17	$ 3.53	$ 2.45	$ 2.18	$ 2.91	$ 3.50
Diluted	$ 2.56	$ 2.77	$ 3.14	$ 3.51	$ 2.43	$ 2.18	$ 2.90	$ 3.49

Quarterly data are based on a 13-week period. Because our fiscal year ends on December 31, the number of days in our first and fourth quarters varies slightly from year to year.

Prior-period information has been restated for the retrospective application of a change in accounting principle related to the amortization of actuarial gains and losses for our qualified U.S. government pension plans, which we adopted in the fourth quarter of 2020. For further discussion of this change in accounting principle, see Note T.

* The sum of the basic and diluted earnings per share for the four quarters of the year may differ from the annual basic and diluted earnings per share due to the required method of computing the weighted average number of shares in interim periods.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

EVALUATION OF DISCLOSURE CONTROLS AND PROCEDURES

Our management, under the supervision and with the participation of the Chief Executive Officer and the Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2020, (as defined in Rule 13a-15(e) and Rule 15d-15(e) under the Securities Exchange Act of 1934, as amended). Based on this evaluation, the Chief Executive Officer and Chief Financial Officer concluded that, on December 31, 2020, our disclosure controls and procedures were effective.

The certifications of the company's Chief Executive Officer and Chief Financial Officer required under Section 302 of the Sarbanes-Oxley Act have been filed as Exhibits 31.1 and 31.2 to this report.

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

To the Shareholders of General Dynamics Corporation:

The management of General Dynamics Corporation is responsible for establishing and maintaining adequate internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Our internal control system was designed to provide reasonable assurance to our management and board of directors regarding the preparation and fair presentation of published financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management evaluated the effectiveness of our internal control over financial reporting as of December 31, 2020. In making this evaluation, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control – Integrated Framework (2013)*. Based on our evaluation we believe that, as of December 31, 2020, our internal control over financial reporting is effective based on those criteria.

KPMG LLP has issued an audit report on the effectiveness of our internal control over financial reporting. The KPMG report immediately follows this report.

Phebe N. Novakovic	Jason W. Aiken
Chairman and Chief Executive Officer	Senior Vice President and Chief Financial Officer

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of General Dynamics Corporation:

Opinion on Internal Control Over Financial Reporting

We have audited General Dynamics Corporation and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Consolidated Balance Sheet of the Company as of December 31, 2020 and 2019, the related Consolidated Statements of Earnings, Comprehensive Income, Cash Flows, and Shareholders' Equity for each of the years in the three-year period ended December 31, 2020, and the related notes (collectively, the Consolidated Financial Statements), and our report dated February 9, 2021, expressed an unqualified opinion on those Consolidated Financial Statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

KPMG LLP

McLean, Virginia
February 9, 2021

CHANGES IN INTERNAL CONTROL OVER FINANCIAL REPORTING

There were no changes in our internal control over financial reporting that occurred during the quarter ended December 31, 2020, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required to be set forth herein, except for the information included under Information About Our Executive Officers in Part I, is included in the sections entitled "Election of the Board of Directors of the Company," "Governance of the Company – Our Culture of Ethics," "Audit Committee Report" and, if included, "Other Information – Delinquent Section 16(a) Reports" in our definitive proxy statement for our 2021 annual shareholders meeting (the Proxy Statement), which sections are incorporated herein by reference.

ITEM 11. EXECUTIVE COMPENSATION

The information required to be set forth herein is included in the sections entitled "Governance of the Company – Director Compensation," "Compensation Discussion and Analysis," "Executive Compensation" and "Compensation Committee Report" in our Proxy Statement, which sections are incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required to be set forth herein is included in the sections entitled “Security Ownership of Management” and “Security Ownership of Certain Beneficial Owners” in our Proxy Statement, which sections are incorporated herein by reference.

The information required to be set forth herein with respect to securities authorized for issuance under our equity compensation plans is included in the section entitled “Equity Compensation Plan Information” in our Proxy Statement, which section is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required to be set forth herein is included in the sections entitled “Governance of the Company – Related Person Transactions Policy” and “Governance of the Company – Director Independence” in our Proxy Statement, which sections are incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required to be set forth herein is included in the section entitled “Selection of Independent Auditors – Audit and Non-Audit Fees” in our Proxy Statement, which section is incorporated herein by reference.

PART IV

ITEM 15. EXHIBITS

1. Consolidated Financial Statements

Consolidated Statement of Earnings
Consolidated Statement of Comprehensive Income
Consolidated Balance Sheet
Consolidated Statement of Cash Flows
Consolidated Statement of Shareholders’ Equity
Notes to Consolidated Financial Statements (A to T)

2. Index to Exhibits - General Dynamics Corporation

Commission File No. 1-3671

Exhibits listed below, which have been filed with the Commission pursuant to the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, and which were filed as noted below, are hereby incorporated by reference and made a part of this report with the same effect as if filed herewith.

Exhibit Number	Description
3.1	Restated Certificate of Incorporation of the company (incorporated herein by reference from the company's current report on Form 8-K, filed with the Commission October 7, 2004)
3.2	Amended and Restated Bylaws of General Dynamics Corporation (incorporated herein by reference from the company's current report on Form 8-K, filed with the Commission December 3, 2015)
4.1	Indenture dated as of August 27, 2001, among the company, the Guarantors (as defined therein) and The Bank of New York, as Trustee
4.2	Sixth Supplemental Indenture dated as of July 12, 2011, among the company, the Guarantors (as defined therein) and The Bank of New York Mellon, as Trustee (incorporated herein by reference from the company's current report on Form 8-K, filed with the Commission July 12, 2011)
4.3	Seventh Supplemental Indenture dated as of November 6, 2012, among the company, the Guarantors (as defined therein) and The Bank of New York Mellon, as Trustee (incorporated herein by reference from the company's current report on Form 8-K, filed with the Commission November 6, 2012)
4.4	Indenture dated as of March 24, 2015, among the company, the Guarantors (as defined therein) and The Bank of New York Mellon, as Trustee (incorporated herein by reference from the company's registration statement on Form S-3, filed with the Commission March 24, 2015)
4.5	First Supplemental Indenture dated as of August 12, 2016, among the company, the Guarantors (as defined therein) and The Bank of New York Mellon, as Trustee (incorporated herein by reference from the company's current report on Form 8-K, filed with the Commission August 12, 2016)
4.6	Second Supplemental Indenture dated as of September 14, 2017, among the company, the Guarantors (as defined therein) and The Bank of New York Mellon, as Trustee (incorporated herein by reference from the company's current report on Form 8-K, filed with the Commission September 14, 2017)
4.7	Indenture dated as of March 22, 2018, among the company, the Guarantors (as defined therein) and The Bank of New York Mellon, as Trustee (incorporated herein by reference from the company's registration statement on Form S-3, filed with the Commission March 22, 2018)
4.8	First Supplemental Indenture dated as of May 11, 2018, among the company, the Guarantors (as defined therein) and The Bank of New York Mellon, as Trustee (incorporated herein by reference from the company's current report on Form 8-K, filed with the Commission May 11, 2018)
4.9	Second Supplemental Indenture, dated as of March 25, 2020, among General Dynamics Corporation, the Guarantors named therein and The Bank of New York Mellon, as Trustee (includes forms of 3.250% Notes due 2025, 3.500% Notes due 2027, 3.625% Notes due 2030, 4.250% Notes due 2040 and 4.250% Notes due 2050) (incorporated herein by reference from the company's current report on Form 8-K, filed with the Securities and Exchange Commission on March 25, 2020)
4.10	Description of General Dynamics Corporation's Securities Registered Pursuant to Section 12 of the Exchange Act**

10.1*	General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan (incorporated herein by reference from the company's registration statement on Form S-8 (No. 333-217656) filed with the Commission May 4, 2017)
10.2*	Form of Non-Statutory Stock Option Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan (incorporated herein by reference from the company's quarterly report on Form 10-Q for the quarter ended July 1, 2012, filed with the Commission August 1, 2012)
10.3*	Form of Non-Statutory Stock Option Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan (for certain executive officers who are subject to the company's Compensation Recoupment Policy) (incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended March 30, 2014, filed with the Commission April 23, 2014)
10.4*	Form of Non-Statutory Stock Option Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan (for grants made March 4, 2015, through March 1, 2016, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy) (incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended April 5, 2015, filed with the Commission April 29, 2015)
10.5*	Form of Non-Statutory Stock Option Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan (for grants beginning March 2, 2016, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy) (incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended April 3, 2016, filed with the Commission April 27, 2016)
10.6*	Form of Restricted Stock Award Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan (for grants beginning March 4, 2015, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy) (incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended April 5, 2015, filed with the Commission April 29, 2015)
10.7*	Form of Restricted Stock Unit Award Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan (for grants beginning March 2, 2016) (incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended April 3, 2016, filed with the Commission April 27, 2016)
10.8*	Form of Performance Restricted Stock Unit Award Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan (for grants beginning March 2, 2016, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy) (incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended April 3, 2016, filed with the Commission April 27, 2016)

10.9*	Form of Non-Statutory Stock Option Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan (for grants beginning May 3, 2017, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy) (incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended July 2, 2017, filed with the Commission July 26, 2017)
10.10*	Form of Restricted Stock Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan (for grants beginning May 3, 2017, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy) (incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended July 2, 2017, filed with the Commission July 26, 2017)
10.11*	Form of Restricted Stock Unit Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan (for grants beginning May 3, 2017) (incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended July 2, 2017, filed with the Commission July 26, 2017)
10.12*	Form of Performance Restricted Stock Unit Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan (for grants beginning May 3, 2017, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy) (incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended July 2, 2017, filed with the Commission July 26, 2017)
10.13*	Form of Performance Stock Unit Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan (for grants to named executive officers beginning March 6, 2019) (incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended March 31, 2019, filed with the Commission April 24, 2019)
10.14*	Form of Non-Statutory Stock Option Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan (for grants to named executive officers beginning March 4, 2020, and including, as indicated therein, provisions for certain named executive officers who are subject to the company's Compensation Recoupment Policy) (incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended March 29, 2020, filed with the Commission April 29, 2020)
10.15*	Form of Restricted Stock Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan (for grants to named executive officers beginning March 4, 2020, and including, as indicated therein, provisions for certain named executive officers who are subject to the company's Compensation Recoupment Policy) (incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended March 29, 2020, filed with the Commission April 29, 2020)

10.16*	Form of Performance Stock Unit Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan (for grants to named executive officers beginning March 4, 2020, and including, as indicated therein, provisions for certain named executive officers who are subject to the company's Compensation Recoupment Policy) (incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended March 29, 2020, filed with the Commission April 29, 2020)
10.17*	Successor Retirement Plan for Directors (incorporated herein by reference from the company's annual report on Form 10-K for the year ended December 31, 2001, filed with the Commission March 29, 2002)
10.18*	General Dynamics Corporation Supplemental Savings Plan, amended and restated effective as of January 1, 2017 (incorporated herein by reference from the company's annual report on Form 10-K for the year ended December 31, 2016, filed with the Commission February 6, 2017)
10.19*	Form of Severance Protection Agreement for executive officers (incorporated herein by reference from the company's annual report on Form 10-K for the year ended December 31, 2016, filed with the Commission February 6, 2017)
10.20*	General Dynamics Corporation Supplemental Retirement Plan, restated effective January 1, 2010 (incorporating amendments through March 31, 2011) (incorporated herein by reference from the company's quarterly report on Form 10-Q for the quarterly period ended April 3, 2011, filed with the Commission May 3, 2011)
10.21*	Amendment to the General Dynamics Corporation Supplemental Retirement Plan, effective January 5, 2015 (incorporated herein by reference from the company's annual report on Form 10-K for the year ended December 31, 2014, filed with the Commission February 9, 2015)
10.22*	Amendment to the General Dynamics Corporation Supplemental Retirement Plan, effective January 1, 2016 (incorporated herein by reference from the company's annual report on Form 10-K for the year ended December 31, 2016, filed with the Commission February 6, 2017)
10.23*	Amendment to the General Dynamics Corporation Supplemental Retirement Plan, effective January 1, 2019 (incorporated herein by reference from the company's annual report on Form 10-K for the year ended December 31, 2018, filed with the Commission February 13, 2019)
10.24*	Amendment to the General Dynamics Corporation Supplemental Retirement Plan, effective December 20, 2019**
18	Preferability letter from KPMG, LLP regarding a change in accounting method**
21	Subsidiaries**
22	Subsidiary Guarantors (incorporated herein by reference from the company's quarterly report on Form 10-Q for the quarter ended June 28, 2020, filed with the Commission July 29, 2020)
23	Consent of Independent Registered Public Accounting Firm**
24	Power of Attorney**
31.1	Certification by CEO pursuant to Section 302 of the Sarbanes-Oxley Act of 2002**

31.2	Certification by CFO pursuant to Section 302 of the Sarbanes-Oxley Act of 2002**
32.1	Certification by CEO pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**
32.2	Certification by CFO pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**
101.INS	Inline eXtensible Business Reporting Language (XBRL) Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH	Inline XBRL Taxonomy Extension Schema Document**
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document**
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document**
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document**
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document**
104	Cover Page Interactive Data File (embedded within the Inline XBRL document and contained in Exhibit 101)

* Indicates a management contract or compensatory plan or arrangement required to be filed pursuant to Item 15(b) of Form 10-K.
** Filed or furnished electronically herewith.

In accordance with Item 601(b)(4)(iii)(A) of Regulation S-K, copies of certain instruments defining the rights of holders of long-term debt of the company are not filed herewith. Pursuant to this regulation, we hereby agree to furnish a copy of any such instrument to the SEC upon request.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

GENERAL DYNAMICS CORPORATION

by William A Moss

William A. Moss
Vice President and Controller

Dated: February 9, 2021

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below on February 9, 2021, by the following persons on behalf of the Registrant and in the capacities indicated, including a majority of the directors.

Phebe N. Novakovic	Chairman, Chief Executive Officer and Director (Principal Executive Officer)
Jason W. Aiken	Senior Vice President and Chief Financial Officer (Principal Financial Officer)
William A. Moss	Vice President and Controller (Principal Accounting Officer)
* James S. Crown	Director
* Rudy F. deLeon	Director
* Cecil D. Haney	Director
* Mark M. Malcolm	Director
* James N. Mattis	Director
* C. Howard Nye	Director
* William A. Osborn	Director
* Catherine B. Reynolds	Director
* Laura J. Schumacher	Director
* Robert K. Steel	Director
* John G. Stratton	Director
* Peter A. Wall	Director

* By Gregory S. Gallopoulos pursuant to a Power of Attorney executed by the directors listed above, which Power of Attorney has been filed as an exhibit hereto and incorporated herein by reference thereto.

Gregory S. Gallopoulos
Senior Vice President, General Counsel and Secretary

Board

Phebe N. Novakovic
Chairman and
Chief Executive Officer

James S. Crown
Lead Director

Rudy F. deLeon

Cecil D. Haney

Mark M. Malcolm

James N. Mattis

C. Howard Nye

William A. Osborn

Catherine B. Reynolds

Laura J. Schumacher

Robert K. Steel

John G. Stratton

Peter A. Wall

Corporate Leadership

Phebe N. Novakovic
Chairman and
Chief Executive Officer

Jason W. Aiken
Senior Vice President
Chief Financial Officer

Gregory S. Gallopoulos
Senior Vice President
General Counsel and Secretary

Thomas W. Kirchmaier
Senior Vice President
Planning, Communications
and Trade Compliance

Kimberly A. Kuryea
Senior Vice President
Human Resources and
Administration

Andy C. Chen
Vice President
Treasurer

Kenneth R. Hayduk
Vice President
Tax

William A. Moss
Vice President
Controller

Howard A. Rubel
Vice President
Investor Relations

Elizabeth L. Schmid
Vice President
Government Relations

Business Leadership

AEROSPACE

Mark L. Burns
Vice President
President
Gulfstream

David Paddock
Vice President
President
Jet Aviation

Ira P. Berman
Vice President
Senior Vice President
Administration and
General Counsel
Gulfstream

MARINE SYSTEMS

Robert E. Smith
Executive Vice President

David J. Carver
Vice President
President
NASSCO

Kevin M. Graney
Vice President
President
Electric Boat

Dirk A. Lesko
Vice President
President
Bath Iron Works

COMBAT SYSTEMS

Mark C. Roualet
Executive Vice President

Danny Deep
Vice President
President
Land Systems

Firat H. Gezen
Vice President
President
Ordnance and Tactical
Systems

Alfonso J. Ramonet
Vice President
President
European Land Systems

TECHNOLOGIES

Christopher Marzilli
Executive Vice President

Christopher J. Brady
Vice President
President
Mission Systems

M. Amy Gilliland
Senior Vice President
President
Information Technology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