

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, 2017

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)

<u>Delaware</u>	<u>13-1673581</u>
<i>State or other jurisdiction of incorporation or organization</i>	<i>IRS Employer Identification No.</i>
2941 Fairview Park Drive, Suite 100 Falls Church, Virginia	<u>22042-4513</u>
<i>Address of principal executive offices</i>	<i>Zip code</i>

Registrant's telephone number, including area code:

(703) 876-3000

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

<u>Title of each class</u>	<u>Name of exchange on which registered</u>
Common stock, par value \$1 per share	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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment of this Form 10-K.

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 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 \$52,357,779,347 as of July 2, 2017 (based on the closing price of the shares on the New York Stock Exchange).

296,933,621 shares of the registrant's common stock, \$1 par value per share, were outstanding on January 28, 2018.

DOCUMENTS INCORPORATED BY REFERENCE:

Part III incorporates by reference information from certain portions of the registrant's definitive proxy statement for the 2018 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 offers a broad portfolio of products and services in business aviation; combat vehicles, weapons systems and munitions; information technology (IT) services and C4ISR (command, control, communications, computers, intelligence, surveillance and reconnaissance) solutions; and shipbuilding and ship repair.

General Dynamics was incorporated in Delaware in 1952. The company grew organically and through acquisitions until the early 1990s when we sold nearly our entire portfolio except for our military-vehicle and submarine businesses. Starting in the mid-1990s, we began expanding again by acquiring Gulfstream Aerospace Corporation, combat-vehicle-related businesses, IT product and service companies and additional shipyards, forming the foundation of our company today.

We continue to expand our business through organic growth and acquisitions. We focus on delivering superior products and services to our customers, and creating value for our shareholders through a relentless focus on operational excellence and continuous improvement.

Our company is organized into four business groups: Aerospace, Combat Systems, Information Systems and Technology, and Marine Systems. Each group is comprised of two or more business units. Each unit has responsibility for its strategy and operational performance, providing the flexibility needed to stay close to customers, perform on programs and remain agile. Our corporate headquarters is responsible for setting the strategic direction and governance of the company, the allocation of capital and promoting a culture of ethics and integrity that defines how we operate. Our management team delivers on our commitments to shareholders through disciplined execution of our robust backlog, efficient cash-flow conversion and prudent capital deployment. We focus on managing costs, implementing continuous improvement initiatives and collaborating across our businesses to achieve our goals of maximizing earnings and cash and driving return on invested capital.

Following is additional information on each of our business groups. Prior-period information has been restated for the adoption of Accounting Standards Codification (ASC) Topic 606, Revenue from Contracts with Customers, which we adopted on January 1, 2017, as discussed in Note T to the Consolidated Financial Statements in Item 8. For selected financial information, see Note R to the Consolidated Financial Statements in Item 8.

AEROSPACE

Our Aerospace group is at the forefront of the business-jet industry. We deliver a family of Gulfstream aircraft and provide a range of services for Gulfstream aircraft and aircraft produced by other original equipment manufacturers (OEMs). The Aerospace group is known for:

- superior aircraft design, quality, performance, safety and reliability;
- technologically advanced cockpit and cabin systems; and
- industry-leading product service and support.

At Gulfstream, we design, develop, manufacture, service and support the world's most technologically advanced business-jet aircraft. Our product line includes aircraft across a spectrum of price and performance options in the large- and mid-cabin business-jet market. The varying ranges, speeds and cabin dimensions of these aircraft are well-suited for the needs of a diverse, global customer base.

We invest in Gulfstream to introduce new products and first-to-market enhancements that broaden customer choice, improve aircraft performance and set new standards for customer safety, comfort and in-flight productivity. We created a new market with the G650 family of business jets. The G650 is the fastest non-supersonic aircraft to circumnavigate the globe, having flown westbound around the world in a record-setting 41 hours and 7 minutes. The G650 and G650ER have claimed 70 world speed records. The G650 also earned the National Aeronautic Association's Robert J. Collier Trophy, an annual award recognizing the greatest achievement in U.S. aeronautics or astronautics with respect to improving performance, efficiency and safety. In 2017, we celebrated the five-year anniversary of the G650's type certification from the Federal Aviation Administration (FAA) and its entry into service. Today, there are more than 280 G650 and G650ER aircraft operating in 40 countries.

Our newest Gulfstream products are two clean-sheet large-cabin business jets, the G500 and G600, which exemplify our commitment to performance, safety, efficiency and innovation. The aircraft are progressing through concurrent flight-test programs in preparation for FAA certification. Five G500 test aircraft have completed more than 4,200 test hours since first flight in 2015, and five G600 aircraft have accumulated more than 1,300 test hours since first flight in 2016. Both aircraft have exceeded original expectations throughout our rigorous flight test program. In late 2017, we announced increased performance standards for both aircraft. At Mach 0.85, the G500 can fly 5,200 nautical miles, and the G600 can fly 6,500 nautical miles. The performance of these aircraft demonstrate our culture of continuous improvement and the discipline and rigor inherent in our design, development and flight-test programs.

Our product enhancement and development efforts include initiatives in advanced avionics, composites, renewable fuels, flight-control systems, acoustics, cabin technologies and vision systems. One example is the Symmetry Flight Deck introduced with the G500 and G600, which includes 10 touchscreens and active control sidesticks, a first for business aviation. The touchscreens improve how pilots interact with onboard systems, and the sidesticks are digitally linked to allow both pilots to see and feel each other's control inputs, enhancing situational awareness and further improving safety of the aircraft.

Gulfstream designs, develops and manufactures aircraft in Savannah, Georgia, including manufacturing all large-cabin models. The mid-cabin model is assembled by a non-U.S. partner. All models are outfitted in the group's U.S. facilities. In support of Gulfstream's growing aircraft portfolio and customer base, we continue to invest in our facilities. At our Savannah campus, we have constructed facilities, including purpose-built G500, G600 and G650 manufacturing facilities; increased aircraft service capacity; and opened a new product-support distribution center and dedicated research and development centers.

The group offers extensive support for the more than 2,600 Gulfstream aircraft in service around the world with the largest factory-owned service network in the business-aviation industry, including professionals located around the globe. The service network for Gulfstream aircraft continues to evolve to address the demands of our growing customer base. We operate 12 company-owned service centers worldwide and have more than 20 factory-authorized service centers and authorized warranty facilities. We also operate a 24-hour-per-day/365-day-per-year Customer Contact Center and offer on-call Gulfstream aircraft technicians ready to deploy for customer-service requirements, providing maintenance support on every continent.

Jet Aviation has been a global leader in business aviation services for 50 years, providing comprehensive services and an extensive network of locations for aircraft owners and operators. With approximately 30

airport facilities throughout Asia, the Caribbean, Europe, the Middle East and North America, our service offerings include maintenance, fixed-base operations (FBO), aircraft management, charter and staffing services.

In response to customer demand and the growing installed base of aircraft around the world, we have expanded Jet Aviation's service network over the past several years and continue to do so. We are expanding our maintenance and FBO facility in Singapore, and in 2017 we opened a new FBO and hangar in Bedford, Massachusetts, and an FBO facility in Dubai, United Arab Emirates. We also took over the management of an FBO at Luis Muñoz Marín International Airport in San Juan, Puerto Rico, and we acquired an FBO at Washington Dulles International Airport that has six hangars, 10 acres of ramp space and a newly renovated FBO terminal building.

In addition to these capabilities, Jet Aviation offers custom complex completions for narrow- and wide-body aircraft. We are expanding our Basel, Switzerland, facility to accommodate increased demand for wide-body completions and refurbishments.

As a market leader in the business-aviation industry, the Aerospace group is focused on developing innovative first-to-market technologies and products; providing exemplary and timely service to customers globally; and driving efficiencies in the aircraft production, outfitting and service processes.

Revenue for the Aerospace group was 26% of our consolidated revenue in 2017 and 2016 and 29% in 2015. Revenue by major products and services was as follows:

Year Ended December 31	2017	2016	2015
Aircraft manufacturing, outfitting and completions	\$ 6,320	\$ 6,074	\$ 7,497
Aircraft services	1,743	1,625	1,569
Pre-owned aircraft	66	116	111
Total Aerospace	\$ 8,129	\$ 7,815	\$ 9,177

COMBAT SYSTEMS

Our Combat Systems group offers combat vehicles, weapons systems and munitions for the U.S. government and its allies around the world. We are a platform solutions provider offering market-leading design, development, production, modernization and sustainment services. With extensive, diverse and proven product lines, we have the agility to deliver tailored solutions to meet a wide array of customer mission needs. Comprised of three business units, European Land Systems, Land Systems, and Ordnance and Tactical Systems, the group's product lines include:

- wheeled combat and tactical vehicles;
- main battle tanks and tracked combat vehicles;
- weapons systems, armament and munitions; and
- maintenance, logistics support and sustainment services.

Wheeled combat and tactical vehicles: The group provides a full spectrum of vehicles to a global customer base. The eight-wheeled, medium-weight Stryker combat vehicle continues to prove itself as one of the most versatile vehicles in the U.S. Army's fleet, combining mobility and survivability into a deployable and responsive combat support vehicle. There are 11 Stryker variants, with 85% commonality across the fleet. We are working with the Army to convert all nine of its Stryker Brigade Combat Teams to our patented double-V-hull configuration, which significantly improves protection for soldiers. We are modernizing the Stryker by upgrading the vehicles' power train, suspension and network capabilities, with the first of these vehicles delivered in September 2017.

We continue to innovate and demonstrate ways in which the Stryker can be modified to help the Army meet its urgent operational needs. In 2015, the Army identified a requirement to increase the lethality of Strykers, and through internal research and development (R&D) and an accelerated acquisition effort, we are adding a 30-millimeter, remotely-operated cannon to 83 Stryker Infantry Carrier Vehicles. We delivered the first prototype in 2016, 15 months after the initial contract award. The first production vehicle was sent to the Germany-based 2nd Cavalry Regiment in December 2017. Another example is our Stryker Maneuver SHORAD Launcher (MSL) vehicle, which we quickly developed to address the Army's directed requirement to counter closer-in air and missile defense threats by integrating an air defense system missile launcher into a reconfigured Stryker vehicle.

The group has a market-leading position in light armored vehicles (LAVs) with more than 13,000 vehicles delivered around the world. We offer advanced technologies combined with combat-proven survivability. We are upgrading the Canadian Army's fleet of LAVs to increase mobility, survivability and lethality, as well as enhancing the vehicles' surveillance suite. We also have a \$10 billion contract to provide wheeled armored vehicles along with associated logistics support for a Middle Eastern customer through 2024.

We deliver high-mobility, versatile Pandur and Piranha armored vehicles. The Pandur family of vehicles serves as a common platform for various armament and equipment configurations and the Piranha is a multi-role vehicle well-suited for a variety of combat operations. In 2017, we received a contract from the Austrian Army to supply Pandur 6x6 armored vehicles. We are delivering more than 300 Piranha vehicles in six variants to the Danish Ministry of Defence for its armored personnel carrier program, as well as sustaining the vehicles in the future. The Spanish Army selected the Piranha as its 8x8 armored fighting vehicle, and we are now performing extensive technological trials in anticipation of a production contract. In addition, we are producing Piranha armored vehicles for Ireland, Romania and Switzerland.

The group offers a range of light tactical vehicles to global customers. The Flyer is a lightweight, modular vehicle built for speed and mobility that allows access to previously unreachable terrain in demanding environments. We are delivering this family of vehicles for the U.S. Special Operations Command and the Army's Ground Mobility Vehicle programs. Outside the United States, the Duro and Eagle vehicles offer a range of options in the 6- to 15-ton weight class. We are upgrading Duro tactical vehicles for the Swiss Army through 2022 and delivering Eagle armored patrol vehicles to the Danish Army, with initial deliveries scheduled for 2018.

Tanks and tracked combat vehicles: Combat Systems' powerful tracked vehicles provide key combat capabilities to customers around the world. The Abrams main battle tank offers a proven, decisive edge in combat. We are maximizing the effectiveness and lethality of the U.S. Army's M1A2 Abrams tank fleet with the System Enhancement Package Version 3 (SEPV3), providing technological advancements in communications, power generation, fuel efficiency and improved armor. Internationally, the group is upgrading Abrams tanks for several U.S. allies, including Kuwait, Morocco and Saudi Arabia. In 2017, we received an award to upgrade up to 786 Abrams tanks to the SEPV3 configuration. Additional modernization efforts include integrating multiple engineering changes into the SEPV3 to design and develop SEPV4 prototypes with upgraded sensors .

The ASCOD is a highly versatile tracked combat vehicle with multiple versions, including the Spanish Pizarro and the Austrian Ulan. Currently the group is producing the British Army's AJAX armoured fighting vehicle, a next-generation version of the ASCOD. In addition to production, the group will provide in-service support for the AJAX vehicle fleet. With six variants, AJAX offers advanced electronic architecture and proven technology for an unparalleled balance of protection, survivability and reliability for a vehicle in its weight class. In 2017, the AJAX vehicles underwent extensive testing trials in preparation for delivery to the British Army, including successful manned live firing trials. The vehicle is scheduled to begin entering into service in 2020.

With our large installed base of wheeled and tracked vehicles around the world and the expertise gained from our innovative research, engineering and production programs, we are well-positioned for vehicle modernization programs, support and sustainment services and future development programs.

Weapons systems, armament and munitions: Complementing these military-vehicle offerings, the group 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. The group also produces legacy and next-generation weapons systems for shipboard applications. For airborne platforms, we produce weapons for fighter aircraft, including high-speed Gatling guns for all U.S. fixed-wing military aircraft.

Our 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 allies. In North America, the group maintains a market-leading position in the supply of Hydra-70 rockets, large-caliber tank ammunition, medium-caliber ammunition, mortar and artillery projectiles, tactical missile aerostuctures, and high-performance warheads; military propellants; and conventional bombs and bomb cases.

The Combat Systems group emphasizes operational execution and continuous process improvements to enhance our productivity. In an environment of uncertain threats and evolving customer needs, the group is focused on innovation, affordability and speed-to-market to deliver increased performance and survivable, mission-effective products.

Revenue for the Combat Systems group was 19% of our consolidated revenue in 2017 and 18% in 2016 and 2015 . Revenue by major products and services was as follows:

Year Ended December 31	2017	2016	2015
Wheeled combat and tactical vehicles	\$ 2,506	\$ 2,444	\$ 2,597
Weapons systems, armament and munitions	1,633	1,517	1,508
Tanks and tracked vehicles	1,225	934	805
Engineering and other services	585	635	733
Total Combat Systems	\$ 5,949	\$ 5,530	\$ 5,643

INFORMATION SYSTEMS AND TECHNOLOGY

Our Information Systems and Technology group provides technologies, products and services in support of thousands of programs for a wide range of military, federal civilian, state and local customers. The group's market leadership results from decades of domain expertise, incumbency on high-priority programs and continuous innovation to meet the ever-changing information-systems and mission-support needs of our customers. The group's diverse portfolio includes:

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

IT solutions and mission-support services: As a trusted systems integrator for more than 50 years, we design, build and operate enterprise information systems, including large-scale, secure IT networks and systems. In addition, we provide a broad range of technical, professional and training services.

Our Information Technology business supports the full enterprise IT lifecycle, designing, integrating, operating, maintaining and modernizing complex data, voice and multimedia networks. Working closely with our customers, we ensure their network infrastructures are secure, efficient, scalable and cost-effective.

We have extensive experience consolidating, building and operating data centers. In 2017, we were awarded an enterprise IT contract to support the Defense Logistics Agency's J6 Enterprise Technology Services program and a contract to modernize NATO's IT infrastructure that supports NATO member countries. The group was also awarded a large contract to manage an intelligence community agency's global data center and hybrid cloud environment.

The group is at the forefront of agile development, big data analytics and cloud and virtualization technologies and services, offering solutions that meet multiple federal government and military compliance requirements. We developed and deployed the largest virtual desktop environment for the intelligence community, with over 80,000 users. We also support security operations and computer network defense centers across multiple intelligence agencies, with more than 100,000 accounts and 50,000 devices across classified and unclassified networks.

We provide leading-edge training strategies and technologies for military operations, range support, simulation and professional development. For example, we deliver education curricula and training throughout the Navy and live, virtual, constructive and gaming capabilities to more than half of the Army's Mission Training Complexes. In 2017, we were awarded three contracts to continue delivering education and training support services to the Naval Education and Training Command.

The group's technical and professional support services include providing domain specialists and technical solutions to help customers meet technology, operational, critical planning and staffing needs. We provide these services to the U.S. Department of Homeland Security, U.S. Special Operations Command, and intelligence and defense customers, as well as to federal civilian agencies, including the U.S. Census Bureau and the Centers for Medicare & Medicaid Services.

C4 mission systems: We design, build, integrate, deploy and support communications, command-and-control and computer mission systems; imagery, signals- and multi-intelligence systems; and cyber security systems for customers in the U.S. defense, intelligence and homeland security communities, as well as U.S. allies.

Our Mission Systems business is a leading manufacturer and integrator of tactical, secure communications systems. As the prime contractor on the Common Hardware Systems-4 (CHS-4) contract, we provide the Army with next-generation computing and communications equipment. We are also the prime contractor for the Army's backbone mobile communications network named Warfighter Information Network-Tactical (WIN-T). WIN-T Increment 1 was rapidly deployed to Iraq and Afghanistan beginning in 2004 and by 2012 was fully fielded to the Army, National Guard and Reserves. Increment 2 has been fielded to nine division headquarters and 15 brigade combat teams, providing a more capable and resilient network, on-the-move capabilities and the ability to quickly insert new technologies into the system. We continue to work closely with our Army customer to evolve its next-generation combat network to meet the threats of the future.

With a 50-year legacy in radio frequency communications and networks, the group offers a range of radio products and systems for military, government and commercial customers, as well as long-term evolution (LTE) broadband communications networks for first responders. Our AN/USC-61(C) Digital Modular Radio (DMR) is the first software-defined radio to become a communications system standard for the U.S. military. We recently added the Mobile User Objective System (MUOS) waveform to the DMR, providing secure ultra-high frequency satellite communications. The group continues to deliver CM-300/350 V2 digital radios to the FAA, used by air traffic control centers, commercial airports, military air stations and range installations for reliable ground-to-air communications.

We provide many of these capabilities to non-U.S. agencies and commercial customers. We have developed and deployed and continue to modernize and support the Canadian Army's fully integrated, secure combat voice and data network. We leveraged this experience to deliver the U.K. Ministry of Defence's Bowman tactical communication system, for which we currently provide ongoing support and capability upgrades. We were awarded a contract in 2017 for the U.K.'s next-generation tactical communication and information system. The program, known as Morpheus, will modernize communications and command-and-control systems across three armed services by evolving the Bowman network into a more open, agile architecture. In Canada, our public safety-focused communication system, the SHIELD Ecosystem, allows first responders to gather and exchange information quickly using digital applications on secure systems and provides the availability and location of in-field personnel at all times.

In command-and-control systems, we have a 50-year legacy of providing advanced fire-control systems for Navy submarine programs, and we are developing and integrating commercial off-the-shelf software and hardware upgrades to improve the tactical control capabilities for several submarine classes. The group's combat and seaframe control systems serve as the technology backbone for the Navy's Independence-variant Littoral Combat Ship (LCS) and the Expeditionary Fast Transport (EPF) ships. In addition, the group manufactures unmanned undersea vehicles for the U.S. military and commercial customers, offering a range of systems and configurations, including more than 70 different sensors on 80 vehicles that can operate in the open ocean and constrained waterways.

We also deliver high-assurance mission and display systems, signal and sensor processing and command-and-control solutions for airborne platforms. Our aircraft mission computers are on the Navy's F/A-18 Super Hornet strike fighter and the Marine Corps' AV-8B Harrier II aircraft, giving pilots advanced situational awareness and combat systems control. The P-3 Orion and other maritime patrol aircraft use our digital stores management system.

ISR solutions: The Information Systems and Technology group provides ISR capabilities to a variety of classified programs. Our expertise includes multi-intelligence ground systems and large-scale, high-performance data and signal processing. We deliver high-reliability, long-life sensors and payloads designed to perform in the most extreme environments, including undersea sensor and power systems and space payloads.

Cyber security solutions are embedded throughout the group's IT and systems engineering programs. We deliver comprehensive cyber security-related products and services to help customers defend and protect their networks from the persistent and growing cyber threat. We continue to evolve our TACLANE family of network encryptors, the most widely-deployed NSA-certified Type 1 encryption device, and our NSA-certified ProtecD@R family of data-at-rest encryptors, which protect stored data on computers, tactical platforms, sensors and servers. We released TACLANE-FLEX in 2017, a scalable and flexible solution that supports additional networking and security capabilities. The group also delivers technologies that provide access to information at various security levels, accommodating the increased demand for cloud computing and mobility. We acquired a company in 2017 that expands our multi-level security capabilities with products intended for tactical use.

The Information Systems and Technology group's market is diverse and dynamic. We are focused on maintaining a market-leading position by developing innovative solutions to meet customer requirements and optimizing the performance of the business to ensure cost competitiveness. The group is well-positioned to continue meeting the needs of our broad customer base.

Revenue for the Information Systems and Technology group was 29% of our consolidated revenue in 2017 , 30% in 2016 and 28% in 2015 . Revenue by major products and services was as follows:

Year Ended December 31	2017	2016	2015
IT services	\$ 4,410	\$ 4,428	\$ 4,510
C4ISR solutions	4,481	4,716	4,419
Total Information Systems and Technology	\$ 8,891	\$ 9,144	\$ 8,929

MARINE SYSTEMS

With shipyards located on both U.S. coasts, our Marine Systems group is a market-leading designer and builder of nuclear-powered submarines, surface combatants, and auxiliary and combat-logistics ships for the U.S. Navy and Jones Act ships for commercial customers, as well as a provider of repair services for several U.S. Navy ship classes. The group's portfolio of platforms and capabilities includes:

- nuclear-powered submarines;
- surface combatants;
- auxiliary and combat-logistics ships;
- commercial product carriers and containerships;
- design and engineering support services; and
- maintenance, modernization and lifecycle support services.

We have a long history as one of the primary shipbuilders for the Navy, constructing and delivering ships and designing and developing next-generation platforms. More than 90% of the group's revenue is for Navy engineering, construction and lifecycle support awarded under large, multi-year contracts.

We are the prime contractor for the Navy's Virginia-class submarine program. Designed for the full range of global mission requirements, these stealthy boats excel in littoral and open-ocean environments. The Navy is procuring Virginia-class submarines in multi-boat blocks. Electric Boat continues to operate at a two submarines-per-year construction rate. We have delivered 15 Virginia-class submarines in conjunction with an industry partner that shares in the construction, and the remaining 13 submarines under contract are scheduled for delivery through 2023. Since delivering the lead Virginia-class submarine, the cost and time to deliver follow-on ships has been reduced consistently and significantly, from 84 months to 66 months, while improving the mission capability and quality of the ships at delivery.

We are also developing the Virginia Payload Module (VPM) for the fifth block of Virginia-class submarines expected to start construction in 2019. This block of submarines will provide a significant upgrade in size and performance. The VPM is an 84-foot hull section that will add four additional payload tubes, more than tripling the strike capacity of these submarines and preserving the United States' critical undersea capabilities.

The group is the prime contractor for design and construction of the Navy's Columbia-class ballistic missile submarine, a 12-boat program that the Navy considers its top priority. These submarines will provide strategic deterrent capabilities for decades and will begin to come on line when the current Ohio-class fleet reaches the end of its service life starting in 2027. The lead ship is slated to start construction in 2021, with delivery to the Navy in 2027. We were awarded a contract in 2017 to finish the design and begin prototype development of the lead boat, an important step to keep the program on schedule. We are investing in our workforce and facilities, including a new automated frame and cylinder facility in Quonset Point, Rhode Island. Steel for the first Columbia-class hull was cut in 2016, and missile tubes are under construction to

support the Common Missile Compartment work under joint development for the U.S. Navy and the U.K. Royal Navy.

We are the lead designer and builder of the Arleigh Burke-class (DDG-51) guided-missile destroyers, managing the design, modernization and lifecycle support. These highly capable, multi-mission ships provide offensive and defensive capabilities and are capable of simultaneously fighting air, surface and subsurface battles. The Navy restarted this program in 2010 after a four-year break in construction and Bath Iron Works delivered the first ship in the restart program to the Navy in 2017. We have construction contracts for seven DDG-51s scheduled for delivery through 2024.

Bath Iron Works is one of the Navy's contractors involved in the development and construction of the Zumwalt-class (DDG-1000) platform, the Navy's next-generation guided-missile destroyer. These ships are equipped with numerous technological enhancements, including a low radar profile, an integrated power system and a software environment that ties together nearly every system on the ship. DDG-1000s will provide independent forward presence and deterrence, support special operations forces, and operate as an integral part of joint and combined expeditionary forces. We delivered the first ship in 2016. The second ship is expected to deliver in 2018 with the final ship scheduled for delivery in 2020.

NASSCO is building Expeditionary Sea Base (ESB) auxiliary support ships, a second variant of the Expeditionary Support Dock (ESD) ships, which serve as floating forward staging bases to improve the Navy and Marine Corps' ability to deliver large-scale equipment and expeditionary forces to areas without adequate port access. ESBs, equipped with a 52,000-square-foot flight deck and accommodations for up to 250 personnel, are capable of supporting a variety of missions, including airborne mine countermeasure, maritime security operations and disaster relief missions. The group has delivered three ships in the program, and construction is underway on the fourth and fifth ships, scheduled for delivery in early 2018 and 2019, respectively.

NASSCO was awarded a design and construction contract in 2016 for the lead ship in the Navy's new class of fleet oilers, the John Lewis class (TAO-205), along with options for five additional ships. Designed to transfer fuel to Navy surface ships operating at sea, the oilers will have the capacity to carry 156,000 barrels of fuel as well as offer a significant dry cargo capacity and aviation capability. Engineering and design work is underway for the first ship, with construction scheduled to begin in late 2018.

Our Marine Systems group provides comprehensive ship and submarine maintenance, modernization and lifecycle support services to extend the service life and maximize the value of these ships. NASSCO conducts full-service maintenance and surface-ship repair operations in four primary locations within the Navy's largest U.S. ports and at customer locations around the globe. 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 support of allied navies, the group offers program management, planning, engineering and design support for submarine and surface-ship construction programs.

In addition to our work for the Navy, the Marine Systems group has extensive experience in all phases of ship construction for commercial customers, designing and building oil and product tankers and container and cargo ships for commercial markets since the 1970s. These ships help our commercial customers satisfy the Jones Act requirement that ships carrying cargo between U.S. ports be built in U.S. shipyards. The group has advanced commercial shipbuilding technology with NASSCO's design and delivery of the world's first liquefied natural gas (LNG)-powered containerships, using green ship technology to dramatically decrease emissions while increasing fuel efficiency. From 2014 to 2017, NASSCO constructed and delivered eight LNG-conversion-ready product tankers for commercial customers. During this time, the company achieved several first-time milestones, including a record throughput of 60,000 tons of steel per year and the delivery

of six ships in 2016. We are currently designing and constructing two new LNG-capable containerships with roll-on, roll-off capability with deliveries scheduled for 2019 and 2020.

To further the group's goals of operating efficiency, innovation and affordability for the customer, we make strategic investments in our business, often in cooperation with the Navy. In addition, the Marine Systems group leverages its design and engineering expertise across its shipyards to improve program execution and generate cost savings. This knowledge sharing enables the group to use resources more efficiently and drive process improvements. We are well-positioned to continue to fulfill the ship-construction and support requirements of our customers.

Revenue for the Marine Systems group was 26% of our consolidated revenue in 2017 and 2016 and 25% in 2015 . Revenue by major products and services was as follows:

Year Ended December 31	2017	2016	2015
Nuclear-powered submarines	\$ 5,175	\$ 5,264	\$ 5,010
Surface combatants	1,043	994	1,081
Auxiliary and commercial ships	564	654	672
Repair and other services	1,222	1,160	1,269
Total Marine Systems	\$ 8,004	\$ 8,072	\$ 8,032

CUSTOMERS

In 2017 , 61% of our consolidated revenue was from the U.S. government, 15% was from U.S. commercial customers, 13% was from non-U.S. commercial customers and the remaining 11% was from non-U.S. government customers.

U.S. GOVERNMENT

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

Year Ended December 31	2017	2016	2015
DoD	\$ 15,498	\$ 15,139	\$ 14,694
Non-DoD	2,847	2,824	2,831
Foreign Military Sales (FMS)*	676	713	453
Total U.S. government	\$ 19,021	\$ 18,676	\$ 17,978
% of total revenue	61%	61%	57%

* 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 businesses 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 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.

In our U.S. government business, fixed-price contracts accounted for 54% in 2017 , 53% in 2016 and 55% in 2015 ; cost-reimbursement contracts accounted for 42% in 2017 , 43% in 2016 and 41% in 2015 ; and time-and-materials contracts accounted for 4% in each of the past three years.

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 \$4.5 billion in 2017 and 2016 and \$5.5 billion in 2015 . This represented 15% of our consolidated revenue in 2017 and 2016 and 17% in 2015 . The majority of this revenue is 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 \$7.5 billion in 2017 , \$7.4 billion in 2016 and \$8.3 billion in 2015 . This represented 24% of our consolidated revenue in 2017 and 2016 and 26% in 2015 .

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

Our non-U.S. commercial business consists primarily of business-jet aircraft exports and worldwide aircraft services. The market for business-jet aircraft and related services outside North America has expanded significantly in recent years. While the installed base of aircraft is concentrated in North America, orders from non-U.S. customers represent a significant segment of our aircraft business with approximately 55% of the Aerospace group's total backlog on December 31, 2017 .

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 large platform and system-integration 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 Combat Systems group competes with a large number of U.S. and non-U.S. businesses. Our Information Systems and Technology group competes with many companies, from large defense companies to small niche competitors with specialized technologies or expertise. Our Marine Systems group has one primary

competitor with which it also partners on the Virginia-class submarine program. The operating cycle of many of our major platform 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 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 group 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 group competes worldwide in the business-jet aircraft services market primarily on the basis of price, quality and timeliness. In our maintenance, repair and FBO businesses, the group competes with several other large companies as well as a number of smaller companies, particularly in the maintenance business. In our completions business, the group competes with several service providers.

BACKLOG

Our total backlog represents the estimated remaining value of work to be performed under firm contracts and includes funded and unfunded portions. For additional discussion of backlog, see Management's Discussion and Analysis of Financial Condition and Results of Operations in Item 7.

Summary backlog information for each of our business groups follows:

December 31	2017			2016			2017 Total Backlog Not Expected to Be Completed in 2018
	Funded	Unfunded	Total	Funded	Unfunded	Total	
Aerospace	\$ 12,319	\$ 147	\$ 12,466	\$ 13,119	\$ 96	\$ 13,215	\$ 6,360
Combat Systems	17,158	458	17,616	17,206	597	17,803	12,303
Information Systems and Technology	6,682	2,192	8,874	6,458	2,007	8,465	3,307
Marine Systems	15,872	8,347	24,219	15,000	7,723	22,723	16,764
Total backlog	\$ 52,031	\$ 11,144	\$ 63,175	\$ 51,783	\$ 10,423	\$ 62,206	\$ 38,734

RESEARCH AND DEVELOPMENT

To foster innovative product development and evolution, we conduct sustained R&D activities as part of our normal business operations. Most of our Aerospace group's R&D activities support Gulfstream's product enhancement and development programs. In our U.S. defense businesses, we conduct customer-sponsored R&D activities under government contracts and company-sponsored R&D activities, investing in technologies and capabilities that provide innovative solutions for our customers. In accordance with government regulations, we recover a portion of company-sponsored R&D expenditures through overhead

charges to U.S. government contracts. For more information on our company-sponsored R&D activities, including our expenditures for the past three years, see Note A to the Consolidated Financial Statements in Item 8.

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.

EMPLOYEES

On December 31, 2017, our subsidiaries had 98,600 employees, approximately one-fifth of whom work under collective agreements with various labor unions and worker representatives. Agreements covering approximately 2% of total employees are due to expire in 2018. Historically, we have renegotiated these labor agreements without any significant disruption to operating activities.

RAW MATERIALS, SUPPLIERS AND SEASONALITY

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.

Our business is not seasonal in nature. The receipt of contract awards, the availability of funding from the customer, the incurrence of contract costs and unit deliveries are all factors that influence the timing of our revenue. In the United States, these factors are influenced by the federal government's budget cycle based on its October-to-September fiscal year.

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 vendor 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. revenue is 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 group is subject to 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 often is 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, generally we seek to mitigate these environmental liabilities through available insurance coverage and by pursuing appropriate cost-recovery actions. In the unlikely event 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 often are 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.generaldynamics.com) as soon as practicable and through the General Dynamics investor relations office at (703) 876-3117. The SEC maintains a website (www.sec.gov) that contains reports, proxy and information statements, and other information. These items also can be read and copied at the SEC's Public Reference Room at 100 F Street, N.E., Washington, DC 20549. Information on the operation of the Public Reference Room is available by calling the SEC at (800) SEC-0330.

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 U.S. and non-U.S. defense and business-aviation operations and the markets they serve, each group shares some common risks, such as the ongoing development of high-technology products and the price, availability and quality of commodities and subsystems.

The U.S. government provides a significant portion of our revenue. In 2017, approximately 60% 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 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 the U.S. defense budget, 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 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 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, which has occurred in recent years. 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, 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 group 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 group'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 group'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 vendor 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 vendors 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 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.

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. business may be sensitive to changes in a foreign government's budgets, leadership and national priorities, which may occur suddenly. 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. business is 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 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. business.

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.

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 group, must meet extensive and time-consuming regulatory requirements that are often outside our control. 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. 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.

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 and when circumstances indicate that an impairment is more likely than not. Such circumstances include a significant adverse change in the business climate for one of our business groups or a decision to dispose of a business group or a significant portion of a business group. We face some uncertainty in our business environment due to a variety of challenges, including changes in defense 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.

Our business could be negatively impacted by cyber security events and other disruptions. We face various cyber security threats, including threats to our information technology (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, vendors, 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 cyber security to mitigate persistent and continuously evolving cyber security threats. We have experienced cyber security 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 cyber security attacks or disruptions resulting from such events.

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, 2017, our business groups had primary operations at the following locations:

- **Aerospace** – Burbank, Lincoln, Long Beach and Van Nuys, California; West Palm Beach, Florida; Brunswick and Savannah, Georgia; Cahokia, Illinois; Bedford and Westfield, Massachusetts; Las Vegas, Nevada; Teterboro, New Jersey; San Juan, Puerto Rico; Dallas and Houston, Texas; Dulles, Virginia; Appleton, Wisconsin; Vienna, Austria; Sorocaba, Brazil; Beijing and Hong Kong, China; Berlin, Dusseldorf and Munich, Germany; Valetta, Malta; Mexicali, Mexico; Moscow, Russia; Singapore; Basel, Geneva and Zurich, Switzerland; Dubai, United Arab Emirates; Luton and Stansted, United Kingdom.
- **Combat Systems** – Anniston, Alabama; East Camden and Hampton, Arkansas; Crawfordsville, St. Petersburg and Tallahassee, Florida; Marion, Illinois; Saco, Maine; Sterling Heights, Michigan; Joplin,

Missouri; Lincoln, Nebraska; Lima, Ohio; Eynon, Red Lion and Scranton, Pennsylvania; Ladson, South Carolina; Garland, Texas; Williston, Vermont; Auburn and Sumner, Washington; Vienna, Austria; La Gardeur, London, St. Augustin and Valleyfield, Canada; Kaiserslautern, Germany; Granada, Madrid, Sevilla and Trubia, Spain; Kreuzlingen, Switzerland; Merthyr Tydfil and Oakdale, United Kingdom.

- **Information Systems and Technology** – Cullman, Alabama; Phoenix and Scottsdale, Arizona; San Jose, California; Pawcatuck, Connecticut; Lynn Haven and Riverview, Florida; Lawrence, Kansas; Annapolis Junction and Towson, Maryland; Dedham, Pittsfield, Taunton and Westwood, Massachusetts; Bloomington, Minnesota; Hattiesburg, Mississippi; Catawba, Conover and Greensboro, North Carolina; Kilgore, Plano and Wortham, Texas; Sandy, Utah; Chesapeake, Chester, Marion and several locations in Fairfax County, Virginia; Calgary and Ottawa, Canada; Tallinn, Estonia; Merthyr Tydfil, Oakdale and St. Leonards, United Kingdom.
- **Marine Systems** – San Diego, California; Groton and New London, Connecticut; Jacksonville, Florida; Bath and Brunswick, Maine; North Kingstown, Rhode Island; Norfolk and Portsmouth, Virginia; Bremerton, Washington; Mexicali, Mexico.

A summary of floor space by business group on December 31, 2017, follows:

(Square feet in millions)	Company-owned Facilities	Leased Facilities	Government-owned Facilities	Total
Aerospace	5.9	7.4	—	13.3
Combat Systems	7.2	3.7	5.5	16.4
Information Systems and Technology	2.8	7.7	0.9	11.4
Marine Systems	8.1	2.8	—	10.9
Total square feet	24.0	21.6	6.4	52.0

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.

EXECUTIVE OFFICERS OF THE COMPANY

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 12, 2018, 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	45
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	58
John P. Casey - Executive Vice President, Marine Systems, since May 2012; Vice President of the company and President of Electric Boat Corporation, October 2003 - May 2012; Vice President of Electric Boat Corporation, October 1996 - October 2003	63
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	58
Jeffrey S. Geiger - Vice President of the company and President of Electric Boat Corporation since November 2013; Vice President of the company and President of Bath Iron Works Corporation, April 2009 - November 2013; Senior Vice President, Operations and Engineering of Bath Iron Works Corporation, March 2008 - March 2009	56
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	43
Robert W. Helm - Senior Vice President, Planning and Development since May 2010; Vice President, Government Relations, of Northrop Grumman Corporation, August 1989 - April 2010	66
S. Daniel Johnson - Executive Vice President, Information Systems and Technology since January 2015; President of General Dynamics Information Technology, April 2008 - September 2017; Vice President of the company, April 2008 - December 2014; Executive Vice President of General Dynamics Information Technology, July 2006 - March 2008	70
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	50
Christopher Marzilli - Vice President of the company and President of General Dynamics Mission Systems since January 2015; 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	58
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	54
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	60
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	59

Gary L. Whited - Vice President of the company and President of General Dynamics Land Systems since March 2013; Senior Vice President of General Dynamics Land Systems, September 2011 - March 2013; Vice President and Chief Financial Officer of General Dynamics Land Systems, June 2006 - September 2011 57

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.

The high and low sales prices of our common stock and the cash dividends declared on our common stock for each quarter of 2016 and 2017 are included in the Supplementary Data contained in Item 8.

On January 28, 2018, there were approximately 11,000 holders of record of our common stock.

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

We did not make any unregistered sales of equity securities in 2017.

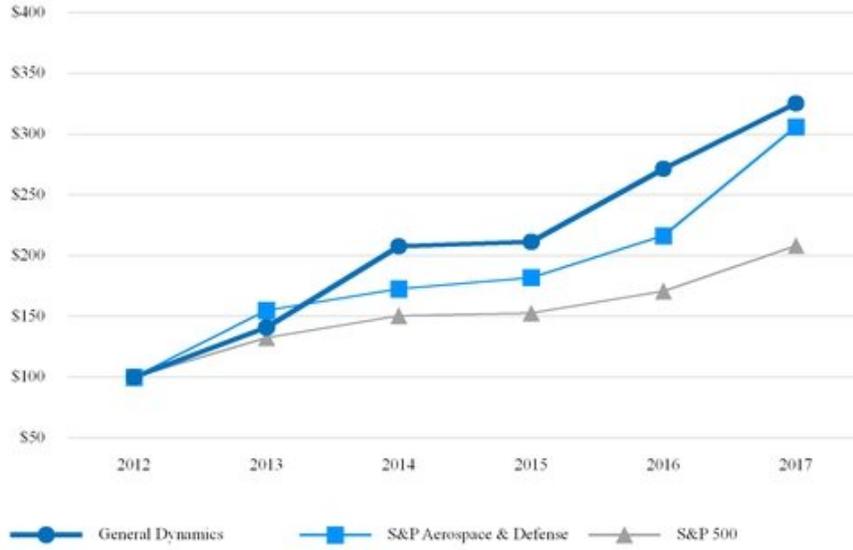
The following table provides information about our fourth-quarter purchases of equity securities that are registered pursuant to Section 12 of the Securities Exchange Act of 1934, as amended:

Period	Total Number of Shares Purchased	Average Price Paid 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
<i>Pursuant to Share Buyback Program</i>				
10/2/17-10/29/17	475,000	\$ 211.58	475,000	9,058,696
10/30/17-11/26/17	669,835	200.78	669,835	8,388,861
11/27/17-12/31/17	803,451	200.53	803,451	7,585,410
	<u>1,948,286</u>	\$ 203.31		

For additional information relating to our purchases of common stock during the past three years, see Financial Condition, Liquidity and Capital Resources - Financing Activities - Share Repurchases contained in Item 7.

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, 2012
(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 and the Consolidated Financial Statements and the Notes thereto.

(Dollars and shares in millions, except per-share and employee amounts)	2017	2016	2015	2014	2013
Summary of Operations					
Revenue	\$ 30,973	\$ 30,561	\$ 31,781	\$ 30,852	\$ 30,930
Operating earnings	4,177	3,734	4,295	3,889	3,689
Operating margin	13.5%	12.2%	13.5%	12.6%	11.9%
Interest, net	(103)	(91)	(83)	(86)	(86)
Provision for income tax, net	1,165	977	1,183	1,129	1,125
Earnings from continuing operations	2,912	2,679	3,036	2,673	2,486
Return on sales (a)	9.4%	8.8%	9.6%	8.7%	8.0%
Discontinued operations, net of tax	—	(107)	—	(140)	(129)
Net earnings	2,912	2,572	3,036	2,533	2,357
Diluted earnings per share:					
Continuing operations	9.56	8.64	9.29	7.83	7.03
Net earnings	9.56	8.29	9.29	7.42	6.67
Cash Flows					
Net cash provided by operating activities	\$ 3,879	\$ 2,198	\$ 2,607	\$ 3,828	\$ 3,159
Net cash (used) provided by investing activities	(791)	(426)	200	(1,102)	(363)
Net cash used by financing activities	(2,399)	(2,169)	(4,367)	(3,675)	(773)
Net cash (used) provided by discontinued operations	(40)	(54)	(43)	36	(18)
Cash dividends declared per common share	3.36	3.04	2.76	2.48	2.24
Financial Position					
Cash and equivalents	\$ 2,983	\$ 2,334	\$ 2,785	\$ 4,388	\$ 5,301
Total assets	35,046	33,172	32,538	34,648	35,158
Short- and long-term debt	3,982	3,888	3,399	3,893	3,888
Shareholders' equity	11,435	10,301	10,440	11,829	14,501
Debt-to-equity (b)	34.8%	37.7%	32.6%	32.9%	26.8%
Book value per share (c)	38.52	34.06	33.36	35.61	41.03
Other Information					
Free cash flow from operations (d)	\$ 3,451	\$ 1,806	\$ 2,038	\$ 3,307	\$ 2,723
Return on invested capital (d)	16.8%	16.3%	18.1%	15.1%	14.1%
Funded backlog	52,031	51,783	53,449	52,929	38,284
Total backlog	63,175	62,206	67,786	72,410	45,885
Shares outstanding	296.9	302.4	313.0	332.2	353.4
Weighted average shares outstanding:					
Basic	299.2	304.7	321.3	335.2	350.7
Diluted	304.6	310.4	326.7	341.3	353.5
Employees	98,600	98,800	99,900	99,500	96,000

Note: All prior-period information has been restated for the adoption of Accounting Standards Update (ASU) 2015-17, Income Taxes (Topic 740): Balance Sheet Classification of Deferred Taxes. Prior-period information for 2016 and 2015 has been restated for the adoption of Accounting Standards Codification (ASC) Topic 606, Revenue from Contracts with Customers, while prior-period information for 2014 and 2013 has not been restated and is, therefore, not comparable to the 2017, 2016 and 2015 information. For further discussion of these two standards, 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) Book value per share is calculated as total equity divided by total outstanding shares as of year end.
(d) 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.

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 business groups, including a discussion of our major products and services, see the Business discussion contained in Item 1. The following discussion should be read in conjunction with our Consolidated Financial Statements included in Item 8.

On February 12, 2018, we announced that we had entered into a definitive agreement to acquire all of the outstanding shares of CSRA for \$40.75 per share in cash. The transaction is valued at \$9.6 billion, including the assumption of \$2.8 billion in CSRA debt. We anticipate financing the transaction through a combination of available cash and new debt financing. We will commence a cash tender offer to purchase all of the outstanding shares of CSRA common stock. The tender offer is subject to customary conditions, including antitrust clearance and the tender of a majority of the outstanding shares of CSRA common stock. We expect to complete the acquisition in the first half of 2018. The forward-looking statements contained in Item 7 do not include any estimated amounts for the CSRA acquisition and any associated impacts.

BUSINESS ENVIRONMENT

With approximately 60% of our revenue from the U.S. government, our financial performance is impacted by U.S. government spending levels, particularly defense spending. Over the past several years, U.S. defense spending has been mandated by the Budget Control Act of 2011 (BCA). The BCA establishes spending caps over a 10-year period through 2021.

On February 9, 2018, the Congress approved increases to the BCA spending caps and a budget for fiscal years (FY) 2018 and 2019. The FY 2018 defense budget totals \$700 billion, which includes \$629 billion in the base budget in compliance with the modified BCA spending caps and \$71 billion for overseas contingency operations, representing an increase of more than 10% over FY 2017 spending levels. The FY 2019 defense budget totals \$716 billion. However, federal agencies and programs do not receive funding at the new levels until the corresponding appropriations bills are approved. The Congress has not yet passed the FY 2018 defense appropriation bill. As a result, we have been operating under a series of continuing resolutions (CRs), which have funded government agencies at FY 2017 spending levels, since the beginning of the government's fiscal year. As of the filing of this Form 10-K on February 12, 2018, the current CR, signed into law on February 9, 2018, funds the government through March 23, 2018. We do not anticipate that these CRs will have a material impact on our results of operations, financial condition or cash flows.

The long-term outlook for our U.S. defense business is influenced by the relevance of our programs to 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 information 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 group, we continue to experience strong demand across our product portfolio. We expect our continued investment in the development of new aircraft products and technologies to support

the Aerospace group's long-term growth. Similarly, we believe the aircraft services business will be a strong source of revenue as the global business-jet fleet grows.

Across our portfolio, we focus on expanding operating earnings and the efficient conversion of earnings into cash. We emphasize effective program execution and the flexibility and agility to respond to changing circumstances in our business environment, and look for opportunities to drive cost reduction across our business.

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 business groups. We account for revenue in accordance with Accounting Standards Codification (ASC) Topic 606, Revenue from Contracts with Customers, which we adopted on January 1, 2017. Prior-period information has been restated for the adoption as further discussed in Note T to the Consolidated Financial Statements in Item 8.

In the Aerospace group, 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 group's completions of other original equipment manufacturers' (OEMs) aircraft and the group'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 of aircraft service activity during the period.

The majority of the Aerospace group's operating costs relate to new aircraft production on firm orders and consist 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 group'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 large-cabin and mid-cabin aircraft deliveries. Additional factors affecting the group'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 group.

In the three defense groups, revenue on long-term government contracts is recognized generally over time as the work progresses, either as the 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 groups 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 that the profitability of that contract may be impacted. Contract mix refers to changes in the volume of higher- versus lower-margin work. Additionally, higher or lower margins can be inherent in the contract type (e.g., fixed-price/cost-reimbursable) or type of work (e.g., development/production).

CONSOLIDATED OVERVIEW

2017 IN REVIEW

- Outstanding operating performance:
 - Revenue increased to \$31 billion with growth in our Aerospace and Combat Systems groups.
 - Operating earnings of \$4.2 billion and operating margin of 13.5% increased 11.9% and 130 basis points, respectively, from 2016 .
 - Return on sales increased 60 basis points from 2016 to 9.4% .
 - Earnings from continuing operations per diluted share of \$9.56 increased 10.6% from 2016 .
- Free cash flow from operations was 119% of earnings from continuing operations.
 - \$2.9 billion of cash deployed for share repurchases, dividends and business acquisitions, consistent with 2016 .
- Return on invested capital (ROIC) of 16.8% , 50 basis points higher than 2016 .
- Robust backlog of \$63.2 billion increased nearly \$1 billion from 2016 , supporting our long-term growth expectations.
 - Net orders for Gulfstream aircraft increased over 20% from 2016.
 - Several significant contract awards received in 2017 in our defense groups.

REVIEW OF 2017 VS. 2016

Year Ended December 31	2017	2016	Variance	
Revenue	\$ 30,973	\$ 30,561	\$ 412	1.3 %
Operating costs and expenses	26,796	26,827	(31)	(0.1)%
Operating earnings	4,177	3,734	443	11.9 %
Operating margin	13.5%	12.2%		

Our consolidated revenue increased in 2017 driven by higher volume across our Combat Systems group and increased revenue from aircraft deliveries and aircraft services in our Aerospace group. These increases

were offset partially by lower C4ISR (command, control, communications, computers, intelligence, surveillance and reconnaissance) solutions revenue in our Information Systems and Technology group.

While revenue increased, operating costs and expenses decreased, resulting in an 11.9% increase in operating earnings and margin growth of 130 basis points. Operating earnings and margin expanded at each of our business groups in 2017 .

REVIEW OF 2016 VS. 2015

Year Ended December 31	2016	2015	Variance	
Revenue	\$ 30,561	\$ 31,781	\$ (1,220)	(3.8)%
Operating costs and expenses	26,827	27,486	(659)	(2.4)%
Operating earnings	3,734	4,295	(561)	(13.1)%
Operating margin	12.2%	13.5%		

Revenue was down in 2016 due to fewer G550 and G450 large-cabin and G280 mid-cabin aircraft deliveries in our Aerospace group. This decrease was offset partially by higher C4ISR solutions volume in our Information Systems and Technology group. Operating costs and expenses decreased at a lower rate than revenue declined in 2016 , resulting in a 130 basis-point decrease in consolidated operating margin compared with 2015. Operating margin decreased in the Aerospace, Combat Systems and Marine Systems groups.

REVIEW OF BUSINESS GROUPS

Year Ended December 31	2017		2016		2015	
	Revenue	Operating Earnings	Revenue	Operating Earnings	Revenue	Operating Earnings
Aerospace	\$ 8,129	\$ 1,593	\$ 7,815	\$ 1,407	\$ 9,177	\$ 1,807
Combat Systems	5,949	937	5,530	831	5,643	886
Information Systems and Technology	8,891	1,011	9,144	941	8,929	895
Marine Systems	8,004	685	8,072	595	8,032	748
Corporate*	—	(49)	—	(40)	—	(41)
Total	\$ 30,973	\$ 4,177	\$ 30,561	\$ 3,734	\$ 31,781	\$ 4,295

* Corporate operating results consist primarily of stock option expense.

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

AEROSPACE

Review of 2017 vs. 2016

Year Ended December 31	2017	2016	Variance	
Revenue	\$ 8,129	\$ 7,815	\$ 314	4.0 %
Operating earnings	1,593	1,407	186	13.2 %
Operating margin	19.6%	18.0%		
Gulfstream aircraft deliveries (in units)	120	121	(1)	(0.8)%

The increase in the Aerospace group's revenue in 2017 consisted of the following:

Aircraft manufacturing, outfitting and completions	\$ 246
Aircraft services	118
Pre-owned aircraft	(50)
Total increase	\$ 314

Aircraft manufacturing, outfitting and completions revenue increased due to additional deliveries of the ultra-large-cabin G650 and mid-cabin G280 aircraft. This growth was offset in part by a decrease in the number of G450 and G550 large-cabin aircraft deliveries as we transition from the production of these models to the new G500 and G600, which are scheduled to enter into service in 2018. We also had three fewer pre-owned aircraft sales in 2017 compared with 2016 (five versus eight). Aircraft services revenue increased, driven by higher demand for maintenance work and the small acquisition of a fixed-base operation (FBO) in 2017.

The increase in the group's operating earnings in 2017 consisted of the following:

Aircraft manufacturing, outfitting and completions	\$ 238
Aircraft services	8
Pre-owned aircraft	11
G&A/other expenses	(71)
Total increase	\$ 186

Aircraft manufacturing, outfitting and completions earnings were up due to favorable cost performance and mix of ultra-large- and large-cabin aircraft deliveries. G&A/other expenses were higher in 2017 due primarily to increased R&D expenses associated with ongoing product-development efforts as the group progresses with the certification of the G500 and G600. Overall, the Aerospace group's operating margin increased 160 basis points to 19.6%.

Review of 2016 vs. 2015

Year Ended December 31	2016	2015	Variance	
Revenue	\$ 7,815	\$ 9,177	\$ (1,362)	(14.8)%
Operating earnings	1,407	1,807	(400)	(22.1)%
Operating margin	18.0%	19.7%		
Gulfstream aircraft deliveries (in units)	121	152	(31)	(20.4)%

The Aerospace group's revenue and operating earnings decreased in 2016 due primarily to fewer G550 and G450 large-cabin and G280 mid-cabin aircraft deliveries. Operating earnings also decreased in 2016 due to a supplier settlement received in 2015 associated with aircraft component design and delivery delays. Partially offsetting these decreases, the group's aircraft services revenue and operating earnings increased driven by higher demand for maintenance work and the acquisition of an aircraft management and charter services provider in 2016. Aircraft services operating earnings were particularly strong in 2016 due to a favorable mix of work and labor efficiencies. Additionally, the group's 2016 operating earnings were impacted favorably by lower G&A/other expenses as a result of cost savings initiatives. Overall, the Aerospace group's operating margin decreased 170 basis points to 18%.

2018 Outlook

We expect the Aerospace group's 2018 revenue to increase between 2 and 3% from 2017. Operating margin is expected to be 18%, down slightly from 2017 as a result of mix shift as the group transitions to the new G500 and G600 aircraft as well as higher pre-owned aircraft sales.

COMBAT SYSTEMS

Review of 2017 vs. 2016

Year Ended December 31	2017	2016	Variance	
Revenue	\$ 5,949	\$ 5,530	\$ 419	7.6%
Operating earnings	937	831	106	12.8%
Operating margin	15.8%	15.0%		

The increase in the Combat Systems group's revenue in 2017 consisted of the following:

U.S. military vehicles	\$ 250
Weapons systems and munitions	144
International military vehicles	25
Total increase	\$ 419

Revenue was up across the Combat Systems group in 2017. Revenue from U.S. military vehicles increased due to higher volume on the Army's Abrams and Stryker programs, including work to produce Abrams M1A2 System Enhancement Package Version 3 (SEPV3) tanks and upgrade Stryker vehicles with an integrated 30-millimeter cannon and additional upgrades. Weapons systems and munitions revenue was up due primarily to increased production of several products, including bombs and Hydra-70 rockets for the U.S. government. Revenue from international military vehicles increased due to the ramp up in production on the British AJAX armoured fighting vehicle program and several international light armored vehicle (LAV) programs, offset largely by lower revenue on a large combat-vehicle contract in the Middle East as the group transitions from engineering to production.

The Combat Systems group's operating margin increased 80 basis points driven by improved operating performance across the group's portfolio. Operating earnings in 2016 included the impact of a loss on the design and development phase of the AJAX program.

Review of 2016 vs. 2015

Year Ended December 31	2016	2015	Variance	
Revenue	\$ 5,530	\$ 5,643	\$ (113)	(2.0)%
Operating earnings	831	886	(55)	(6.2)%
Operating margin	15.0%	15.7%		

The Combat Systems group's revenue decreased in 2016 due primarily to lower international military vehicles revenue driven by decreased volume on the large combat-vehicle contract in the Middle East and the timing of work on the group's contract to upgrade and modernize LAV III combat vehicles for the Canadian Army. These decreases were offset partially by higher volume on the group's contract to deliver Piranha vehicles to the Danish Ministry of Defense.

The Combat Systems group's operating margin decreased 70 basis points in 2016 due primarily to the loss on the design and development phase of the AJAX program. The impact of this loss was offset partially by favorable contract mix and improved operating performance.

2018 Outlook

We expect the Combat Systems group's 2018 revenue to increase between 3 and 4% from 2017. Operating margin is expected to be in the mid- to high-15% range.

INFORMATION SYSTEMS AND TECHNOLOGY

Review of 2017 vs. 2016

Year Ended December 31	2017	2016	Variance	
Revenue	\$ 8,891	\$ 9,144	\$ (253)	(2.8)%
Operating earnings	1,011	941	70	7.4 %
Operating margin	11.4%	10.3%		

The change in the Information Systems and Technology group's revenue in 2017 consisted of the following:

C4ISR solutions	\$	(235)
Information technology (IT) services		(18)
Total decrease	\$	(253)

C4ISR solutions revenue decreased as a result of funding delays across a number of programs, including the Warfighter Information Network-Tactical (WIN-T) mobile communications network and Common Hardware Systems-4 (CHS-4) computing and communications equipment programs, caused by the seven-month FY 2017 CR. Revenue decreased slightly in our IT services business due to delays in procurement activities across a number of programs, particularly in our federal civilian business, offset largely by the acquisition in late 2017 of a provider of mission-critical support services.

Despite the lower revenue, operating earnings increased, and operating margin expanded 110 basis points. The margin growth was driven primarily by strong program performance and favorable contract mix across the portfolio.

Review of 2016 vs. 2015

Year Ended December 31	2016	2015	Variance	
Revenue	\$ 9,144	\$ 8,929	\$ 215	2.4%
Operating earnings	941	895	46	5.1%
Operating margin	10.3%	10.0%		

Revenue in the Information Systems and Technology group was up in 2016 driven by higher volume across the C4ISR solutions business, including the WIN-T program and several programs in Canada and the United Kingdom. Revenue decreased in our IT services business driven by lower volume on our health solutions programs, including less contact-center services work for the Centers for Medicare & Medicaid Services.

The group's operating margin increased 30 basis points in 2016 driven primarily by improved operating performance. Operating earnings in 2015 included a gain of \$23 on the sale of a commercial cyber security product business. Excluding the impact of this gain on the prior-year period, the group's operating margin increased 50 basis points in 2016.

2018 Outlook

We expect the Information Systems and Technology group's 2018 revenue to increase between 5 and 6% from 2017, with operating margin around 11%.

MARINE SYSTEMS

Review of 2017 vs. 2016

Year Ended December 31	2017	2016	Variance	
Revenue	\$ 8,004	\$ 8,072	\$ (68)	(0.8)%
Operating earnings	685	595	90	15.1%
Operating margin	8.6%	7.4%		

The change in the Marine Systems group's revenue in 2017 consisted of the following:

Commercial ship construction	\$	(253)
U.S. Navy ship construction		(66)
U.S. Navy ship engineering, repair and other services		251
Total decrease	\$	(68)

Revenue was down from Jones Act commercial ship construction following the delivery of six ships in 2016 and two ships in 2017. Revenue from U.S. Navy ship construction decreased due to timing on the Virginia-class submarine program offset partially by higher volume on the Navy's Expeditionary Sea Base (ESB) program. Revenue from U.S. Navy ship engineering, repair and other services increased in 2017 due primarily to additional work related to the Columbia-class submarine development program and Virginia-class submarine design enhancements, and a higher volume of submarine repair work.

The Marine Systems group's operating margin increased 120 basis points due primarily to the 2016 impact of cost growth associated with the restart of the Navy's DDG-51 program. The group's operating margin was also affected favorably in 2017 by a decrease in lower-margin commercial ship work.

Review of 2016 vs. 2015

Year Ended December 31	2016	2015	Variance	
Revenue	\$ 8,072	\$ 8,032	\$ 40	0.5 %
Operating earnings	595	748	(153)	(20.5)%
Operating margin	7.4%	9.3%		

Revenue increased in the Marine Systems group in 2016 due primarily to additional development work on the Columbia-class submarine program, offset partially by lower Jones Act commercial ship construction volume.

Operating margin decreased 190 basis points in 2016 due to the DDG-51 program cost growth discussed above. Additionally, operating earnings in 2015 benefited from favorable cost performance on Block III of the Virginia-class submarine program.

2018 Outlook

We expect the Marine Systems group's 2018 revenue to increase between 5 and 6% from 2017. Operating margin is expected to be in the mid- to high-8% range.

CORPORATE

Corporate costs totaled \$49 in 2017, \$40 in 2016 and \$41 in 2015 and consisted primarily of stock option expense. Corporate operating costs in 2018 will be impacted by the adoption of Accounting Standards Update (ASU) 2017-07 on January 1, 2018. ASU 2017-07 requires the non-service cost components of pension and other post-retirement benefit cost (e.g., interest cost) to be reported in other income (expense) in the income statement. In our three defense groups, pension and other post-retirement benefit costs are allocable contract costs. For these groups, we will report the adjustment for the non-service cost components in Corporate operating results. This amount will offset our stock option expense, resulting in expected Corporate operating costs in 2018 of essentially zero. For further discussion of the adoption of ASU 2017-07, see Note A to the Consolidated Financial Statements in Item 8.

OTHER INFORMATION

PRODUCT AND SERVICE REVENUE AND OPERATING COSTS

Review of 2017 vs. 2016

Year Ended December 31	2017	2016	Variance	
Revenue:				
Products	\$ 19,016	\$ 19,010	\$ 6	— %
Services	11,957	11,551	406	3.5 %
Operating Costs:				
Products	\$ 14,799	\$ 15,159	\$ (360)	(2.4)%
Services	9,987	9,746	241	2.5 %

The increase in product revenue in 2017 consisted of the following:

Military vehicle production	\$	261
Aircraft manufacturing, outfitting and completions		246
Ship construction		(310)
C4ISR products		(173)
Other, net		(18)
Total increase	\$	6

Military vehicle production revenue increased due to higher volume on the U.S. Army's Abrams and Stryker programs and the ramp up in production on the AJAX and several international LAV programs. Aircraft manufacturing, outfitting and completions revenue increased due to additional deliveries of the ultra-large-cabin G650 and mid-cabin G280 aircraft. These increases were offset largely by decreased ship construction revenue driven by timing on the Virginia-class submarine program and reduced Jones Act commercial ship construction volume, and decreased revenue from C4ISR products driven by funding delays caused by the extended FY 2017 CR.

While product revenue was steady in 2017, product operating costs decreased due to strong operating performance in our Aerospace and Information Systems and Technology groups and the impact of DDG-51 program cost growth in 2016 in our Marine Systems group.

The increase in service revenue in 2017 consisted of the following:

Ship engineering, repair and other services	\$	243
Aircraft services		118
Other, net		45
Total increase	\$	406

Revenue from ship engineering, repair and other services increased due primarily to additional work related to the Columbia-class submarine development program and Virginia-class submarine design enhancements, and a higher volume of submarine repair work. Aircraft services revenue increased driven by higher demand for maintenance work and the acquisition of an FBO in 2017.

Service operating costs increased in 2017 at a lower rate than revenue due primarily to strong operating performance in our Information Systems and Technology group.

Review of 2016 vs. 2015

Year Ended December 31	2016	2015	Variance	
Revenue:				
Products	\$ 19,010	\$ 20,477	\$ (1,467)	(7.2)%
Services	11,551	11,304	247	2.2 %
Operating Costs:				
Products	\$ 15,159	\$ 15,986	\$ (827)	(5.2)%
Services	9,746	9,563	183	1.9 %

The change in product revenue in 2016 consisted of the following:

Aircraft manufacturing, outfitting and completions	\$	(1,423)
Ship construction		(225)
C4ISR products		206
Other, net		(25)
Total decrease	\$	(1,467)

Product revenue decreased due primarily to fewer G550 and G450 large-cabin and G280 mid-cabin aircraft deliveries, and decreased Jones Act commercial ship construction volume. Revenue from C4ISR products increased due primarily to higher volume on the WIN-T program. Product operating costs decreased at a lower rate than revenue declined in 2016 due to DDG-51 program cost growth in our Marine Systems group. Additionally, 2015 benefited from favorable cost performance on Block III of the Virginia-class submarine program in our Marine Systems group and a supplier settlement received in our Aerospace group.

The increase in service revenue in 2016 consisted of the following:

Ship engineering, repair and other services	\$	264
Other, net		(17)
Total increase	\$	247

Service revenue increased due primarily to additional development work on the Columbia-class submarine program. Service operating costs increased in 2016 consistent with the higher volume described above.

G&A EXPENSES

As a percentage of revenue, G&A expenses were 6.5% in 2017, 6.3% in 2016 and 6.1% in 2015. We expect G&A expenses as a percentage of revenue in 2018 to be generally consistent with 2017.

INTEREST, NET

Net interest expense was \$103 in 2017, \$91 in 2016 and \$83 in 2015. The increase in 2017 was due primarily to a \$500 net increase in long-term debt beginning in the third quarter of 2016. We expect 2018 net interest expense to be approximately \$115. The increase from 2017 is due primarily to slightly higher interest rates on the \$1 billion of fixed-rate notes issued in 2017 compared with the \$900 of fixed-rate notes that matured in 2017. See Note K to the Consolidated Financial Statements in Item 8 for additional information regarding our debt obligations, including interest rates.

OTHER, NET

Net other income was \$3 in 2017, \$13 in 2016 and \$7 in 2015. In 2018, we expect net other expense to be approximately \$60 due primarily to the adoption of ASU 2017-07, which requires the non-service cost components of pension and other post-retirement benefit cost to be reported in other income (expense) in the income statement. For further discussion of the adoption of ASU 2017-07, see Note A to the Consolidated Financial Statements in Item 8.

PROVISION FOR INCOME TAX, NET

Our effective tax rate was 28.6% in 2017 , 26.7% in 2016 and 28% in 2015 . The effective tax rate in 2017 includes a \$119 unfavorable impact, or 290 basis points, resulting from the enactment of the Tax Cuts and Jobs Act on December 22, 2017 (tax reform). The primary impact of the change in tax law was the remeasurement of our U.S. federal deferred tax assets and liabilities at the tax rate expected to apply when the temporary differences are realized/settled (remeasured at a rate of 21% versus 35% for the majority of our deferred tax assets and liabilities). The decrease in the effective tax rate in 2016 was due to increased international activity, as well as excess tax benefits from equity-based compensation recognized as an income tax benefit in accordance with ASU 2016-09. We adopted ASU 2016-09 on a prospective basis beginning in 2016. 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.

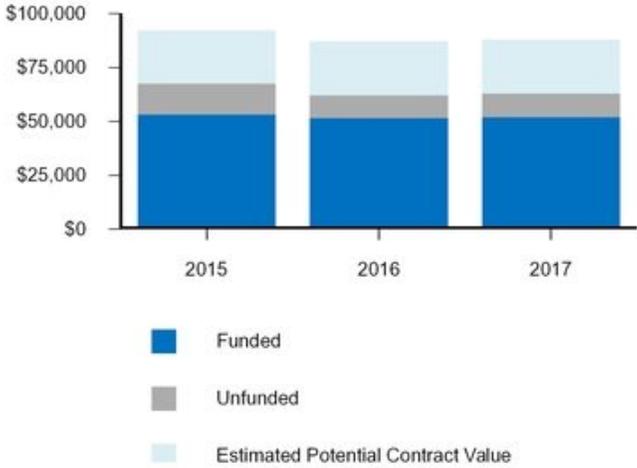
For 2018 , we anticipate a full-year effective tax rate of approximately 19% . The expected decrease from 2017 is due primarily to the reduction of the U.S. corporate statutory tax rate from 35% to 21% beginning on January 1, 2018, and the net impact of other tax reform provisions, notably a lower tax rate on income earned from foreign sales of U.S.-produced goods and services. However, the 2017 tax reform eliminated certain tax benefits under the prior tax law, including the domestic production deduction. Further, our non-U.S. businesses, which previously provided a benefit to our effective tax rate, operate in jurisdictions with statutory tax rates that are now similar to the U.S., and in some cases higher. For these reasons, while we continue to expect an effective tax rate slightly below the statutory rate, the difference between the rates is expected to narrow under the new tax law.

DISCONTINUED OPERATIONS, NET OF TAX

In 2013, we settled litigation with the U.S. Navy related to the terminated A-12 aircraft contract in the company's former tactical military aircraft business. In connection with the settlement, we released some rights to reimbursement of costs on ships under contract at our Bath, Maine, shipyard. As we progressed through the shipbuilding process, we determined that the cost associated with this settlement was greater than anticipated. Therefore, in 2016, we recognized an \$84 loss, net of tax, to adjust the previously-recognized settlement value. In addition, we recognized a \$10 loss, net of tax, in 2016 related to an environmental matter associated with a former operation of the company.

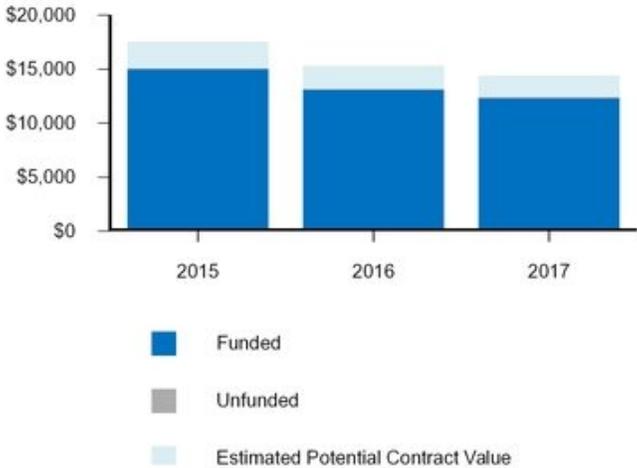
In 2015, we completed the sale of our axle business in the Combat Systems group. In 2016, we recognized a final adjustment of \$13 to the loss on the sale of this business.

BACKLOG AND ESTIMATED POTENTIAL CONTRACT VALUE



Our total backlog, including funded and unfunded portions, was \$63.2 billion at the end of 2017 , up 1.6% from \$62.2 billion at the end of 2016 . Our total backlog is equal to our remaining performance obligations under contracts that meet the criteria in ASC Topic 606 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 \$88 billion on December 31, 2017 .

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. The group ended 2017 with backlog of \$12.5 billion compared with \$13.2 billion at year-end 2016 .

Orders in 2017 reflected solid demand across our product and services portfolio with especially strong orders in the fourth quarter of 2017. The book-to-bill ratio (orders divided by revenue) was one-to-one for Gulfstream aircraft in 2017. We received orders for all models of in-production Gulfstream aircraft, as well as additional orders for the G500 and G600 aircraft.

Beyond total backlog, estimated potential contract value in the Aerospace group was \$2 billion on December 31, 2017, down slightly from \$2.1 billion at year-end 2016. Estimated potential contract value represents primarily options to purchase new aircraft and long-term aircraft services agreements.

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 55% of the group's orders in 2017 and approximately 45% of the group's backlog on December 31, 2017, demonstrating continued strong domestic demand.

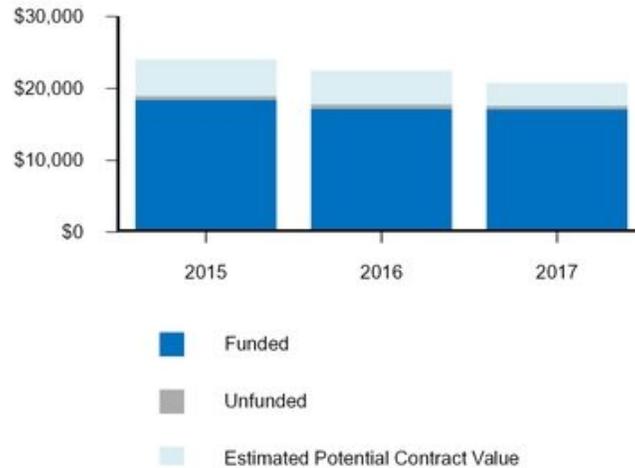
DEFENSE GROUPS

The total backlog in our three defense groups represents the estimated remaining sales value of work to be performed under firm contracts. The funded portion of this 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. We have included in total backlog firm contracts at the amounts that we believe are likely to receive funding, 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 groups includes unexercised options associated with existing firm contracts and work awarded on unfunded indefinite delivery, indefinite quantity (IDIQ) contracts. Contract options in our defense business 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 groups was \$50.7 billion on December 31, 2017, up 3.5% from \$49 billion at the end of 2016, driven by a \$5.1 billion contract awarded by the U.S. Navy to complete the design and prototype development of the Columbia-class submarine. Estimated potential contract value was \$22.8 billion on December 31, 2017, compared with \$22.9 billion at year-end 2016.

COMBAT SYSTEMS



The Combat Systems group's total backlog was \$17.6 billion at the end of 2017, down slightly from \$17.8 billion at year-end 2016. The group's backlog includes the amount of work remaining on two significant multi-year contracts awarded in 2014:

- \$5.9 billion to provide wheeled armored vehicles and logistics support to a Middle Eastern customer through 2024.
- \$4.1 billion from the U.K. Ministry of Defence to produce AJAX armoured fighting vehicles scheduled for delivery to the British Army through 2024 and related in-service support.

The group also has additional international military vehicle production contracts in backlog, notably:

- \$540 for LAVs for several non-U.S. customers, including \$350 for the upgrade and modernization of LAV III combat vehicles for the Canadian Army.
- \$430 to produce over 300 armored personnel carriers for the Danish Defence Acquisition and Logistics Organization.
- \$355 to upgrade Duro tactical vehicles for the Swiss government through 2022.
- \$190 to produce Piranha 3+ vehicles in five variants and provide associated program support for an international customer.

The group received \$1.9 billion of orders for Abrams main battle tank modernization and upgrade programs for the Army and U.S. allies in 2017, ending the year with backlog of \$2.1 billion. For the Army, backlog included \$620 to produce M1A2 SEPv3 tanks, deliver M1A2 SEP components, and provide associated program support, and \$365 to design and develop SEPv4 prototypes with upgraded sensors. For U.S. allies, backlog included \$825 to modernize Abrams main battle tanks for Kuwait and Saudi Arabia. An additional \$870 for Abrams tank programs is included in our estimated potential contract value at year-end.

The U.S. Army's Stryker wheeled combat-vehicle program represented \$510 of the group's backlog on December 31, 2017, with vehicles scheduled for delivery through 2019. The group received \$500 of Stryker orders in 2017, including awards to produce double-V-hull vehicles, upgrade vehicles with an integrated 30-millimeter cannon and provide support and engineering services.

The Combat Systems group’s backlog on December 31, 2017 , also included \$2.6 billion for multiple weapons systems and munitions programs, including \$360 to produce Hydra-70 rockets for the Army.

The group’s estimated potential contract value was \$3.2 billion on December 31, 2017 , compared with \$4.7 billion at year-end 2016 . Estimated potential contract value decreased in 2017 due to a customer-directed restructuring of a combat-vehicle contract in the Middle East.

INFORMATION SYSTEMS AND TECHNOLOGY



Unlike our other defense businesses, the Information Systems and Technology group’s backlog consists of thousands of contracts and is reconstituted each year with new programs and task order awards. The group’s total backlog was \$8.9 billion at the end of 2017 , up 4.8% from \$8.5 billion at year-end 2016 . This amount does not include \$14.9 billion of estimated potential contract value associated with its anticipated share of IDIQ contracts and unexercised options on December 31, 2017 . Funding of IDIQ contracts and options added \$4.6 billion to the group’s backlog in 2017 , over 50% of the group’s orders.

In 2017, the group achieved a book-to-bill ratio of one-to-one or higher for the fourth consecutive year driven by several significant contract awards during the year, including the following:

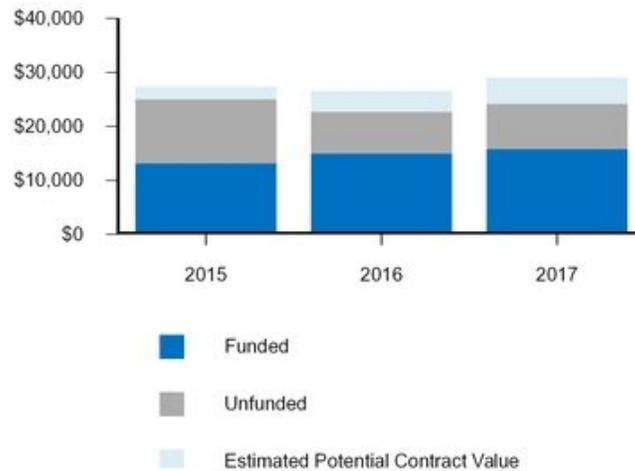
- \$590 from the Centers for Medicare & Medicaid Services for contact center services and cloud hosting support, with \$275 remaining in backlog at year-end 2017 .
- \$415 from the U.K. Ministry of Defence to design and develop the next-generation tactical communication and information system in the initial phase of the U.K.’s Morpheus program.
- \$310 from the U.S. Army for computing and communications equipment under the CHS-4 program. \$340 of estimated potential contract value remains under this IDIQ contract.

The group’s backlog at year-end 2017 also included the following key programs:

- \$815 for the Canadian Maritime Helicopter Project (MHP) to provide integrated mission systems, training and support for Canadian marine helicopters.

- \$445 of support and modernization work for the intelligence community, the DoD and the Department of Homeland Security, including the New Campus East, U.S. Naval Air Warfare Center, Enterprise Transport and St. Elizabeths campus infrastructure programs.
- \$415 for combat and seaframe control systems for U.S. Navy Independence-variant Littoral Combat Ships (LCS).
- \$320 for the WIN-T mobile communications network program. The group received \$305 of orders in 2017 for additional Increment 2 equipment.
- \$300 to provide supply chain management services to the U.S. Department of State.
- \$260 to provide fire control system modifications for ballistic-missile (SSBN) submarines.
- \$200 for long-term support and capability upgrades for the U.K.'s Bowman tactical communication system.

MARINE SYSTEMS



The Marine Systems group's backlog consists of long-term submarine and surface ship construction programs, as well as numerous engineering and repair contracts. The group's book-to-bill ratio exceeded one-to-one in 2017, resulting in backlog growth of 6.6% from \$22.7 billion at year-end 2016 to \$24.2 billion at the end of 2017.

The Virginia-class submarine program was the company's largest program in 2017 and the largest contract in the company's backlog. The group's backlog at year-end 2017 included \$11.2 billion for 13 Virginia-class submarines scheduled for delivery through 2023.

Navy destroyer programs represented \$4 billion of the group's backlog at year-end 2017. We have construction contracts for seven DDG-51 destroyers scheduled for delivery through 2024. Backlog at year-end 2017 also included two ships under the DDG-1000 program scheduled for delivery in 2018 and 2020, respectively.

The Marine Systems group's backlog on December 31, 2017, included \$245 for construction of ESB auxiliary support ships. The group has delivered three ships in the program, and construction is underway on the fourth and fifth ships, scheduled for delivery in early 2018 and 2019, respectively.

In 2016, we were awarded a design and construction contract for the lead ship in the Navy's new class of fleet oilers, the John Lewis class (TAO-205), along with options for five additional ships. At year-end 2017, backlog included \$670 for the program, and estimated potential contract value included \$2.2 billion for the options.

The year-end backlog also included two liquefied natural gas (LNG)-capable Jones Act ships for a commercial customer scheduled for delivery through 2020.

Complementing these ship construction programs, engineering services represented approximately \$6.5 billion of the Marine Systems group's backlog on December 31, 2017. Design and development efforts on the Columbia-class submarine program represented \$5.3 billion of this amount, driven by \$5.1 billion awarded in 2017 to complete the design and prototype development of the Columbia-class submarine. An additional \$1.2 billion is included in our estimated potential contract value at year end, representing materials to be provisioned on the contract.

Year-end backlog for ship and submarine maintenance, repair and other services totaled \$1.1 billion, including \$780 for surface-ship repair operations.

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 over the past three years was deployed to pay dividends, fund capital expenditures and business acquisitions, and repurchase our common stock.

Year Ended December 31	2017	2016	2015
Net cash provided by operating activities	\$ 3,879	\$ 2,198	\$ 2,607
Net cash (used) provided by investing activities	(791)	(426)	200
Net cash used by financing activities	(2,399)	(2,169)	(4,367)
Net cash used by discontinued operations	(40)	(54)	(43)
Net increase (decrease) in cash and equivalents	649	(451)	(1,603)
Cash and equivalents at beginning of year	2,334	2,785	4,388
Cash and equivalents at end of year	2,983	2,334	2,785
Short- and long-term debt	(3,982)	(3,888)	(3,399)
Net debt	\$ (999)	\$ (1,554)	\$ (614)
Debt-to-equity (a)	34.8%	37.7%	32.6%
Debt-to-capital (b)	25.8%	27.4%	24.6%

(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 for each of the past three years, as classified on the Consolidated Statement of Cash Flows in Item 8.

OPERATING ACTIVITIES

We generated cash from operating activities of \$3.9 billion in 2017 , \$2.2 billion in 2016 and \$2.6 billion in 2015 . The primary driver of cash flows was net earnings. Cash flows in 2016 and 2015 were affected negatively by growth in operating working capital in our Combat Systems group due to the utilization of deposits and the timing of billings on a large contract for a Middle Eastern customer, and in our Aerospace group from the build-up of inventory related to the new G500 and G600 aircraft programs and the liquidation of customer deposits associated with aircraft deliveries. In 2017, the growth in operating working capital due to these factors slowed and was offset by lower income tax payments.

INVESTING ACTIVITIES

Cash used for investing activities was \$791 in 2017 compared with cash used for investing activities of \$426 in 2016 and cash provided by investing activities of \$200 in 2015 . 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 all three years was capital expenditures. Capital expenditures were \$428 in 2017 , \$392 in 2016 and \$569 in 2015 . We expect capital expenditures of around 2% of revenue in 2018 .

Business Acquisitions. In 2017 , we acquired four businesses for an aggregate of \$399 . In 2016 , we acquired two businesses for an aggregate of \$58 . We did not acquire any businesses in 2015.

Marketable Securities. In 2015, we received \$500 of proceeds from maturing held-to-maturity securities purchased in 2014. Other net purchases, sales and maturities of marketable securities in all three years were not material.

Other, Net. Investing activities also include proceeds from asset sales. In 2015, we completed the sale of our axle business in the Combat Systems group and a commercial cyber security business in our Information Systems and Technology group.

FINANCING ACTIVITIES

Cash used for financing activities was \$2.4 billion in 2017 , \$2.2 billion in 2016 and \$4.4 billion in 2015 . Our financing activities include repurchases of common stock, payment of dividends and debt repayments. Net cash from financing activities also includes proceeds received from debt issuances and employee stock option exercises.

Share Repurchases. Our board of directors authorizes management's repurchase of outstanding shares of our common stock on the open market from time to time. We repurchased 7.8 million of our outstanding shares for \$1.5 billion in 2017 , 14.2 million shares for \$2 billion in 2016 and 22.8 million shares for \$3.2 billion in 2015 . As a result, we have reduced our shares outstanding by approximately 11% since the end of 2014 . On December 31, 2017 , 7.6 million shares remained authorized by our board of directors for repurchase, approximately 3% of our total shares outstanding.

Dividends. On March 1, 2017, our board of directors declared an increased quarterly dividend of \$0.84 per share, the 20 th consecutive annual increase. Previously, the board had increased the quarterly dividend to \$0.76 per share in March 2016 and \$0.69 per share in March 2015 . Cash dividends paid were \$986 in 2017 , \$911 in 2016 and \$873 in 2015 .

Debt Issuances and Repayments. We issued \$1 billion of fixed-rate notes in the third quarter of 2017, and we used the proceeds to repay \$900 of fixed-rate notes that matured in the fourth quarter of 2017 and for general corporate purposes. In 2016, we repaid \$500 of fixed-rate notes on their maturity date with cash on hand and issued \$1 billion of fixed-rate notes for general corporate purposes. In 2015, we repaid \$500 of fixed-rate notes on their scheduled maturity date with the proceeds from maturing marketable securities.

We have no additional material repayments of long-term debt scheduled until 2021. See Note K to the Consolidated Financial Statements in Item 8 for additional information regarding our debt obligations, including scheduled debt maturities and interest rates.

On December 31, 2017, we had no commercial paper outstanding, but we maintain the ability to access the commercial paper market in the future. We have \$2 billion in committed bank credit facilities for general corporate purposes and working capital needs. These credit facilities include a \$1 billion multi-year facility expiring in July 2018 and a \$1 billion multi-year facility expiring in November 2020. 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.

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 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:

Year Ended December 31	2017	2016	2015	2014*	2013*
Net cash provided by operating activities	\$ 3,879	\$ 2,198	\$ 2,607	\$ 3,828	\$ 3,159
Capital expenditures	(428)	(392)	(569)	(521)	(436)
Free cash flow from operations	\$ 3,451	\$ 1,806	\$ 2,038	\$ 3,307	\$ 2,723
Cash flows as a percentage of earnings from continuing operations:					
Net cash provided by operating activities	133%	82%	86%	143%	127%
Free cash flow from operations	119%	67%	67%	124%	110%

* Prior-period information for 2014 and 2013 has not been restated for ASC Topic 606 and is, therefore, not comparable to the 2017, 2016 and 2015 information.

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. 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	2017	2016	2015	2014*	2013*
Earnings from continuing operations	\$ 2,912	\$ 2,679	\$ 3,036	\$ 2,673	\$ 2,486
After-tax interest expense	76	64	64	67	67
After-tax amortization expense	51	57	75	79	93
Net operating profit after taxes	\$ 3,039	\$ 2,800	\$ 3,175	\$ 2,819	\$ 2,646
Average invested capital	\$ 18,099	\$ 17,168	\$ 17,579	\$ 18,673	\$ 18,741
Return on invested capital	16.8%	16.3%	18.1%	15.1%	14.1%

* Prior-period information for 2014 and 2013 has not been restated for ASC Topic 606 and is, therefore, not comparable to the 2017, 2016 and 2015 information.

ADDITIONAL FINANCIAL INFORMATION

OFF-BALANCE SHEET ARRANGEMENTS

On December 31, 2017, other than operating leases, 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, 2017:

Contractual Obligations	Total Amount Committed	Payments Due by Period			
		Less Than 1 Year	1-3 Years	4-5 Years	More Than 5 Years
Long-term debt (a)	\$ 5,029	\$ 112	\$ 215	\$ 1,696	\$ 3,006
Capital lease obligations	27	2	4	4	17
Operating leases	1,359	258	363	212	526
Purchase obligations (b)	25,168	13,806	8,594	1,983	785
Other long-term liabilities (c)	21,428	4,632	2,677	1,864	12,255
	\$ 53,011	\$ 18,810	\$ 11,853	\$ 5,759	\$ 16,589

(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 \$17.1 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 Q to the Consolidated Financial Statements in Item 8 for information regarding these liabilities and the plan assets available to satisfy them.

Commercial Commitments	Total Amount Committed	Amount of Commitment Expiration by Period			
		Less Than 1 Year	1-3 Years	4-5 Years	More Than 5 Years
Letters of credit and guarantees*	\$ 1,200	\$ 585	\$ 309	\$ 171	\$ 135
Aircraft trade-in options*	161	128	33	—	—
	\$ 1,361	\$ 713	\$ 342	\$ 171	\$ 135

* 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 our 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 and other 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 are 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 could 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. The majority of our revenue is derived from long-term contracts and programs that can span several years. We account for revenue in accordance with ASC Topic 606. The unit of account in ASC Topic 606 is a performance obligation. A contract's transaction price is allocated to each distinct performance obligation 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 groups 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.

The majority of our revenue recognized at a point in time is for the manufacture of business-jet aircraft in our Aerospace group. 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.

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. The aggregate impact of adjustments in contract estimates increased our operating earnings (and diluted earnings per share) by \$323 (\$0.69) in 2017 , \$16 (\$0.03) in 2016 and \$271 (\$0.54) in 2015 . While no adjustment on any one contract was material to our Consolidated Financial Statements in 2017 , 2016 or 2015 , the amount in 2016 was negatively impacted by a loss on the design and development phase of the AJAX program in our Combat Systems group and cost growth associated with the restart of the Navy's DDG-51 program in our Marine Systems group.

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.

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 asset 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 asset over its estimated fair value as determined by discounted projected cash flows.

Goodwill represents the purchase price paid in excess of the fair value of net tangible and intangible assets acquired. We review goodwill for impairment annually or when circumstances indicate that an impairment is more likely than not. 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. The test for goodwill impairment is a two-step process that requires a significant level of

estimation and use of judgment by management, particularly the estimate of the fair value of our reporting units. We estimate the fair value of our reporting units based primarily on the discounted projected cash flows of the underlying operations. This 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 and earnings 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 projected cash flows, we compare the sum of our reporting units' fair value to our market capitalization and calculate an implied control premium (the excess of the market capitalization over the sum of the reporting units' fair values). 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.

We completed the required annual goodwill impairment test as of December 31, 2017. The first step of the goodwill impairment test compares the fair value of each of our reporting units to its carrying value. Our reporting units are consistent with our business groups. The estimated fair value of each of our reporting units was well in excess of its respective carrying value as of December 31, 2017.

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.

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. This assessment requires that we make assumptions about future contract costs, the extent of cost recovery under our contracts and the amount of future contract activity. These estimates are based on our best judgment. 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.

Retirement Plans. Our defined-benefit pension and other post-retirement benefit costs and obligations depend on several assumptions and estimates. The key assumptions include interest rates used to discount estimated future liabilities and projected long-term rates of return on plan assets. 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. Beginning in 2016, we refined the method used to determine the service and interest cost components of our net annual benefit cost. Previously, the cost was determined using a single weighted-average discount rate derived from the yield curve described above. Under the refined method, known as the spot rate approach, we use individual spot rates along the yield curve that correspond with the timing of each service cost and discounted benefit obligation payment. We believe this change provides a more precise measurement of service and interest costs by improving the correlation between projected service cost and discounted benefit obligation cash outflows and

corresponding spot rates on the yield curve. We accounted for this change prospectively as a change in accounting estimate.

We determine the long-term rate of return on assets based on consideration of historical and forward-looking returns and the current and expected asset allocation strategy. In 2017, we decreased the expected long-term rate of return on assets in our primary U.S. government and commercial pension plans by 75 basis points following an assessment of the historical and expected long-term returns of our various asset classes.

These retirement plan assumptions 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, including the impact of hypothetical changes in the discount rate and expected long-term rate of return on plan assets, see Note Q to the Consolidated Financial Statements in Item 8.

As discussed under Other Contract Costs, 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 accounting standards we adopted in 2017 and other new accounting standards that have been issued by the Financial Accounting Standards Board (FASB) but are not effective until after December 31, 2017 .

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 contracts outstanding of \$4.3 billion on December 31, 2017 , and \$6.3 billion on December 31, 2016 .

In 2017, we changed our method for calculating the hypothetical, incremental pretax gains (losses) to measure the net gains (losses) for each currency pair across our portfolio of forward exchange contracts (e.g., Canadian dollar/U.S. dollar), rather than measure the gains (losses) on a contract-by-contract basis. The underlying portfolio and the associated exchange-rate risk have not changed. We restated the 2016 amount under the new method to provide comparability between 2017 and 2016.

A 10% unfavorable exchange rate movement in our portfolio of forward exchange contracts would have resulted in the following hypothetical, incremental pretax gains (losses):

(Dollars in millions)	2017	2016
Recognized	\$ (29)	\$ (19)
Unrecognized	33	18

Foreign Currency. Our exchange-rate sensitivity relates primarily to changes in the Canadian dollar, euro and British pound exchange rates. These losses would be offset by corresponding gains in the remeasurement of the underlying transactions being hedged. We believe these foreign currency forward 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-rate, long-term debt obligations and variable-rate commercial paper. On December 31, 2017 , we had \$4 billion par value of fixed-rate debt and no commercial paper outstanding. 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 debt obligations.

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, 2017 , we held \$3 billion in cash and equivalents, but held no marketable securities other than those held in trust to meet some of our obligations under workers' compensation and non-qualified supplemental executive retirement plans . On December 31, 2017 , these marketable securities totaled \$191 and were reflected at fair value on our Consolidated Balance Sheet in other current and noncurrent assets .

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Prior-period information has been restated for the adoption of Accounting Standards Codification (ASC) Topic 606, Revenue from Contracts with Customers, and Accounting Standards Update (ASU) 2015-07, Income Taxes (Topic 740): Balance Sheet Classification of Deferred Taxes, which we adopted on January 1, 2017, as discussed in Note T.

CONSOLIDATED STATEMENTS OF EARNINGS

(Dollars in millions, except per-share amounts)	Year Ended December 31		
	2017	2016	2015
Revenue:			
Products	\$ 19,016	\$ 19,010	\$ 20,477
Services	11,957	11,551	11,304
	30,973	30,561	31,781
Operating costs and expenses:			
Products	14,799	15,159	15,986
Services	9,987	9,746	9,563
General and administrative (G&A)	2,010	1,922	1,937
	26,796	26,827	27,486
Operating earnings	4,177	3,734	4,295
Interest, net	(103)	(91)	(83)
Other, net	3	13	7
Earnings from continuing operations before income tax	4,077	3,656	4,219
Provision for income tax, net	1,165	977	1,183
Earnings from continuing operations	2,912	2,679	3,036
Discontinued operations, net of tax benefit of \$51 in 2016 and \$7 in 2015	—	(107)	—
Net earnings	\$ 2,912	\$ 2,572	\$ 3,036
Earnings per share			
Basic:			
Continuing operations	\$ 9.73	\$ 8.79	\$ 9.45
Discontinued operations	—	(0.35)	—
Net earnings	\$ 9.73	\$ 8.44	\$ 9.45
Diluted:			
Continuing operations	\$ 9.56	\$ 8.64	\$ 9.29
Discontinued operations	—	(0.35)	—
Net earnings	\$ 9.56	\$ 8.29	\$ 9.29

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

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(Dollars in millions)	Year Ended December 31		
	2017	2016	2015
Net earnings	\$ 2,912	\$ 2,572	\$ 3,036
Gains (losses) on cash flow hedges	341	191	(394)
Unrealized gains (losses) on securities	9	(9)	(2)
Foreign currency translation adjustments	348	(112)	(371)
Change in retirement plans' funded status	20	(192)	500
Other comprehensive income (loss), pretax	718	(122)	(267)
Provision (benefit) for income tax, net	151	(18)	84
Other comprehensive income (loss), net of tax	567	(104)	(351)
Comprehensive income	\$ 3,479	\$ 2,468	\$ 2,685

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

CONSOLIDATED BALANCE SHEETS

(Dollars in millions)	December 31	
	2017	2016
ASSETS		
Current assets:		
Cash and equivalents	\$ 2,983	\$ 2,334
Accounts receivable	3,617	3,399
Unbilled receivables	5,240	4,212
Inventories	5,303	5,118
Other current assets	1,185	1,471
Total current assets	18,328	16,534
Noncurrent assets:		
Property, plant and equipment, net	3,517	3,477
Intangible assets, net	702	678
Goodwill	11,914	11,445
Other assets	585	1,038
Total noncurrent assets	16,718	16,638
Total assets	\$ 35,046	\$ 33,172
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Short-term debt and current portion of long-term debt	\$ 2	\$ 900
Accounts payable	3,207	2,538
Customer advances and deposits	6,992	6,827
Other current liabilities	2,898	3,185
Total current liabilities	13,099	13,450
Noncurrent liabilities:		
Long-term debt	3,980	2,988
Other liabilities	6,532	6,433
Commitments and contingencies (see Note O)		
Total noncurrent liabilities	10,512	9,421
Shareholders' equity:		
Common stock	482	482
Surplus	2,872	2,819
Retained earnings	26,444	24,543
Treasury stock	(15,543)	(14,156)
Accumulated other comprehensive loss	(2,820)	(3,387)
Total shareholders' equity	11,435	10,301
Total liabilities and shareholders' equity	\$ 35,046	\$ 33,172

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

CONSOLIDATED STATEMENTS OF CASH FLOWS

(Dollars in millions)	Year Ended December 31		
	2017	2016	2015
Cash flows from operating activities - continuing operations:			
Net earnings	\$ 2,912	\$ 2,572	\$ 3,036
Adjustments to reconcile net earnings to net cash provided by operating activities:			
Depreciation of property, plant and equipment	362	365	365
Amortization of intangible assets	79	88	116
Equity-based compensation expense	123	95	98
Deferred income tax provision	401	184	213
Discontinued operations, net of tax	—	107	—
(Increase) decrease in assets, net of effects of business acquisitions:			
Accounts receivable	(195)	(122)	632
Unbilled receivables	(987)	(1,048)	61
Inventories	(182)	(377)	141
Other current assets	207	315	80
Increase (decrease) in liabilities, net of effects of business acquisitions:			
Accounts payable	657	567	(89)
Customer advances and deposits	264	(305)	(2,153)
Other, net	238	(243)	107
Net cash provided by operating activities	3,879	2,198	2,607
Cash flows from investing activities:			
Capital expenditures	(428)	(392)	(569)
Business acquisitions, net of cash acquired	(399)	(58)	(5)
Maturities of held-to-maturity securities	—	—	500
Proceeds from sales of assets	50	9	291
Other, net	(14)	15	(17)
Net cash (used) provided by investing activities	(791)	(426)	200
Cash flows from financing activities:			
Purchases of common stock	(1,558)	(1,996)	(3,233)
Dividends paid	(986)	(911)	(873)
Proceeds from fixed-rate notes	985	992	—
Repayment of fixed-rate notes	(900)	(500)	(500)
Proceeds from stock option exercises	163	292	268
Other, net	(103)	(46)	(29)
Net cash used by financing activities	(2,399)	(2,169)	(4,367)
Net cash used by discontinued operations	(40)	(54)	(43)
Net increase (decrease) in cash and equivalents	649	(451)	(1,603)
Cash and equivalents at beginning of year	2,334	2,785	4,388
Cash and equivalents at end of year	\$ 2,983	\$ 2,334	\$ 2,785

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

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

(Dollars in millions)	Common Stock		Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Loss	Total Shareholders' Equity
	Par	Surplus				
December 31, 2014	\$ 482	\$ 2,548	\$ 21,127	\$ (9,396)	\$ (2,932)	\$ 11,829
Cumulative-effect adjustment (See Note T)	—	—	(372)	—	—	(372)
Net earnings	—	—	3,036	—	—	3,036
Cash dividends declared	—	—	(888)	—	—	(888)
Equity-based awards	—	182	—	237	—	419
Shares purchased	—	—	—	(3,233)	—	(3,233)
Other comprehensive loss	—	—	—	—	(351)	(351)
December 31, 2015	482	2,730	22,903	(12,392)	(3,283)	10,440
Net earnings	—	—	2,572	—	—	2,572
Cash dividends declared	—	—	(932)	—	—	(932)
Equity-based awards	—	89	—	267	—	356
Shares purchased	—	—	—	(2,031)	—	(2,031)
Other comprehensive loss	—	—	—	—	(104)	(104)
December 31, 2016	482	2,819	24,543	(14,156)	(3,387)	10,301
Cumulative-effect adjustment (See Note A)	—	—	(3)	—	—	(3)
Net earnings	—	—	2,912	—	—	2,912
Cash dividends declared	—	—	(1,008)	—	—	(1,008)
Equity-based awards	—	53	—	146	—	199
Shares purchased	—	—	—	(1,533)	—	(1,533)
Other comprehensive income	—	—	—	—	567	567
December 31, 2017	\$ 482	\$ 2,872	\$ 26,444	\$ (15,543)	\$ (2,820)	\$ 11,435

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

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

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

A. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Organization. General Dynamics is organized into four business groups: Aerospace, which delivers Gulfstream aircraft and provides services for Gulfstream aircraft and aircraft produced by other original equipment manufacturers (OEMs); Combat Systems, which designs and manufactures combat vehicles, weapons systems and munitions; Information Systems and Technology, which provides C4ISR (command, control, communication, computers, intelligence, surveillance and reconnaissance) solutions and information technology (IT) services; and Marine Systems, which designs, constructs and repairs surface ships and submarines. Our primary customer is the U.S. government. We also do significant business with non-U.S. governments and a diverse base of corporate and individual buyers of business aircraft.

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. 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. Actual results could differ from these estimates.

Discontinued Operations, Net of Tax. In 2013, we settled litigation with the U.S. Navy related to the terminated A-12 aircraft contract in the company's former tactical military aircraft business. In connection with the settlement, we released some rights to reimbursement of costs on ships under contract at our Bath, Maine, shipyard. As we progressed through the shipbuilding process, we determined that the cost associated with this settlement was greater than anticipated. Therefore, in 2016, we recognized an \$84 loss, net of tax, to adjust the previously-recognized settlement value. In addition, we recognized a \$10 loss, net of tax, in 2016 related to an environmental matter associated with a former operation of the company.

In 2015, we completed the sale of our axle business in the Combat Systems group. In 2016, we recognized a final adjustment of \$13 to the loss on the sale of this business.

Research and Development Expenses. Company-sponsored research and development (R&D) expenses, including product development costs, were \$521 in 2017, \$418 in 2016 and \$395 in 2015. The increase in 2017 is due primarily to higher R&D expenses in the Aerospace group associated with ongoing product-development efforts as the group progresses with the certification of its two newest aircraft models, the G500 and G600. 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 group has cost-sharing arrangements with some of its suppliers that enhance the group's internal development capabilities and offset a portion of the financial cost associated with the group's product development efforts. These arrangements explicitly state that supplier contributions are for reimbursements 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	2017	2016	2015
Interest expense	\$ 117	\$ 99	\$ 98
Interest income	(14)	(8)	(15)
Interest expense, net	\$ 103	\$ 91	\$ 83

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 (see Note E). We report our held-to-maturity securities at amortized cost. We report our available-for-sale securities at fair value. Changes in the fair value of available-for-sale securities are recognized as a component of other comprehensive income (loss) in the Consolidated Statement of Comprehensive Income. We had no trading securities on December 31, 2017 or 2016 .

Cash flows in 2016 and 2015 were affected negatively by growth in operating working capital in our Combat Systems group due to the utilization of deposits and the timing of billings on a large contract for a Middle Eastern customer, and in our Aerospace group from the build-up of inventory related to the new G500 and G600 aircraft programs and the liquidation of customer deposits associated with aircraft deliveries. In 2017, the growth in operating working capital due to these factors slowed and was offset by lower income tax payments.

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 expect to recover these costs through ongoing business, including existing backlog and probable follow-on contracts. 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, 2017 and 2016 , were \$448 and \$699 , respectively, and are included in other current assets on the Consolidated Balance Sheet .

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 asset 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 asset over its estimated fair value as determined by discounted projected cash flows.

We review goodwill for impairment annually or when circumstances indicate that an impairment is more likely than not. Goodwill represents the purchase price paid in excess of the fair value of net tangible and intangible assets acquired. The test for goodwill impairment is a two-step process to first identify potential goodwill impairment for each reporting unit and then, if necessary, measure the amount of the impairment loss. Our reporting units are consistent with our business groups in Note R. We completed the required annual goodwill impairment test as of December 31, 2017. The first step of the goodwill impairment test compares the fair value of each of our reporting units to its carrying value. We estimate the fair value of our reporting units based primarily on the discounted projected cash flows of the underlying operations. The estimated fair value of each of our reporting units was well in excess of its respective carrying value as of December 31, 2017. For a summary of our goodwill by reporting unit, see Note C.

Accounting Standards Updates. On January 1, 2017, we retrospectively adopted the following accounting standards issued by the Financial Accounting Standards Board (FASB) that impacted our prior-period financial statements:

- ASC Topic 606, Revenue from Contracts with Customers
- ASU 2015-17, Income Taxes (Topic 740): Balance Sheet Classification of Deferred Taxes

See Note T for further discussion of each of these accounting standards.

We also adopted ASU 2016-16, Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory, on January 1, 2017. We recognized the cumulative effect of this standard as a \$3 decrease to retained earnings on the date of adoption. ASU 2016-16 requires recognition of the current and deferred income tax effects of an intra-entity asset transfer, other than inventory, when the transfer occurs, as opposed to former GAAP, which required companies to defer the income tax effects of intra-entity asset transfers until the asset was sold to an outside party. The income tax effects of intra-entity inventory transfers will continue to be deferred until the inventory is sold.

There are several new accounting standards that have been issued by the FASB but are not effective until after December 31, 2017, including the following:

- ASU 2016-01, Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities. ASU 2016-01 addresses certain aspects of recognition, measurement, presentation and disclosure of financial instruments. Specific to our business, ASU 2016-01 requires equity investments to be measured at fair value with changes in fair value recognized in net income. The ASU eliminates the available-for-sale classification for equity investments that recognized changes in fair value as a component of other comprehensive income. We adopted the standard on a modified retrospective basis with a cumulative-effect adjustment to the Consolidated Balance Sheet on January 1, 2018. The adoption of the ASU did not have a material effect on our results of operations, financial condition or cash flows.
- ASU 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments. ASU 2016-15 is intended to reduce diversity in practice in how certain cash receipts and cash payments are presented and classified in the Consolidated Statement of Cash Flows by providing guidance on eight specific cash flow issues. We adopted the standard retrospectively on January 1, 2018. The adoption of the ASU did not have a material effect on our cash flows.
- ASU 2017-07, Compensation - Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost. ASU 2017-07 requires the service cost component of net benefit cost to be reported separately from the other components of net benefit cost in the income statement. The ASU also allows only the service cost component of net benefit cost to be eligible for capitalization. We adopted the standard retrospectively on January 1, 2018. Our reported

2017 operating earnings, when restated, will increase \$59 due to the reclassification of the non-service cost components of net benefit cost, and our reported other income will decrease by the same amount, with no impact to net earnings. The area of the ASU related to capitalization did not have a material effect on our results of operations, financial condition or cash flows.

- ASU 2016-02, Leases (Topic 842). ASU 2016-02 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. The ASU also requires disclosure of key information about leasing arrangements. ASU 2016-02 is effective on January 1, 2019, using a modified retrospective method of adoption as of January 1, 2017. In January 2018, the FASB issued an exposure draft of the proposed ASU, Leases (Topic 842): Targeted Improvements. The proposed ASU provides an alternative transition method of adoption, permitting the recognition of a cumulative-effect adjustment to retained earnings on the date of adoption.

We intend to adopt the standard on the effective date, but have not yet selected a transition method. We are currently evaluating our population of leased assets in order to assess the impact of the ASU on our lease portfolio, and designing and implementing new processes and controls. Until this effort is completed, we cannot determine the effect of the ASU on our results of operations, financial condition or cash flows.

- ASU 2017-12, Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities. ASU 2017-12 is intended to simplify hedge accounting by better aligning an entity's financial reporting for hedging relationships with its risk management activities. The ASU also simplifies the application of the hedge accounting guidance. ASU 2017-12 is effective on January 1, 2019, with early adoption permitted. For cash flow hedges existing at the adoption date, the standard requires adoption on a modified retrospective basis with a cumulative-effect adjustment to the Consolidated Balance Sheet as of the beginning of the year of adoption. The amendments to presentation guidance and disclosure requirements are required to be adopted prospectively. We have not yet determined the effect of the ASU on our results of operations, financial condition or cash flows, nor have we selected a transition date.

Subsequent Event. On February 12, 2018, we announced that we had entered into a definitive agreement to acquire all of the outstanding shares of CSRA for \$40.75 per share in cash. The transaction is valued at \$9.6 billion, including the assumption of \$2.8 billion in CSRA debt. We anticipate financing the transaction through a combination of available cash and new debt financing. We will commence a cash tender offer to purchase all of the outstanding shares of CSRA common stock. The tender offer is subject to customary conditions, including antitrust clearance and the tender of a majority of the outstanding shares of CSRA common stock. We expect to complete the acquisition in the first half of 2018.

B. REVENUE

The majority of our revenue is derived from long-term contracts and programs that can span several years. We account for revenue in accordance with ASC Topic 606.

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 in ASC Topic 606. A contract's transaction price is allocated to each distinct performance obligation 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 lifecycle (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 71% of our revenue in 2017, 72% in 2016 and 68% in 2015. Substantially all of our revenue in the defense groups 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 29% of our revenue in 2017, 28% in 2016 and 32% in 2015. The majority of our revenue recognized at a point in time is for the manufacture of business-jet aircraft in our Aerospace group. 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, 2017, we had \$63.2 billion of remaining performance obligations, which we also refer to as total backlog. We expect to recognize approximately 40% of our remaining performance obligations as revenue in 2018, an additional 40% by 2020 and the balance thereafter.

Contract Estimates. 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	2017	2016	2015
Revenue	\$ 292	\$ 95	\$ 356
Operating earnings	323	16	271
Diluted earnings per share	\$ 0.69	\$ 0.03	\$ 0.54

While no adjustment on any one contract was material to our Consolidated Financial Statements in 2017, 2016 or 2015, the amount in 2016 was negatively impacted by a loss on the design and development phase of the AJAX program in our Combat Systems group and cost growth associated with the restart of the Navy's DDG-51 program in our Marine Systems group.

Revenue by Category. Our portfolio of products and services consists of almost 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	2017	2016	2015
Aircraft manufacturing, outfitting and completions	\$ 6,320	\$ 6,074	\$ 7,497
Aircraft services	1,743	1,625	1,569
Pre-owned aircraft	66	116	111
Total Aerospace	8,129	7,815	9,177
Wheeled combat and tactical vehicles	2,506	2,444	2,597
Weapons systems, armament and munitions	1,633	1,517	1,508
Tanks and tracked vehicles	1,225	934	805
Engineering and other services	585	635	733
Total Combat Systems	5,949	5,530	5,643
C4ISR solutions	4,481	4,716	4,419
IT services	4,410	4,428	4,510
Total Information Systems and Technology	8,891	9,144	8,929
Nuclear-powered submarines	5,175	5,264	5,010
Surface combatants	1,043	994	1,081
Auxiliary and commercial ships	564	654	672
Repair and other services	1,222	1,160	1,269
Total Marine Systems	8,004	8,072	8,032
Total revenue	\$ 30,973	\$ 30,561	\$ 31,781

Revenue by contract type was as follows:

Year Ended December 31, 2017	Aerospace	Combat Systems	Information Systems and Technology	Marine Systems	Total Revenue
Fixed-price	\$ 7,479	\$ 5,090	\$ 3,943	\$ 4,808	\$ 21,320
Cost-reimbursement	—	823	4,143	3,186	8,152
Time-and-materials	650	36	805	10	1,501
Total revenue	\$ 8,129	\$ 5,949	\$ 8,891	\$ 8,004	\$ 30,973
Year Ended December 31, 2016					
Fixed-price	\$ 7,208	\$ 4,629	\$ 4,251	\$ 4,857	\$ 20,945
Cost-reimbursement	—	865	4,084	3,204	8,153
Time-and-materials	607	36	809	11	1,463
Total revenue	\$ 7,815	\$ 5,530	\$ 9,144	\$ 8,072	\$ 30,561
Year Ended December 31, 2015					
Fixed-price	\$ 8,583	\$ 4,776	\$ 4,066	\$ 5,334	\$ 22,759
Cost-reimbursement	—	838	4,029	2,685	7,552
Time-and-materials	594	29	834	13	1,470
Total revenue	\$ 9,177	\$ 5,643	\$ 8,929	\$ 8,032	\$ 31,781

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, 2017	Aerospace	Combat Systems	Information Systems and Technology	Marine Systems	Total Revenue
U.S. government:					
Department of Defense (DoD)	\$ 189	\$ 2,618	\$ 4,970	\$ 7,721	\$ 15,498
Non-DoD	—	92	2,755	—	2,847
Foreign Military Sales (FMS)	42	374	68	192	676
Total U.S. government	231	3,084	7,793	7,913	19,021
U.S. commercial	3,885	220	322	71	4,498
Non-U.S. government	210	2,580	610	13	3,413
Non-U.S. commercial	3,803	65	166	7	4,041
Total revenue	\$ 8,129	\$ 5,949	\$ 8,891	\$ 8,004	\$ 30,973
Year Ended December 31, 2016					
U.S. government:					
DoD	\$ 231	\$ 2,200	\$ 5,201	\$ 7,507	\$ 15,139
Non-DoD	—	81	2,735	8	2,824
FMS	130	333	48	202	713
Total U.S. government	361	2,614	7,984	7,717	18,676
U.S. commercial	3,501	287	367	329	4,484
Non-U.S. government	496	2,520	621	26	3,663
Non-U.S. commercial	3,457	109	172	—	3,738
Total revenue	\$ 7,815	\$ 5,530	\$ 9,144	\$ 8,072	\$ 30,561
Year Ended December 31, 2015					
U.S. government:					
DoD	\$ 98	\$ 2,225	\$ 5,047	\$ 7,324	\$ 14,694
Non-DoD	—	83	2,736	12	2,831
FMS	6	282	38	127	453
Total U.S. government	104	2,590	7,821	7,463	17,978
U.S. commercial	4,334	242	385	541	5,502
Non-U.S. government	560	2,714	558	28	3,860
Non-U.S. commercial	4,179	97	165	—	4,441
Total revenue	\$ 9,177	\$ 5,643	\$ 8,929	\$ 8,032	\$ 31,781

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 groups, 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 group, 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, 2017, were not materially impacted by any other factors.

Revenue recognized in 2017, 2016 and 2015 that was included in the contract liability balance at the beginning of each year was \$4.3 billion, \$4.2 billion and \$6 billion, respectively. This revenue represented primarily the sale of business-jet aircraft.

C. ACQUISITIONS, GOODWILL AND INTANGIBLE ASSETS

Acquisitions. In 2017, we acquired four businesses for an aggregate of \$399: a fixed-base operation (FBO) in our Aerospace group; and a manufacturer of electronics and communications products, a provider of mission-critical support services and technology solutions, and a manufacturer of signal distribution products in our Information Systems and Technology group. In 2016, we acquired an aircraft management and charter services provider in our Aerospace group and a manufacturer of unmanned underwater vehicles in our Information Systems and Technology group for an aggregate of \$58. We did not acquire any businesses in 2015.

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.

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

	Aerospace	Combat Systems	Information Systems and Technology	Marine Systems	Total Goodwill
December 31, 2015 (a)	\$ 2,542	\$ 2,591	\$ 6,021	\$ 289	\$ 11,443
Acquisitions (b)	29	—	2	—	31
Other (c)	(34)	7	(10)	8	(29)
December 31, 2016 (a)	2,537	2,598	6,013	297	11,445
Acquisitions (b)	28	—	269	—	297
Other (c)	73	79	20	—	172
December 31, 2017 (a)	\$ 2,638	\$ 2,677	\$ 6,302	\$ 297	\$ 11,914

(a) Goodwill in the Information Systems and Technology reporting unit is net of \$2 billion of accumulated impairment losses.

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

(c) Consists primarily of adjustments for foreign currency translation.

Intangible Assets. Intangible assets consisted of the following:

December 31	2017			2016		
	Gross Carrying Amount (a)	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount (a)	Accumulated Amortization	Net Carrying Amount
Contract and program intangible assets (b)	\$ 1,684	\$ (1,320)	\$ 364	\$ 1,633	\$ (1,281)	\$ 352
Trade names and trademarks	465	(160)	305	446	(139)	307
Technology and software	137	(105)	32	121	(102)	19
Other intangible assets	155	(154)	1	154	(154)	—
Total intangible assets	\$ 2,441	\$ (1,739)	\$ 702	\$ 2,354	\$ (1,676)	\$ 678

(a) Change in gross carrying amounts consists primarily of adjustments for 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 2017, 2016 or 2015. The amortization lives (in years) of our intangible assets on December 31, 2017, were as follows:

	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 was \$79 in 2017, \$88 in 2016 and \$116 in 2015. We expect to record annual amortization expense over the next five years as follows:

2018	\$	80
2019		67
2020		62
2021		57
2022		50

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 2017 and 2016 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	2017	2016	2015
Basic weighted average shares outstanding	299,172	304,707	321,313
Dilutive effect of stock options and restricted stock/RSUs*	5,465	5,680	5,339
Diluted weighted average shares outstanding	304,637	310,387	326,652

* 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 1,547 in 2017, 4,201 in 2016 and 1,706 in 2015.

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; and
- 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, 2017 or 2016 .

Our financial instruments include cash and equivalents and other investments, accounts receivable and payable, short- and long-term debt, and derivative financial instruments. The carrying values of cash and equivalents, accounts receivable and payable, and short-term debt 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, 2017 and 2016 , and the basis for determining their fair values:

Financial Assets (Liabilities) (a)	Carrying Value	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)		Significant Other Observable Inputs (Level 2) (b)
			December 31, 2017		
Marketable securities held in trust	\$ 191	\$ 191	\$ 69	\$ 122	
Cash flow hedges	(105)	(105)	—	(105)	
Short- and long-term debt principal	(4,032)	(3,974)	—	(3,974)	
			December 31, 2016		
Marketable securities held in trust	\$ 177	\$ 177	\$ 59	\$ 118	
Cash flow hedges	(477)	(477)	—	(477)	
Short- and long-term debt principal	(3,924)	(3,849)	—	(3,849)	

(a) We had no Level 3 financial instruments on December 31, 2017 or 2016 .

(b) Determined under a market approach using valuation models that incorporate observable inputs such as interest rates, bond yields and quoted prices for similar assets and liabilities.

F. INCOME TAXES

Income Tax Provision. We calculate our provision for federal, state and international income taxes based on current tax law. The Tax Cuts and Jobs Act (tax reform) was enacted on December 22, 2017, and has several key provisions impacting accounting for and reporting of income taxes. The most significant provision reduces the U.S. corporate statutory tax rate from 35% to 21% beginning on January 1, 2018. Although most provisions of tax reform are not effective until 2018, we are required to record the effect of a change in tax law in the period of enactment (2017).

The provision for income taxes and effective tax rate in 2017 included a \$119 unfavorable impact from the change in tax law. The impact is due primarily to the remeasurement of our U.S. federal deferred tax assets and liabilities at the tax rate expected to apply when the temporary differences are realized/settled (remeasured at a rate of 21% versus 35% for the majority of our deferred tax assets and liabilities). The other key provision that requires recognition in the period of enactment is the one-time toll charge resulting from the mandatory deemed repatriation of undistributed foreign taxable income. As it relates to our operations, there was no impact in 2017 from the mandatory deemed repatriation as we had no net undistributed foreign taxable income subject to the toll charge.

We have obtained and analyzed all necessary information to record the effect of the change in tax law, and do not anticipate reporting additional tax effects in the future. However, should the Internal Revenue Service (IRS) issue further guidance or interpretation of relevant aspects of the new tax law, we may adjust these amounts.

The following is a summary of our net provision for income taxes for continuing operations:

Year Ended December 31	2017	2016	2015
Current:			
U.S. federal	\$ 656	\$ 698	\$ 841
State	31	24	31
International	77	71	98
Total current	764	793	970
Deferred:			
U.S. federal	215	140	163
State	7	7	7
International	60	37	43
Adjustment for enacted change in U.S. tax law	119	—	—
Total deferred	401	184	213
Provision for income taxes, net	\$ 1,165	\$ 977	\$ 1,183
Net income tax payments	\$ 617	\$ 959	\$ 871

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	2017	2016	2015
Statutory federal income tax rate	35.0 %	35.0 %	35.0 %
State tax on commercial operations, net of federal benefits	0.6	0.6	0.5
Impact of international operations	(4.5)	(4.0)	(1.3)
Domestic production deduction	(1.5)	(1.5)	(1.6)
Equity-based compensation	(2.6)	(2.3)	—
Domestic tax credits	(0.8)	(0.9)	(1.1)
Contract close-outs	—	—	(2.8)
Impact of enacted change in U.S. tax law	2.9	—	—
Other, net	(0.5)	(0.2)	(0.7)
Effective income tax rate	28.6 %	26.7 %	28.0 %

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

December 31	2017	2016
Retirement benefits	\$ 935	\$ 1,461
Tax loss and credit carryforwards	437	480
Salaries and wages	137	257
Workers' compensation	139	235
Other	335	396
Deferred assets	1,983	2,829
Valuation allowances	(402)	(406)
Net deferred assets	\$ 1,581	\$ 2,423
Intangible assets	\$ (688)	\$ (1,049)
Contract accounting methods	(500)	(188)
Property, plant and equipment	(182)	(320)
Capital Construction Fund qualified ships	(159)	(240)
Other	(221)	(245)
Deferred liabilities	\$ (1,750)	\$ (2,042)
Net deferred tax (liability) asset	\$ (169)	\$ 381

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

December 31	2017	2016
Deferred tax asset	\$ 75	\$ 564
Deferred tax liability	(244)	(183)
Net deferred tax (liability) asset	\$ (169)	\$ 381

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 retirement benefits deferred tax balance includes a deferred tax asset of \$1 billion on December 31, 2017, and \$1.7 billion on December 31, 2016, related to the amounts recorded in accumulated other comprehensive loss (AOCL) to recognize the funded status of our retirement plans. See Notes M and Q 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 \$692 and \$388 on December 31, 2017 and 2016, respectively.

On December 31, 2017, we had net operating loss carryforwards of \$1 billion that begin to expire in 2019, a capital loss carryforward of \$234 that expires in 2020 and tax credit carryforwards of \$123 that begin to expire in 2018.

Tax Uncertainties. 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. The total amount of these tax liabilities on December 31, 2017, was not material to our results of operations, financial condition or cash flows.

We participate in the 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 2016. We do not expect the resolution of tax matters for open years to have a material impact on our results of operations, financial condition, cash flows or effective tax rate.

Based on all known facts and circumstances and current tax law, we believe the total amount of any unrecognized tax benefits on December 31, 2017, was not material to our results of operations, financial condition or cash flows, and if recognized, would not have a material impact on our effective tax rate. 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	2017	2016
Non-U.S. government	\$ 2,228	\$ 2,147
U.S. government	971	793
Commercial	418	459
Total accounts receivable	\$ 3,617	\$ 3,399

Receivables from non-U.S. government customers included amounts related to long-term production programs for the Spanish Ministry of Defence of \$2.1 billion on December 31, 2017. 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 amount for these programs on December 31, 2017, was an advance payment of \$284. With respect to our other receivables, we expect to collect substantially all of the year-end 2017 balance during 2018.

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 or upon achievement of contractual milestones. Unbilled receivables consisted of the following:

December 31	2017	2016
Unbilled revenue	\$ 21,845	\$ 25,543
Advances and progress billings	(16,605)	(21,331)
Net unbilled receivables	\$ 5,240	\$ 4,212

The increase in net unbilled receivables was due primarily to the timing of billings on large international vehicle contracts in our Combat Systems group.

G&A costs in unbilled revenue on December 31, 2017 and 2016 , were \$282 and \$234 , 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.

We expect to bill all but approximately 20% of our year-end 2017 net unbilled receivables balance during 2018 . The amount not expected to be billed in 2018 results primarily from the agreed-upon contractual billing terms.

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	2017	2016
Work in process	\$ 3,872	\$ 3,643
Raw materials	1,357	1,429
Finished goods	51	24
Pre-owned aircraft	23	22
Total inventories	\$ 5,303	\$ 5,118

J. PROPERTY, PLANT AND EQUIPMENT, NET

Property, plant and equipment (PP&E) is carried at historical cost, net of accumulated depreciation. The major classes of PP&E were as follows:

December 31	2017	2016
Machinery and equipment	\$ 4,736	\$ 4,582
Buildings and improvements	2,837	2,745
Land and improvements	357	333
Construction in process	307	269
Total PP&E	8,237	7,929
Accumulated depreciation	(4,720)	(4,452)
PP&E, net	\$ 3,517	\$ 3,477

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		2017	2016
Fixed-rate notes due:	Interest rate:		
November 2017	1.000%	\$ —	\$ 900
July 2021	3.875%	500	500
November 2022	2.250%	1,000	1,000
August 2023	1.875%	500	500
November 2024	2.375%	500	—
August 2026	2.125%	500	500
November 2027	2.625%	500	—
November 2042	3.600%	500	500
Other	Various	32	24
Total debt principal		4,032	3,924
Less unamortized debt issuance costs and discounts		50	36
Total debt		3,982	3,888
Less current portion		2	900
Long-term debt		\$ 3,980	\$ 2,988

In the third quarter of 2017 , we issued \$1 billion of fixed-rate notes. We used the proceeds to repay \$900 of fixed-rate notes that matured in the fourth quarter of 2017 and for general corporate purposes. Interest payments associated with our debt were \$93 in 2017 , \$83 in 2016 and \$90 in 2015 .

Our fixed-rate notes are fully and unconditionally guaranteed by several of our 100 %-owned subsidiaries. See Note S for condensed consolidating financial statements. We have the option to redeem the notes prior to their maturity in whole or in part for the principal plus any accrued but unpaid interest and applicable make-whole amounts.

The aggregate amounts of scheduled principal maturities of our debt for the next five years are as follows:

Year Ended December 31		
	2018	\$ 2
	2019	3
	2020	3
	2021	503
	2022	1,003
Thereafter		2,518
Total debt principal		\$ 4,032

On December 31, 2017, we had no commercial paper outstanding, but we maintain the ability to access the commercial paper market in the future. We have \$2 billion in committed bank credit facilities for general corporate purposes and working capital needs. These credit facilities include a \$1 billion multi-year facility expiring in July 2018 and a \$1 billion multi-year facility expiring in November 2020. We may renew or replace these credit facilities in whole or in part at or prior to their expiration dates. Our bank credit facilities are guaranteed by several of our 100 %-owned subsidiaries. We also have an effective shelf registration on file with the SEC 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 on December 31, 2017.

L. OTHER LIABILITIES

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

December 31	2017	2016
Salaries and wages	\$ 786	\$ 693
Fair value of cash flow hedges	180	521
Workers' compensation	320	337
Retirement benefits	295	303
Other (a)	1,317	1,331
Total other current liabilities	\$ 2,898	\$ 3,185
Retirement benefits	\$ 4,408	\$ 4,393
Customer deposits on commercial contracts	814	719
Deferred income taxes	244	183
Other (b)	1,066	1,138
Total other liabilities	\$ 6,532	\$ 6,433

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

(b) Consists primarily of warranty reserves, workers' compensation 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, 2017, we had 481,880,634 shares of common stock issued and 296,895,608 shares of common stock outstanding, including unvested restricted stock of 817,484 shares. On December 31, 2016, we had 481,880,634 shares of common stock issued and 302,418,528 shares of common stock outstanding. No shares of our preferred stock were outstanding on either date. The only changes in our shares outstanding during 2017 and 2016 resulted from shares repurchased in the open market and share activity under our equity compensation plans. See Note P for additional details.

Share Repurchases. Our board of directors authorizes management's repurchase of outstanding shares of our common stock on the open market from time to time. On March 1, 2017, the board of directors authorized management to repurchase up to 10 million additional shares of the company's outstanding stock. In 2017, we repurchased 7.8 million of our outstanding shares for \$1.5 billion. On December 31, 2017, 7.6 million shares remained authorized by our board of directors for repurchase, approximately 3% of our total shares outstanding. We repurchased 14.2 million shares for \$2 billion in 2016 and 22.8 million shares for \$3.2 billion in 2015.

Dividends per Share. Dividends declared per share were \$3.36 in 2017, \$3.04 in 2016 and \$2.76 in 2015. Cash dividends paid were \$986 in 2017, \$911 in 2016 and \$873 in 2015.

Accumulated Other Comprehensive Loss. The changes, pretax and net of tax, in each component of accumulated other comprehensive loss (AOCL) consisted of the following:

	Losses on Cash Flow Hedges	Unrealized Gains on Securities	Foreign Currency Translation Adjustments	Changes in Retirement Plans' Funded Status	AOCL
December 31, 2014	\$ (173)	\$ 22	\$ 541	\$ (3,322)	\$ (2,932)
Other comprehensive loss, pretax	(394)	(2)	(371)	500	(267)
Provision for income tax, net	(80)	—	(11)	175	84
Other comprehensive loss, net of tax	(314)	(2)	(360)	325	(351)
December 31, 2015	(487)	20	181	(2,997)	(3,283)
Other comprehensive loss, pretax	191	(9)	(112)	(192)	(122)
Benefit for income tax, net	49	(3)	—	(64)	(18)
Other comprehensive loss, net of tax	142	(6)	(112)	(128)	(104)
December 31, 2016	(345)	14	69	(3,125)	(3,387)
Other comprehensive income, pretax	341	9	348	20	718
Provision for income tax, net	90	4	15	42	151
Other comprehensive income, net of tax	251	5	333	(22)	567
December 31, 2017	\$ (94)	\$ 19	\$ 402	\$ (3,147)	\$ (2,820)

Amounts reclassified out of AOCL related primarily to changes in retirement plans' funded status and consisted of pretax recognized net actuarial losses of \$358 in 2017, \$340 in 2016 and \$423 in 2015. This was offset partially by pretax amortization of prior service credit of \$69 in 2017, \$74 in 2016 and \$72 in 2015. These AOCL components are included in our net periodic pension and other post-retirement benefit cost. See Note Q for additional details.

N. DERIVATIVE 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 had \$4.3 billion in notional forward exchange contracts outstanding on December 31, 2017, and \$6.3 billion on December 31, 2016. We do not use derivative financial instruments for trading or speculative purposes. We recognize derivative financial instruments on the Consolidated Balance Sheet at fair value. See Note E for additional details.

Foreign Currency Risk and Hedging Activities. 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 three-year average maturity of these instruments generally matches the duration of the activities that are at risk.

We record changes in the fair value of derivative financial instruments in operating costs and expenses in the Consolidated Statement of Earnings or in other comprehensive loss (OCL) within the Consolidated Statement of Comprehensive Income depending on whether the derivative is designated and qualifies for hedge accounting. Gains and losses related to derivative financial instruments that qualify as cash flow hedges are deferred in OCL until the underlying transaction is reflected in earnings. We adjust derivative financial instruments not designated as cash flow hedges to market value each period and record the gain or loss in the Consolidated Statement of Earnings. The gains and losses on these instruments generally offset losses and gains on the assets, liabilities and other transactions being hedged. Gains and losses resulting from hedge ineffectiveness are recognized in the Consolidated Statement of Earnings for all derivative financial instruments, regardless of designation.

Net gains and losses on derivative financial instruments recognized in earnings, including gains and losses related to hedge ineffectiveness, were not material to our results of operations in any of the past three years. Net gains and losses reclassified to earnings from OCL were 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 in 2018 to be material.

We had no material derivative financial instruments designated as fair value or net investment hedges on December 31, 2017 or 2016.

Interest Rate Risk. Our financial instruments subject to interest rate risk include fixed-rate long-term debt obligations and variable-rate commercial paper. However, the risk associated with these 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, 2017, we held \$3 billion in cash and equivalents, but held no marketable securities other than those held in trust to meet some

of our obligations under workers' compensation and non-qualified supplemental executive retirement plans . On December 31, 2017 , these marketable securities totaled \$191 and were reflected at fair value on our Consolidated Balance Sheet in other current and noncurrent assets .

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 end-of-period exchange rates, and statements of earnings at average exchange rates for each period. The resulting foreign currency translation adjustments are a component of OCL.

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 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 each 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 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 has been engaged in discussions with the U.S. government. 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.

Minimum Lease Payments

Total expense under operating leases was \$309 in 2017 , \$307 in 2016 and \$283 in 2015 . Operating leases are primarily for facilities and equipment. Future minimum lease payments are as follows:

Year Ended December 31

	2018 \$	258
	2019	215
	2020	148
	2021	118
	2022	94
Thereafter		526
Total minimum lease payments	\$	1,359

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 \$1.2 billion on December 31, 2017 . 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 funded contract backlog, our Aerospace group 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. 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.

Labor Agreements. Approximately one-fifth of the employees of our subsidiaries work under collectively-bargained terms and conditions, including 47 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 2018, we expect to negotiate the terms of 15 agreements covering approximately 2,000 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 generally based 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	2017	2016	2015
Beginning balance	\$ 474	\$ 434	\$ 428
Warranty expense	146	155	162
Payments	(123)	(100)	(120)
Adjustments*	(30)	(15)	(36)
Ending balance	\$ 467	\$ 474	\$ 434

* Includes a cumulative-effect adjustment on January 1, 2015, which represents the impact of adopting ASC Topic 606.

P. 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, 2017, in addition to the shares reserved for issuance upon the exercise of outstanding stock options, approximately 6 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	2017	2016	2015
Stock options	\$ 34	\$ 25	\$ 32
Restricted stock/RSUs	46	36	32
Total equity-based compensation expense, net of tax	\$ 80	\$ 61	\$ 64

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 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	2017	2016	2015
Expected volatility	17.3-19.4%	19.1-20.0%	20.1-24.1%
Weighted average expected volatility	19.4%	20.0%	24.0%
Expected term (in months)	68	70	74
Risk-free interest rate	2.0-2.2%	1.5-1.6%	1.7-1.9%
Expected dividend yield	1.8%	2.0%	2.0%

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 \$33.09 in 2017, \$22.11 in 2016 and \$27.54 in 2015. Stock option expense reduced pretax operating earnings (and on a diluted per-share basis) by \$53 (\$0.11) in 2017, \$39 (\$0.08) in 2016 and \$49 (\$0.10) in 2015. Compensation expense for stock options is reported as a Corporate expense for segment reporting purposes (see Note R). On December 31, 2017, we had \$71 of unrecognized compensation cost related to stock options, which is expected to be recognized over a weighted average period of 1.8 years.

A summary of stock option activity during 2017 follows:

In Shares and Dollars	Shares Under Option	Weighted Average Exercise Price Per Share
Outstanding on December 31, 2016	10,934,621	\$ 108.23
Granted	1,870,260	191.84
Exercised	(2,020,882)	88.75
Forfeited/canceled	(163,610)	145.72
Outstanding on December 31, 2017	10,620,389	\$ 126.08
Vested and expected to vest on December 31, 2017	10,470,666	\$ 125.45
Exercisable on December 31, 2017	5,286,882	\$ 96.52

Summary information with respect to our stock options' intrinsic value and remaining contractual term on December 31, 2017 , follows:

	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding	5.7	\$ 822
Vested and expected to vest	5.6	817
Exercisable	3.1	565

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 \$215 in 2017 , \$263 in 2016 and \$238 in 2015 .

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 New York Stock Exchange 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 a performance measure derived from a non-GAAP-based management metric, return on invested capital (ROIC). Depending on the company's performance with respect to this metric, 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 \$70 (\$0.15) in 2017 , \$56 (\$0.12) in 2016 and \$49 (\$0.10) in 2015 . Compensation expense for restricted stock and RSUs is reported as an operating expense of our business groups for segment reporting purposes (see Note R). On December 31,

2017, we had \$47 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 2017 follows:

In Shares and Dollars	Shares/ Share-Equivalent Units	Weighted Average Grant-Date Fair Value Per Share
Nonvested at December 31, 2016	2,806,128	\$ 101.54
Granted	341,558	191.83
Vested	(1,139,028)	67.80
Forfeited	(25,485)	142.37
Nonvested at December 31, 2017	1,983,173	\$ 135.38

The total fair value of vesting shares was \$200 in 2017, \$68 in 2016 and \$76 in 2015.

Q. RETIREMENT PLANS

We provide defined-contribution benefits to eligible employees, as well as some remaining defined-benefit pension and other post-retirement benefits. Substantially all of our plans use a December 31 measurement date consistent with our fiscal year.

Retirement Plan Summary Information

Defined-contribution Benefits. We provide eligible employees the opportunity to participate in defined-contribution savings 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 \$274 in 2017, \$261 in 2016 and \$240 in 2015. The defined-contribution plans held approximately 21 million and 22 million shares of our common stock, representing approximately 7% of our outstanding shares on December 31, 2017 and 2016, respectively.

Pension Benefits. We have seven noncontributory and five contributory trustee, qualified defined-benefit pension plans covering eligible government business employees, and two noncontributory and four contributory plans covering eligible commercial business employees, including some employees of our international operations. The primary factors affecting the benefits earned by participants in our pension plans are employees' years of service and compensation levels. Our primary government pension plans, which comprise the majority of our unfunded obligation, were closed to new salaried participants on January 1, 2007. Additionally, we made changes to these plans for certain participants effective in 2014 that limit or cease the benefits that accrue for future service. We made similar changes to our primary commercial pension plan in 2015.

We also sponsor one funded and several unfunded non-qualified supplemental executive retirement plans, which provide participants with additional benefits, including excess benefits over limits imposed on qualified plans by federal tax law.

Other Post-retirement 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 and Benefit Payments

It is our policy to fund our defined-benefit retirement 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 \$199 to our pension plans in 2017 . In 2018 , our required contributions are approximately \$315 .

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 plans were not material in 2017 and are not expected to be material in 2018 .

We expect the following benefits to be paid from our retirement plans over the next 10 years:

	Pension Benefits	Other Post-retirement Benefits
2018	\$ 626	\$ 64
2019	648	64
2020	676	63
2021	704	63
2022	730	62
2023-2027	4,013	292

Government Contract Considerations

Our contractual arrangements with the U.S. government provide for the recovery of contributions to our pension and other post-retirement benefit plans covering employees working in our defense business groups. For non-funded plans, our government contracts allow us to recover claims paid. Following payment, these recoverable amounts are allocated to contracts and billed to the customer in accordance with the Cost Accounting Standards (CAS) and specific contractual terms. For some of these plans, the cumulative pension and other post-retirement benefit cost exceeds the amount currently allocable to contracts. To the extent recovery of the cost is considered 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. For other plans, the amount allocated to contracts and included in revenue has exceeded the plans' cumulative benefit cost. We have deferred recognition of these excess earnings on the Consolidated Balance Sheet.

Defined-benefit Retirement Plan Summary Financial Information

Estimating retirement plan assets, liabilities and costs requires the extensive use of actuarial assumptions. These include the long-term rate of return on plan assets, the interest rates used to discount projected benefit payments, healthcare cost trend rates and future salary increases. Given the long-term nature of the assumptions being made, actual outcomes can and often do differ from these estimates.

Our annual benefit cost consists of three primary elements: the cost of benefits earned by employees for services rendered during the year, an interest charge on our plan liabilities and an assumed return on our plan assets for the year. The annual cost also includes gains and losses resulting from changes in actuarial

assumptions, differences between the actual and assumed long-term rate of return on assets, and gains and losses resulting from changes we make to plan benefit terms.

We recognize an asset or liability on the Consolidated Balance Sheet equal to the funded status of each of our defined-benefit retirement plans. The funded status is the difference between the fair value of the plan's assets and its benefit obligation. Changes in plan assets and liabilities due to differences between actuarial assumptions and the actual results of the plan are deferred in OCL rather than charged to earnings. These differences are then amortized over future years as a component of our annual benefit cost. We amortize actuarial differences under qualified plans on a straight-line basis over the average remaining service period of eligible employees. If all of a plan's participants are inactive, we amortize these differences over the average remaining life expectancy of the plan participants. We recognize the difference between the actual and expected return on plan assets for qualified plans over five years. The deferral of these differences reduces the volatility of our annual benefit cost that can result either from year-to-year changes in the assumptions or from actual results that are not necessarily representative of the long-term financial position of these plans. We recognize differences under nonqualified plans immediately.

Net annual defined-benefit pension and other post-retirement benefit cost (credit) consisted of the following:

Year Ended December 31	Pension Benefits		
	2017	2016	2015
Service cost	\$ 168	\$ 173	\$ 210
Interest cost	453	456	529
Expected return on plan assets	(679)	(713)	(693)
Recognized net actuarial loss	362	343	417
Amortization of prior service credit	(66)	(68)	(67)
Net annual benefit cost	\$ 238	\$ 191	\$ 396

Year Ended December 31	Other Post-retirement Benefits		
	2017	2016	2015
Service cost	\$ 9	\$ 10	\$ 11
Interest cost	30	34	44
Expected return on plan assets	(34)	(33)	(32)
Recognized net actuarial (gain) loss	(4)	(3)	6
Amortization of prior service credit	(3)	(6)	(5)
Net annual benefit (credit) cost	\$ (2)	\$ 2	\$ 24

The following is a reconciliation of the benefit obligations and plan/trust assets, and the resulting funded status, of our defined-benefit retirement plans:

Year Ended December 31	Pension Benefits		Other Post-retirement Benefits	
	2017	2016	2017	2016
Change in Benefit Obligation				
Benefit obligation at beginning of year	\$ (13,022)	\$ (12,554)	\$ (1,005)	\$ (991)
Service cost	(168)	(173)	(9)	(10)
Interest cost	(453)	(456)	(30)	(34)
Amendments	1	—	—	(13)
Actuarial loss	(1,098)	(383)	(42)	(18)
Settlement/curtailment/other	(58)	(4)	27	(3)
Benefits paid	586	548	63	64
Benefit obligation at end of year	\$ (14,212)	\$ (13,022)	\$ (996)	\$ (1,005)
Change in Plan/Trust Assets				
Fair value of assets at beginning of year	\$ 8,980	\$ 8,608	\$ 499	\$ 527
Actual return on plan assets	1,469	694	82	9
Employer contributions	199	208	3	5
Settlement/curtailment/other	56	5	—	—
Benefits paid	(574)	(535)	(43)	(42)
Fair value of assets at end of year	\$ 10,130	\$ 8,980	\$ 541	\$ 499
Funded status at end of year	\$ (4,082)	\$ (4,042)	\$ (455)	\$ (506)

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

December 31	Pension Benefits		Other Post-retirement Benefits	
	2017	2016	2017	2016
Noncurrent assets	\$ 133	\$ 138	\$ 33	\$ 10
Current liabilities	(145)	(132)	(150)	(171)
Noncurrent liabilities	(4,070)	(4,048)	(338)	(345)
Net liability recognized	\$ (4,082)	\$ (4,042)	\$ (455)	\$ (506)

Amounts deferred in AOCL consisted of the following:

December 31	Pension Benefits		Other Post-retirement Benefits	
	2017	2016	2017	2016
Net actuarial loss (gain)	\$ 4,899	\$ 4,947	\$ (5)	\$ 36
Prior service credit	(124)	(190)	(3)	(6)
Total amount recognized in AOCL, pretax	\$ 4,775	\$ 4,757	\$ (8)	\$ 30

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

Year Ended December 31	Pension Benefits		Other Post-retirement Benefits	
	2017	2016	2017	2016
Net actuarial loss (gain)	\$ 308	\$ 402	\$ (6)	\$ 42
Prior service cost	(1)	—	—	13
Amortization of:				
Net actuarial (loss) gain from prior years	(362)	(343)	4	3
Prior service credit	66	68	3	6
Other*	7	1	(39)	—
Change in AOCL, pretax	\$ 18	\$ 128	\$ (38)	\$ 64

* Includes foreign exchange translation, curtailment and other adjustments.

The following table represents amounts deferred in AOCL on the Consolidated Balance Sheet on December 31, 2017, that we expect to recognize in our retirement benefit cost in 2018:

	Pension Benefits	Other Post-retirement Benefits
Net actuarial loss (gain)	\$ 387	\$ (4)
Prior service credit	(44)	(3)

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. 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 defined-benefit pension plans was \$13.9 billion and \$12.7 billion on December 31, 2017 and 2016, respectively. On December 31, 2017 and 2016, some of our pension plans had an ABO that exceeded the plans' assets. Summary information for those plans follows:

December 31	2017	2016
PBO	\$ (13,660)	\$ (12,817)
ABO	(13,398)	(12,557)
Fair value of plan assets	9,526	8,722

Retirement Plan 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	2017	2016
Pension Benefits		
Benefit obligation discount rate	3.62%	4.19%
Rate of increase in compensation levels	2.82%	2.92%
Other Post-retirement Benefits		
Benefit obligation discount rate	3.64%	4.11%
Healthcare cost trend rate:		
Trend rate for next year	6.50%	6.50%
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	2017	2016	2015
Pension Benefits			
Discount rates:			
Benefit obligation	4.19%	4.46%	4.10%
Service cost	4.13%	4.42%	*
Interest cost	3.56%	3.71%	*
Expected long-term rate of return on assets	7.43%	8.14%	8.15%
Rate of increase in compensation levels	2.90%	3.39%	3.43%
Other Post-retirement Benefits			
Discount rates:			
Benefit obligation	4.11%	4.35%	4.03%
Service cost	4.34%	4.52%	*
Interest cost	3.43%	3.53%	*
Expected long-term rate of return on assets	7.76%	7.81%	8.03%

* Not applicable as we changed to the spot rate approach beginning in 2016 as further described below.

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. Beginning in 2016, we refined the method used to determine the service and interest cost components of our net annual benefit cost. Previously, the cost was determined using a single weighted-average discount rate derived from the yield curve described above. Under the refined method, known as the spot rate approach, we use individual spot rates along the yield curve that correspond with the timing of each service cost and discounted benefit obligation payment. We believe this change provides a more precise measurement of service and interest costs by improving the correlation between projected service cost and discounted benefit obligation cash outflows and corresponding spot rates on the yield curve. We accounted for this change prospectively as a change in accounting estimate.

We determine the long-term rate of return on assets based on consideration of historical and forward-looking returns and the current and expected asset allocation strategy. In 2017, we decreased the expected long-term rate of return on assets in our primary U.S. government and commercial pension plans by 75

basis points following 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. 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. For our U.S. pension plans that represent the majority of our total obligation, the following hypothetical changes in the discount rates and expected long-term rates of return on plan assets would have had the following impact in 2017 :

	Increase 25 Basis Points	Decrease 25 Basis Points
Increase (decrease) to net pension cost from:		
Change in discount rates	\$ (28)	\$ 30
Change in long-term rates of return on plan assets	(21)	21

A 25-basis-point change in these assumed rates would not have had a measurable impact on the benefit cost for our other post-retirement plans in 2017 . For our healthcare plans, the effect of a 1% increase or decrease in the assumed healthcare cost trend rate on the 2017 net annual benefit cost is \$4 and (\$3) , respectively, and the effect on the December 31, 2017 , accumulated other post-retirement benefit obligation is \$75 and (\$60) , respectively.

Plan Assets

A committee of our board of directors is responsible for the strategic oversight of our defined-benefit retirement 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 retirement 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 rate of return used to determine our benefit obligations and 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 2017 , 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 U.S. government and commercial pension plans. On December 31, 2017 , 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 investments in equity assets include U.S. and international securities and equity funds. Our investments in fixed-income assets include U.S. Treasury and U.S. agency securities, corporate bonds, mortgage-backed securities and other asset-backed

securities. 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.

Assets for our non-U.S. pension plans are held in trusts in the countries in which the related operations reside. Our non-U.S. operations maintain investment policies for their individual plans based on country-specific regulations. The non-U.S. plan assets are invested primarily in commingled funds comprised of equity and fixed-income securities.

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 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 retirement 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 consist of 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 using valuation models that use observable inputs such as interest rates, bond yields, low-volume market quotes 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 include real estate funds, insurance deposit 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 . We had no unfunded commitments related to these investments on December 31, 2017 or 2016 .

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	Significant	Significant
		in Active Markets for Identical Assets (Level 1)	Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)
December 31, 2017				
Cash and equivalents	\$ 48	\$ —	\$ 48	\$ —
Equity securities (a):				
U.S. companies	770	770	—	—
Non-U.S. companies	97	97	—	—
Private equity investments	18	—	—	18
Fixed-income securities:				
Treasury securities	1,361	—	1,361	—
Corporate bonds (b)	1,604	—	1,604	—
Commingled funds:				
Equity funds	5,018	—	5,018	—
Fixed-income funds	325	—	325	—
Real estate funds	51	—	—	51
Other investments:				
Insurance deposit contracts	120	—	—	120
Total plan assets in fair value hierarchy	\$ 9,412	\$ 867	\$ 8,356	\$ 189
Plan assets measured using NAV as a practical expedient (c):				
Hedge funds	328			
Real estate funds	390			
Total pension plan assets	\$ 10,130			

(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	December 31, 2016				
	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	
Cash and equivalents	\$ 71	\$ 10	\$ 61	\$	—
Equity securities (a):					
U.S. companies	786	786	—		—
Non-U.S. companies	74	74	—		—
Private equity investments	13	—	—		13
Fixed-income securities:					
Treasury securities	239	—	239		—
Corporate bonds (b)	2,115	—	2,115		—
Commingled funds:					
Equity funds	4,285	—	4,285		—
Fixed-income funds	567	—	567		—
Real estate funds	42	—	—		42
Other investments:					
Insurance deposit contracts	109	—	—		109
Total plan assets in fair value hierarchy	\$ 8,301	\$ 870	\$ 7,267	\$	164
Plan assets measured using NAV as a practical expedient (c):					
Hedge funds	314				
Real estate funds	365				
Total pension plan assets	\$ 8,980				

(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 BBB+.

(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 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, 2017	
Cash equivalents	\$ 18	\$ —	\$ 18
Equity securities	70	70	—
Fixed-income securities	89	—	89
Commingled funds:			
Equity funds	260	—	260
Fixed-income funds	99	—	99
Real estate funds	2	2	—
Total plan assets in fair value hierarchy	\$ 538	\$ 72	\$ 466
Plan assets measured using NAV as a practical expedient (b):			
Hedge funds	1		
Real estate funds	2		
Total other post-retirement plan assets	\$ 541		

(a) We had no Level 3 investments on December 31, 2017.

(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, 2016	
Cash equivalents	\$ 10	\$ —	\$ 10
Equity securities	69	69	—
Fixed-income securities	88	—	88
Commingled funds:			
Equity funds	236	—	236
Fixed-income funds	92	—	92
Real estate funds	2	2	—
Total plan assets in fair value hierarchy	\$ 497	\$ 71	\$ 426
Plan assets measured using NAV as a practical expedient (b):			
Hedge funds	1		
Real estate funds	1		
Total other post-retirement plan assets	\$ 499		

(a) We had no Level 3 investments on December 31, 2016.

(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 retirement plan assets during 2017 and 2016 were as follows:

	Private Equity Investments	Real Estate Funds	Insurance Deposits Contracts	Total Level 3 Assets
December 31, 2015	\$ 12	\$ 42	\$ 103	\$ 157
Actual return on plan assets:				
Unrealized losses, net	1	—	(2)	(1)
Realized gains, net	—	—	3	3
Purchases, sales and settlements, net	—	—	5	5
December 31, 2016	13	42	109	164
Actual return on plan assets:				
Unrealized gains, net	1	4	4	9
Realized gains, net	—	—	2	2
Purchases, sales and settlements, net	4	5	5	14
December 31, 2017	\$ 18	\$ 51	\$ 120	\$ 189

R. BUSINESS GROUP INFORMATION

We operate in four business groups: Aerospace, Combat Systems, Information Systems and Technology, and Marine Systems. We organize our business groups in accordance with the nature of products and services offered. We measure each group'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 business groups.

Summary financial information for each of our business groups follows:

Year Ended December 31	Revenue			Operating Earnings			Revenue from U.S. Government		
	2017	2016	2015	2017	2016	2015	2017	2016	2015
Aerospace	\$ 8,129	\$ 7,815	\$ 9,177	\$ 1,593	\$ 1,407	\$ 1,807	\$ 231	\$ 361	\$ 104
Combat Systems	5,949	5,530	5,643	937	831	886	3,084	2,614	2,590
Information Systems and Technology	8,891	9,144	8,929	1,011	941	895	7,793	7,984	7,821
Marine Systems	8,004	8,072	8,032	685	595	748	7,913	7,717	7,463
Corporate*	—	—	—	(49)	(40)	(41)	—	—	—
Total	\$ 30,973	\$ 30,561	\$ 31,781	\$ 4,177	\$ 3,734	\$ 4,295	\$ 19,021	\$ 18,676	\$ 17,978

* Corporate operating results consist primarily of stock option expense.

Year Ended December 31	Identifiable Assets			Capital Expenditures			Depreciation and Amortization		
	2017	2016	2015	2017	2016	2015	2017	2016	2015
Aerospace	\$ 10,126	\$ 9,792	\$ 9,411	\$ 132	\$ 125	\$ 210	\$ 147	\$ 153	\$ 146
Combat Systems	9,846	8,885	7,810	84	71	79	86	86	91
Information Systems and Technology	8,877	8,445	8,575	63	97	73	92	103	131
Marine Systems	2,906	3,063	3,030	123	92	166	109	105	106
Corporate*	3,291	2,987	3,712	26	7	41	7	6	7
Total	\$ 35,046	\$ 33,172	\$ 32,538	\$ 428	\$ 392	\$ 569	\$ 441	\$ 453	\$ 481

* Corporate identifiable assets are primarily cash and equivalents.

See Note B for additional revenue information by business group.

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

Year Ended December 31	2017	2016	2015
North America:			
United States	\$ 23,519	\$ 23,160	\$ 23,480
Other	915	709	1,121
Total North America	24,434	23,869	24,601
Europe	2,558	2,152	2,760
Asia/Pacific	2,011	1,650	1,589
Africa/Middle East	1,655	2,617	2,426
South America	315	273	405
Total revenue	\$ 30,973	\$ 30,561	\$ 31,781

Our revenue from non-U.S. operations was \$3.7 billion in 2017 , 2016 and 2015 , and earnings from continuing operations before income taxes from non-U.S. operations were \$550 in 2017 , \$530 in 2016 and \$546 in 2015 . The long-lived assets associated with these operations were 5% of our total long-lived assets on December 31, 2017 , 2016 and 2015.

S. CONDENSED CONSOLIDATING FINANCIAL STATEMENTS

The fixed-rate notes described in Note K are fully and unconditionally guaranteed on an unsecured, joint and several basis by several of our 100 %-owned subsidiaries (the guarantors). The following condensed consolidating financial statements illustrate the composition of the parent, the guarantors on a combined basis (each guarantor together with its majority-owned subsidiaries) and all other subsidiaries on a combined basis.

CONDENSED CONSOLIDATING STATEMENTS OF EARNINGS

Year Ended December 31, 2017	Parent	Guarantors on a Combined Basis	Other Subsidiaries on a Combined Basis	Consolidating Adjustments	Total Consolidated
Revenue	\$ —	\$ 26,933	\$ 4,040	\$ —	\$ 30,973
Cost of sales	(6)	21,684	3,108	—	24,786
G&A	53	1,642	315	—	2,010
Operating earnings	(47)	3,607	617	—	4,177
Interest, net	(97)	1	(7)	—	(103)
Other, net	3	—	—	—	3
Earnings before income tax	(141)	3,608	610	—	4,077
Provision for income tax, net	(154)	1,262	57	—	1,165
Equity in net earnings of subsidiaries	2,899	—	—	(2,899)	—
Net earnings	\$ 2,912	\$ 2,346	\$ 553	\$ (2,899)	\$ 2,912
Comprehensive income	\$ 3,479	\$ 2,336	\$ 1,158	\$ (3,494)	\$ 3,479

Year Ended December 31, 2016

Revenue	\$ —	\$ 26,573	\$ 3,988	\$ —	\$ 30,561
Cost of sales	—	21,785	3,102	—	24,887
G&A	39	1,585	316	—	1,940
Operating earnings	(39)	3,203	570	—	3,734
Interest, net	(91)	(2)	2	—	(91)
Other, net	12	(4)	5	—	13
Earnings before income tax	(118)	3,197	577	—	3,656
Provision for income tax, net	(121)	1,055	43	—	977
Discontinued operations, net of tax	(107)	—	—	—	(107)
Equity in net earnings of subsidiaries	2,676	—	—	(2,676)	—
Net earnings	\$ 2,572	\$ 2,142	\$ 534	\$ (2,676)	\$ 2,572
Comprehensive income	\$ 2,468	\$ 2,112	\$ 543	\$ (2,655)	\$ 2,468

Year Ended December 31, 2015

Revenue	\$ —	\$ 27,730	\$ 4,051	\$ —	\$ 31,781
Cost of sales	(6)	22,385	3,154	—	25,533
G&A	46	1,610	297	—	1,953
Operating earnings	(40)	3,735	600	—	4,295
Interest, net	(89)	(1)	7	—	(83)
Other, net	4	2	1	—	7
Earnings before income tax	(125)	3,736	608	—	4,219
Provision for income tax, net	(151)	1,202	132	—	1,183
Equity in net earnings of subsidiaries	3,010	—	—	(3,010)	—
Net earnings	\$ 3,036	\$ 2,534	\$ 476	\$ (3,010)	\$ 3,036
Comprehensive income	\$ 2,685	\$ 2,745	\$ (193)	\$ (2,552)	\$ 2,685

CONDENSED CONSOLIDATING BALANCE SHEET

December 31, 2017	Parent	Guarantors on a Combined Basis	Other Subsidiaries on a Combined Basis	Consolidating Adjustments	Total Consolidated
ASSETS					
Current assets:					
Cash and equivalents	\$ 1,930	\$ —	\$ 1,053	\$ —	\$ 2,983
Accounts receivable	—	1,259	2,358	—	3,617
Unbilled receivables	—	2,547	2,693	—	5,240
Inventories	—	5,216	87	—	5,303
Other current assets	351	461	373	—	1,185
Total current assets	2,281	9,483	6,564	—	18,328
Noncurrent assets:					
PP&E	221	6,779	1,237	—	8,237
Accumulated depreciation of PP&E	(75)	(3,869)	(776)	—	(4,720)
Intangible assets, net	—	287	415	—	702
Goodwill	—	8,320	3,594	—	11,914
Other assets	199	232	154	—	585
Investment in subsidiaries	44,887	—	—	(44,887)	—
Total noncurrent assets	45,232	11,749	4,624	(44,887)	16,718
Total assets	\$ 47,513	\$ 21,232	\$ 11,188	\$ (44,887)	\$ 35,046
LIABILITIES AND SHAREHOLDERS' EQUITY					
Current liabilities:					
Short-term debt and current portion of long-term debt	\$ —	\$ 1	\$ 1	\$ —	\$ 2
Customer advances and deposits	—	4,180	2,812	—	6,992
Other current liabilities	561	3,758	1,786	—	6,105
Total current liabilities	561	7,939	4,599	—	13,099
Noncurrent liabilities:					
Long-term debt	3,950	21	9	—	3,980
Other liabilities	2,451	3,473	608	—	6,532
Total noncurrent liabilities	6,401	3,494	617	—	10,512
Intercompany	29,116	(28,494)	(622)	—	—
Shareholders' equity:					
Common stock	482	6	2,126	(2,132)	482
Other shareholders' equity	10,953	38,287	4,468	(42,755)	10,953
Total shareholders' equity	11,435	38,293	6,594	(44,887)	11,435
Total liabilities and shareholders' equity	\$ 47,513	\$ 21,232	\$ 11,188	\$ (44,887)	\$ 35,046

CONDENSED CONSOLIDATING BALANCE SHEET

December 31, 2016	Parent	Guarantors on a Combined Basis	Other Subsidiaries on a Combined Basis	Consolidating Adjustments	Total Consolidated
ASSETS					
Current assets:					
Cash and equivalents	\$ 1,254	\$ —	\$ 1,080	\$ —	\$ 2,334
Accounts receivable	—	1,155	2,244	—	3,399
Unbilled receivables	—	2,235	1,977	—	4,212
Inventories	—	5,022	96	—	5,118
Other current assets	634	599	238	—	1,471
Total current assets	1,888	9,011	5,635	—	16,534
Noncurrent assets:					
PP&E	197	6,586	1,146	—	7,929
Accumulated depreciation of PP&E	(67)	(3,653)	(732)	—	(4,452)
Intangible assets, net	—	265	413	—	678
Goodwill	—	8,050	3,395	—	11,445
Other assets	640	232	166	—	1,038
Investment in subsidiaries	41,956	—	—	(41,956)	—
Total noncurrent assets	42,726	11,480	4,388	(41,956)	16,638
Total assets	\$ 44,614	\$ 20,491	\$ 10,023	\$ (41,956)	\$ 33,172
LIABILITIES AND SHAREHOLDERS' EQUITY					
Current liabilities:					
Short-term debt and current portion of long-term debt	\$ 898	\$ 2	\$ —	\$ —	\$ 900
Customer advances and deposits	—	4,339	2,488	—	6,827
Other current liabilities	564	3,465	1,694	—	5,723
Total current liabilities	1,462	7,806	4,182	—	13,450
Noncurrent liabilities:					
Long-term debt	2,966	22	—	—	2,988
Other liabilities	3,520	2,330	583	—	6,433
Total noncurrent liabilities	6,486	2,352	583	—	9,421
Intercompany	26,365	(25,827)	(538)	—	—
Shareholders' equity:					
Common stock	482	6	2,354	(2,360)	482
Other shareholders' equity	9,819	36,154	3,442	(39,596)	9,819
Total shareholders' equity	10,301	36,160	5,796	(41,956)	10,301
Total liabilities and shareholders' equity	\$ 44,614	\$ 20,491	\$ 10,023	\$ (41,956)	\$ 33,172

CONDENSED CONSOLIDATING STATEMENTS OF CASH FLOWS

Year Ended December 31, 2017	Parent	Guarantors on a Combined Basis	Other Subsidiaries on a Combined Basis	Consolidating Adjustments	Total Consolidated
Net cash provided by operating activities*	\$ 316	\$ 2,370	\$ 1,193	\$ —	\$ 3,879
Cash flows from investing activities:					
Capital expenditures	(26)	(330)	(72)	—	(428)
Business acquisitions, net of cash acquired	—	(350)	(49)	—	(399)
Other, net	6	32	(2)	—	36
Net cash used by investing activities	(20)	(648)	(123)	—	(791)
Cash flows from financing activities:					
Purchases of common stock	(1,558)	—	—	—	(1,558)
Dividends paid	(986)	—	—	—	(986)
Proceeds from fixed-rate notes	985	—	—	—	985
Repayment of fixed-rate notes	(900)	—	—	—	(900)
Other, net	63	(3)	—	—	60
Net cash used by financing activities	(2,396)	(3)	—	—	(2,399)
Net cash used by discontinued operations	(40)	—	—	—	(40)
Cash sweep/funding by parent	2,816	(1,719)	(1,097)	—	—
Net increase in cash and equivalents	676	—	(27)	—	649
Cash and equivalents at beginning of year	1,254	—	1,080	—	2,334
Cash and equivalents at end of year	\$ 1,930	\$ —	\$ 1,053	\$ —	\$ 2,983
Year Ended December 31, 2016					
Net cash provided by operating activities*	\$ 219	\$ 1,914	\$ 65	\$ —	\$ 2,198
Cash flows from investing activities:					
Capital expenditures	(8)	(336)	(48)	—	(392)
Other, net	5	(1)	(38)	—	(34)
Net cash used by investing activities	(3)	(337)	(86)	—	(426)
Cash flows from financing activities:					
Purchases of common stock	(1,996)	—	—	—	(1,996)
Proceeds from fixed-rate notes	992	—	—	—	992
Dividends paid	(911)	—	—	—	(911)
Repayment of fixed-rate notes	(500)	—	—	—	(500)
Proceeds from stock option exercises	292	—	—	—	292
Other, net	(45)	(1)	—	—	(46)
Net cash used by financing activities	(2,168)	(1)	—	—	(2,169)
Net cash used by discontinued operations	(54)	—	—	—	(54)
Cash sweep/funding by parent	1,528	(1,576)	48	—	—
Net decrease in cash and equivalents	(478)	—	27	—	(451)
Cash and equivalents at beginning of year	1,732	—	1,053	—	2,785
Cash and equivalents at end of year	\$ 1,254	\$ —	\$ 1,080	\$ —	\$ 2,334

* Continuing operations only.

CONDENSED CONSOLIDATING STATEMENT OF CASH FLOWS

Year Ended December 31, 2015	Parent	Guarantors on a Combined Basis	Other Subsidiaries on a Combined Basis	Consolidating Adjustments	Total Consolidated
Net cash provided by operating activities*	\$ 50	\$ 2,202	\$ 355	\$ —	\$ 2,607
Cash flows from investing activities:					
Capital expenditures	(42)	(475)	(52)	—	(569)
Maturities of held-to-maturity securities	500	—	—	—	500
Other, net	166	103	—	—	269
Net cash provided by investing activities	624	(372)	(52)	—	200
Cash flows from financing activities:					
Purchases of common stock	(3,233)	—	—	—	(3,233)
Dividends paid	(873)	—	—	—	(873)
Repayment of fixed-rate notes	(500)	—	—	—	(500)
Other, net	237	2	—	—	239
Net cash used by financing activities	(4,369)	2	—	—	(4,367)
Net cash used by discontinued operations	(43)	—	—	—	(43)
Cash sweep/funding by parent	2,934	(1,832)	(1,102)	—	—
Net decrease in cash and equivalents	(804)	—	(799)	—	(1,603)
Cash and equivalents at beginning of year	2,536	—	1,852	—	4,388
Cash and equivalents at end of year	\$ 1,732	\$ —	\$ 1,053	\$ —	\$ 2,785

* Continuing operations only.

T. PRIOR-PERIOD FINANCIAL STATEMENTS

Our prior-period financial statements were restated for the adoption of two ASUs that are discussed below.

ASC Topic 606. We adopted ASC Topic 606 on January 1, 2017, using the retrospective method. The adoption of ASC Topic 606 had two primary impacts on our Consolidated Financial Statements. The impact of adjustments on profit recorded to date is now recognized in the period identified (cumulative catch-up method), rather than prospectively over the remaining contract term. For our contracts for the manufacture of business-jet aircraft, we now recognize revenue at a single point in time when control is transferred to the customer, generally upon delivery and acceptance of the fully outfitted aircraft. Prior to the adoption of ASC Topic 606, we recognized revenue for these contracts at two contractual milestones: when green aircraft were completed and accepted by the customer and when the customer accepted final delivery of the fully outfitted aircraft. The cumulative effect of the adoption was recognized as a decrease to retained earnings of \$372 on January 1, 2015.

We applied the standard's practical expedient that permits the omission of prior-period information about our remaining performance obligations. No other practical expedients were applied.

ASU 2015-17, Income Taxes (Topic 740): Balance Sheet Classification of Deferred Taxes. We adopted ASU 2015-17 on January 1, 2017, using the retrospective method. ASU 2015-17 requires that deferred tax assets and liabilities be classified as noncurrent on the Consolidated Balance Sheet. The adoption of ASU 2015-17 resulted in reclassifications among accounts on the Consolidated Balance Sheet, but had no other impacts on our results of operations, financial condition or cash flows.

The following tables summarize the effects of adopting these accounting standards on our Consolidated Financial Statements.

CONSOLIDATED STATEMENT OF EARNINGS

(Dollars in millions, except per-share amounts)	Year Ended		Effect of the Adoption of		Year Ended	
	December 31, 2016		ASC	ASU	December 31, 2016	
	As Reported		Topic 606	2015-17	As Adjusted	
Revenue:						
Products	\$	19,885	\$ (875)	\$	—	\$ 19,010
Services		11,468	83		—	11,551
		31,353	(792)		—	30,561
Operating costs and expenses:						
Products		15,458	(299)		—	15,159
Services		9,663	83		—	9,746
G&A		1,923	(1)		—	1,922
		27,044	(217)		—	26,827
Operating earnings		4,309	(575)		—	3,734
Interest, net		(91)	—		—	(91)
Other, net		13	—		—	13
Earnings from continuing operations before income tax		4,231	(575)		—	3,656
Provision for income tax, net		1,169	(192)		—	977
Earnings from continuing operations		3,062	(383)		—	2,679
Discontinued operations, net of tax benefit of \$51		(107)	—		—	(107)
Net earnings	\$	2,955	\$ (383)	\$	—	\$ 2,572
Earnings per share						
Basic:						
Continuing operations	\$	10.05	\$ (1.26)	\$	—	\$ 8.79
Discontinued operations		(0.35)	—		—	(0.35)
Net earnings	\$	9.70	\$ (1.26)	\$	—	\$ 8.44
Diluted:						
Continuing operations	\$	9.87	\$ (1.23)	\$	—	\$ 8.64
Discontinued operations		(0.35)	—		—	(0.35)
Net earnings	\$	9.52	\$ (1.23)	\$	—	\$ 8.29

CONSOLIDATED STATEMENT OF EARNINGS

(Dollars in millions, except per-share amounts)	Year Ended		Effect of the Adoption of		Year Ended			
	December 31, 2015		ASC	ASU	December 31, 2015			
	As Reported		Topic 606	2015-17	As Adjusted			
Revenue:								
Products	\$	20,280	\$	197	\$	—	\$	20,477
Services		11,189		115		—		11,304
		31,469		312		—		31,781
Operating costs and expenses:								
Products		15,883		103		—		15,986
Services		9,471		92		—		9,563
G&A		1,937		—		—		1,937
		27,291		195		—		27,486
Operating earnings		4,178		117		—		4,295
Interest, net		(83)		—		—		(83)
Other, net		7		—		—		7
Earnings from continuing operations before income tax		4,102		117		—		4,219
Provision for income tax, net		1,137		46		—		1,183
Earnings from continuing operations		2,965		71		—		3,036
Discontinued operations, net of tax benefit of \$7		—		—		—		—
Net earnings	\$	2,965	\$	71	\$	—	\$	3,036
Earnings per share								
Basic:								
Continuing operations	\$	9.23	\$	0.22	\$	—	\$	9.45
Discontinued operations		—		—		—		—
Net earnings	\$	9.23	\$	0.22	\$	—	\$	9.45
Diluted:								
Continuing operations	\$	9.08	\$	0.21	\$	—	\$	9.29
Discontinued operations		—		—		—		—
Net earnings	\$	9.08	\$	0.21	\$	—	\$	9.29

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(Dollars in millions)	Year Ended		Effect of the Adoption of		Year Ended
	December 31, 2016		ASC	ASU	December 31, 2016
	As Reported		Topic 606	2015-17	As Adjusted
Net earnings	\$	2,955	\$ (383)	\$ —	\$ 2,572
Gains on cash flow hedges		191	—	—	191
Unrealized losses on securities		(9)	—	—	(9)
Foreign currency translation adjustments		(118)	6	—	(112)
Change in retirement plans' funded status		(192)	—	—	(192)
Other comprehensive loss, pretax		(128)	6	—	(122)
Benefit for income tax, net		(18)	—	—	(18)
Other comprehensive loss, net of tax		(110)	6	—	(104)
Comprehensive income	\$	2,845	\$ (377)	\$ —	\$ 2,468

(Dollars in millions)	Year Ended		Effect of the Adoption of		Year Ended
	December 31, 2015		ASC	ASU	December 31, 2015
	As Reported		Topic 606	2015-17	As Adjusted
Net earnings	\$	2,965	\$ 71	\$ —	\$ 3,036
Losses on cash flow hedges		(394)	—	—	(394)
Unrealized losses on securities		(2)	—	—	(2)
Foreign currency translation adjustments		(374)	3	—	(371)
Change in retirement plans' funded status		500	—	—	500
Other comprehensive loss, pretax		(270)	3	—	(267)
Provision for income tax, net		84	—	—	84
Other comprehensive loss, net of tax		(354)	3	—	(351)
Comprehensive income	\$	2,611	\$ 74	\$ —	\$ 2,685

CONSOLIDATED BALANCE SHEET

(Dollars in millions)	December 31, 2016		Effect of the Adoption of		December 31, 2016
	As Reported	ASC Topic 606	ASU 2015-17*	As Adjusted	
ASSETS					
Current assets:					
Cash and equivalents	\$ 2,334	\$ —	\$ —	\$ 2,334	
Accounts receivable	3,611	(212)	—	3,399	
Unbilled receivables	5,282	(1,070)	—	4,212	
Inventories	3,523	1,595	—	5,118	
Other current assets	697	789	(15)	1,471	
Total current assets	15,447	1,102	(15)	16,534	
Noncurrent assets:					
PP&E, net	3,467	10	—	3,477	
Intangible assets, net	678	—	—	678	
Goodwill	11,445	—	—	11,445	
Other assets	1,835	—	(797)	1,038	
Total noncurrent assets	17,425	10	(797)	16,638	
Total assets	\$ 32,872	\$ 1,112	\$ (812)	\$ 33,172	
LIABILITIES AND SHAREHOLDERS' EQUITY					
Current liabilities:					
Short-term debt and current portion of long-term debt	\$ 900	\$ —	\$ —	\$ 900	
Accounts payable	2,538	—	—	2,538	
Customer advances and deposits	4,939	1,888	—	6,827	
Other current liabilities	4,469	(361)	(923)	3,185	
Total current liabilities	12,846	1,527	(923)	13,450	
Noncurrent liabilities:					
Long-term debt	2,988	—	—	2,988	
Other liabilities	6,062	260	111	6,433	
Commitments and contingencies					
Total noncurrent liabilities	9,050	260	111	9,421	
Shareholders' equity:					
Common stock	482	—	—	482	
Surplus	2,819	—	—	2,819	
Retained earnings	25,227	(684)	—	24,543	
Treasury stock	(14,156)	—	—	(14,156)	
Accumulated other comprehensive loss	(3,396)	9	—	(3,387)	
Total shareholders' equity	10,976	(675)	—	10,301	
Total liabilities and shareholders' equity	\$ 32,872	\$ 1,112	\$ (812)	\$ 33,172	

* The effect of the adoption of ASU 2015-17 includes the reclassification of current deferred tax assets and liabilities of \$10 and \$335, respectively, which represents the impact to current deferred taxes of adopting ASC Topic 606.

CONSOLIDATED STATEMENT OF CASH FLOWS

(Dollars in millions)	Year Ended		Effect of the Adoption of		Year Ended
	December 31, 2016		ASC	ASU	December 31, 2016
	As Reported	Topic 606	2015-17	As Adjusted	
Cash flows from operating activities - continuing operations:					
Net earnings	\$ 2,955	\$ (383)	\$ —	\$ —	\$ 2,572
Adjustments to reconcile net earnings to net cash provided by operating activities:					
Depreciation of PP&E	366	(1)	—	—	365
Amortization of intangible assets	88	—	—	—	88
Equity-based compensation expense	95	—	—	—	95
Deferred income tax provision	376	(192)	—	—	184
Discontinued operations, net of tax	107	—	—	—	107
(Increase) decrease in assets, net of effects of business acquisitions:					
Accounts receivable	(161)	39	—	—	(122)
Unbilled receivables	(1,033)	(15)	—	—	(1,048)
Inventories	(154)	(223)	—	—	(377)
Other current assets	55	260	—	—	315
Increase (decrease) in liabilities, net of effects of business acquisitions:					
Accounts payable	567	—	—	—	567
Customer advances and deposits	(825)	520	—	—	(305)
Other, net	(238)	(5)	—	—	(243)
Net cash provided by operating activities	2,198	—	—	—	2,198
Cash flows from investing activities:					
Capital expenditures	(392)	—	—	—	(392)
Business acquisitions, net of cash acquired	(58)	—	—	—	(58)
Proceeds from sales of assets	9	—	—	—	9
Other, net	15	—	—	—	15
Net cash used by investing activities	(426)	—	—	—	(426)
Cash flows from financing activities:					
Purchases of common stock	(1,996)	—	—	—	(1,996)
Proceeds from fixed-rate notes	992	—	—	—	992
Dividends paid	(911)	—	—	—	(911)
Repayment of fixed-rate notes	(500)	—	—	—	(500)
Proceeds from stock option exercises	292	—	—	—	292
Other, net	(46)	—	—	—	(46)
Net cash used by financing activities	(2,169)	—	—	—	(2,169)
Net cash used by discontinued operations	(54)	—	—	—	(54)
Net decrease in cash and equivalents	(451)	—	—	—	(451)
Cash and equivalents at beginning of year	2,785	—	—	—	2,785
Cash and equivalents at end of year	\$ 2,334	\$ —	\$ —	\$ —	\$ 2,334

CONSOLIDATED STATEMENT OF CASH FLOWS

(Dollars in millions)	Year Ended		Effect of the Adoption of		Year Ended		
	December 31, 2015		ASC	ASU	December 31, 2015		
	As Reported		Topic 606	2015-17	As Adjusted		
Cash flows from operating activities - continuing operations:							
Net earnings	\$	2,965	\$	71	\$ —	\$	3,036
Adjustments to reconcile net earnings to net cash provided by operating activities:							
Depreciation of PP&E		366		(1)			365
Amortization of intangible assets		116		—			116
Equity-based compensation expense		98		—			98
Deferred income tax provision		167		46			213
(Increase) decrease in assets, net of effects of business acquisitions:							
Accounts receivable		604		28			632
Unbilled receivables		231		(170)			61
Inventories		(156)		297			141
Other current assets		(38)		118			80
Increase (decrease) in liabilities, net of effects of business acquisitions:							
Accounts payable		(89)		—			(89)
Customer advances and deposits		(1,756)		(397)			(2,153)
Other, net		99		8			107
Net cash provided by operating activities		2,607		—			2,607
Cash flows from investing activities:							
Capital expenditures		(569)		—			(569)
Maturities of held-to-maturity securities		500		—			500
Proceeds from sales of assets		291		—			291
Business acquisitions, net of cash acquired		(5)		—			(5)
Other, net		(17)		—			(17)
Net cash provided by investing activities		200		—			200
Cash flows from financing activities:							
Purchases of common stock		(3,233)		—			(3,233)
Dividends paid		(873)		—			(873)
Repayment of fixed-rate notes		(500)		—			(500)
Proceeds from stock option exercises		268		—			268
Other, net		(29)		—			(29)
Net cash used by financing activities		(4,367)		—			(4,367)
Net cash used by discontinued operations		(43)		—			(43)
Net decrease in cash and equivalents		(1,603)		—			(1,603)
Cash and equivalents at beginning of year		4,388		—			4,388
Cash and equivalents at end of year	\$	2,785	\$	—	\$	—	\$ 2,785

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

(Dollars in millions)	Common Stock		Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Loss	Total Shareholders' Equity
	Par	Surplus				
December 31, 2014 - as reported	\$ 482	\$ 2,548	\$ 21,127	\$ (9,396)	\$ (2,932)	\$ 11,829
Cumulative-effect adjustment of ASC Topic 606 on January 1, 2015	—	—	(372)	—	—	(372)
December 31, 2014 - as adjusted	\$ 482	\$ 2,548	\$ 20,755	\$ (9,396)	\$ (2,932)	\$ 11,457
Year ended December 31, 2015 - as reported	—	182	2,077	(2,996)	(354)	(1,091)
Effect of the adoption of ASC Topic 606	—	—	71	—	3	74
Effect of the adoption of ASU 2015-17	—	—	—	—	—	—
December 31, 2015 - as adjusted	\$ 482	\$ 2,730	\$ 22,903	\$ (12,392)	\$ (3,283)	\$ 10,440
Year ended December 31, 2016 - as reported	—	89	2,023	(1,764)	(110)	238
Effect of the adoption of ASC Topic 606	—	—	(383)	—	6	(377)
Effect of the adoption of ASU 2015-17	—	—	—	—	—	—
December 31, 2016 - as adjusted	\$ 482	\$ 2,819	\$ 24,543	\$ (14,156)	\$ (3,387)	\$ 10,301

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Shareholders of General Dynamics Corporation:

Opinion on the Consolidated Financial Statements

We have audited the accompanying Consolidated Balance Sheets of General Dynamics Corporation and subsidiaries (the Company) as of December 31, 2017 and 2016, 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, 2017, 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, 2017 and 2016, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2017, 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, 2017, 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 12, 2018, expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

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 supporting 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.

KPMG LLP

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

McLean, Virginia
February 12, 2018

SUPPLEMENTARY DATA (UNAUDITED)

(Dollars in millions, except per-share amounts)	2016				2017			
	1Q	2Q	3Q (a)	4Q	1Q	2Q	3Q	4Q (b)
Revenue	\$ 7,476	\$ 7,774	\$ 7,657	\$ 7,654	\$ 7,441	\$ 7,675	\$ 7,580	\$ 8,277
Operating earnings	924	1,027	1,015	768	1,035	1,056	1,052	1,034
Earnings from continuing operations	654	714	731	580	763	749	764	636
Discontinued operations	(13)	—	(84)	(10)	—	—	—	—
Net earnings	\$ 641	\$ 714	\$ 647	\$ 570	\$ 763	\$ 749	\$ 764	\$ 636
Earnings per share - basic (c):								
Continuing operations	\$ 2.12	\$ 2.35	\$ 2.40	\$ 1.92	\$ 2.53	\$ 2.50	\$ 2.56	\$ 2.14
Discontinued operations	(0.04)	—	(0.27)	(0.04)	—	—	—	—
Net earnings	\$ 2.08	\$ 2.35	\$ 2.13	\$ 1.88	\$ 2.53	\$ 2.50	\$ 2.56	\$ 2.14
Earnings per share - diluted (c):								
Continuing operations	\$ 2.08	\$ 2.30	\$ 2.36	\$ 1.89	\$ 2.48	\$ 2.45	\$ 2.52	\$ 2.10
Discontinued operations	(0.04)	—	(0.27)	(0.04)	—	—	—	—
Net earnings	\$ 2.04	\$ 2.30	\$ 2.09	\$ 1.85	\$ 2.48	\$ 2.45	\$ 2.52	\$ 2.10
Market price range:								
High	\$ 138.53	\$ 147.16	\$ 156.97	\$ 180.09	\$ 194.00	\$ 205.17	\$ 207.60	\$ 214.81
Low	121.61	129.55	136.71	148.76	172.43	185.64	192.84	195.69
Dividends declared	\$ 0.76	\$ 0.76	\$ 0.76	\$ 0.76	\$ 0.84	\$ 0.84	\$ 0.84	\$ 0.84

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.

(a) Third-quarter 2016 includes an \$84 loss, net of tax, in discontinued operations to adjust the value of a previously-recognized settlement related to litigation associated with a former business of the company.

(b) Fourth-quarter 2017 includes a \$119 unfavorable one-time, non-cash impact resulting from the December 2017 change in tax law further discussed in Note F to the Consolidated Financial Statements in Item 8.

(c) 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, 2017, (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, 2017, 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, 2017 . In making this evaluation, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control – Integrated Framework (2013)* . Based on our evaluation we believe that, as of December 31, 2017 , 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
Chairman and Chief Executive Officer



Jason W. Aiken
Senior Vice President and Chief Financial Officer

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

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, 2017, based on the 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, 2017, based on the 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 Sheets of the Company as of December 31, 2017 and 2016, 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, 2017, and the related notes (collectively, the Consolidated Financial Statements), and our report dated February 12, 2018, 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 12, 2018

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, 2017, 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 Executive Officers of the Company 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 “Other Information – Section 16(a) Beneficial Ownership Reporting Compliance” in our definitive proxy statement for our 2018 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 Statements of Earnings
Consolidated Statements of Comprehensive Income
Consolidated Balance Sheets
Consolidated Statements of Cash Flows
Consolidated Statements 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	<u>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)</u>

- 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 \(incorporated herein by reference from the company's current report on Form 8-K, filed with the Commission September 14, 2017\)](#)
- 10.1* [General Dynamics Corporation 2009 Equity Compensation Plan \(incorporated herein by reference from the company's registration statement on Form S-8 \(No. 333-159038\) filed with the Commission May 7, 2009\)](#)
- 10.2* [Form of Non-Statutory Stock Option Agreement pursuant to the General Dynamics Corporation 2009 Equity Compensation Plan \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the quarter ended July 5, 2009, filed with the Commission August 4, 2009\)](#)
- 10.3* [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\)](#)
- 10.4* [Form of Non-Statutory Stock Option Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the quarter ended July 1, 2012, filed with the Commission August 1, 2012\)](#)
- 10.5* [Form of Non-Statutory Stock Option Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan \(for certain executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended March 30, 2014, filed with the Commission April 23, 2014\)](#)

- 10.6* [Form of Non-Statutory Stock Option Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan \(for grants made March 4, 2015, through March 1, 2016, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended April 5, 2015, filed with the Commission April 29, 2015\)](#)
- 10.7* [Form of Non-Statutory Stock Option Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan \(for grants beginning March 2, 2016, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended April 3, 2016, filed with the Commission April 27, 2016\)](#)
- 10.8* [Form of Restricted Stock Award Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan \(for grants beginning March 4, 2015, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended April 5, 2015, filed with the Commission April 29, 2015\)](#)
- 10.9* [Form of Restricted Stock Unit Award Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan \(for grants made March 4, 2015 through March 1, 2016\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended April 5, 2015, filed with the Commission April 29, 2015\)](#)
- 10.10* [Form of Restricted Stock Unit Award Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan \(for grants beginning March 2, 2016\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended April 3, 2016, filed with the Commission April 27, 2016\)](#)
- 10.11* [Form of Performance Restricted Stock Unit Award Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan \(for grants made March 4, 2015, through March 1, 2016, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended April 5, 2015, filed with the Commission April 29, 2015\)](#)
- 10.12* [Form of Performance Restricted Stock Unit Award Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan \(for grants beginning March 2, 2016, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended April 3, 2016, filed with the Commission April 27, 2016\)](#)
- 10.13* [Form of Non-Statutory Stock Option Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan \(for grants beginning May 3, 2017, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended July 2, 2017, filed with the Commission July 26, 2017\)](#)

- 10.14* [Form of Restricted Stock Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan \(for grants beginning May 3, 2017, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended July 2, 2017, filed with the Commission July 26, 2017\)](#)
- 10.15* [Form of Restricted Stock Unit Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan \(for grants beginning May 3, 2017\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended July 2, 2017, filed with the Commission July 26, 2017\)](#)
- 10.16* [Form of Performance Restricted Stock Unit Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan \(for grants beginning May 3, 2017, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended July 2, 2017, filed with the Commission July 26, 2017\)](#)
- 10.17* [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 entered into by substantially all 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* [General Dynamics Corporation Executive Annual Incentive Plan](#) **
- 21 [Subsidiaries](#) **
- 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 Interactive Data File**

* 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 herewith.

ITEM 16. FORM 10-K SUMMARY

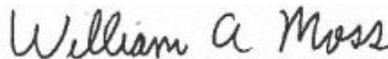
None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

GENERAL DYNAMICS CORPORATION

by



William A. Moss

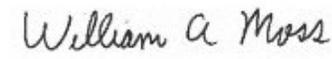
Vice President and Controller

Dated: February 12, 2018

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this report has been signed below on February 12, 2018, 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)

*

Nicholas D. Chabraja Director

*

James S. Crown Director

*

Rudy F. deLeon Director

*

John M. Keane Director

*

Lester L. Lyles Director

*

Mark M. Malcolm Director

*

William A. Osborn Director

*

Catherine B. Reynolds Director

*

Laura J. Schumacher 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

GENERAL DYNAMICS CORPORATION,

The Guarantors

and

The Bank of New York,
Trustee

INDENTURE

Dated as of August 27, 2001

Providing for Issuance of Senior Securities in Series

Table Showing Reflection in Indenture of Certain Provisions
of Trust Indenture Act of 1939,
as amended by the Trust Indenture Reform Act of 1990

(This Table is not part of the Indenture.)

Reflected in Indenture

TIA Section

§ 310(a)(1).....	6.09
(a)(2).....	6.09
(a)(3).....	Not Applicable
(a)(4).....	Not Applicable
(a)(5).....	6.09
(b).....	6.08
(c).....	Not Applicable
§ 311(a).....	6.13
(b).....	6.13; 7.03
§ 312(a).....	7.01; 7.02
(b).....	7.02
(c).....	7.02(c)
§ 313(a).....	7.03(a)
(b).....	7.03(b)
(c).....	7.03(b)
(d).....	7.03(c)
§ 314(a)(1).....	7.04
(a)(2).....	7.04
(a)(3).....	7.04
(a)(4).....	10.04
(b).....	Not Applicable
(c)(1).....	1.02
(c)(2).....	1.02
(c)(3).....	Not Applicable
(d).....	Not Applicable
(e).....	1.02
§ 315(a).....	6.01(a)
(b).....	6.02
(c).....	6.01(b)
(d).....	6.01
(e).....	5.14

§ 316(a)(1)(A).....	5.12
(a)(1)(B).....	5.13
(a)(2).....	Not Applicable
(b).....	5.08
(c).....	1.04(d)
§ 317(a)(1).....	5.03
(a)(2).....	5.04
(b).....	10.03
§ 318(a).....	1.07

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INDENTURE dated as of August 27, 2001, among GENERAL DYNAMICS CORPORATION, a Delaware corporation (the “Company”), the Guarantors (as defined herein) and The Bank of New York, a New York banking corporation, as Trustee (the “Trustee”).

RECITALS OF THE COMPANY

The Company has duly authorized the execution and delivery of this Indenture to provide for the issuance of its debentures, notes, bonds or other evidences of indebtedness, to be issued in one or more fully registered series.

All things necessary to make this Indenture a valid agreement of the Company, the Guarantors and the Trustee in accordance with its terms have been done.

AGREEMENTS OF THE PARTIES

To set forth or to provide for the establishment of the terms and conditions upon which the Securities are to be authenticated, issued and delivered, and in consideration of the premises and the purchase of Securities by the Holders thereof, it is mutually covenanted and agreed as follows, for the equal and proportionate benefit of all Holders of the Securities or of a series thereof, as the case may be:

ARTICLE 1. DEFINITIONS AND OTHER PROVISIONS OF GENERAL APPLICATION

SECTION 1.01 Definitions.

For all purposes of this Indenture and of any indenture supplemental hereto, except as otherwise expressly provided or unless the context otherwise requires:

- (1) the terms defined in this Article have the meanings assigned to them in this Article, and include the plural as well as the singular;
- (2) all other terms used herein which are defined in the Trust Indenture Act or by Commission rule under the Trust Indenture Act, either directly or by reference therein, have the meanings assigned to them herein;
- (3) all accounting terms not otherwise defined herein have the meanings assigned to them in accordance with GAAP and, except as otherwise herein expressly provided, the term “generally accepted accounting principles” with respect to any computation required or permitted hereunder shall mean such accounting principles and any accounting rules or interpretations promulgated by the Commission as are generally accepted in the United States of America at the date of this Indenture; and

(4) all references in this instrument to designated “Articles”, “Sections” and other subdivisions are to the designated Articles, Sections and other subdivisions of this instrument as executed. The words “herein”, “hereof” and “hereunder” and other words of similar import refer to this Indenture as a whole and not to any particular Article, Section or other subdivision.

“*Act*”, when used with respect to any Securityholder, has the meaning specified in Section 1.04.

“*Affiliate*” of any specified Person means any other Person directly or indirectly controlling or controlled by or under direct or indirect common control with such specified Person. For the purposes of this definition, “control” when used with respect to any specified Person means the power to direct the management and policies of such Person, directly or indirectly, whether through the ownership of voting securities, by contract or otherwise; and the terms “controlling” and “controlled” have meanings correlative to the foregoing.

“*Attributable Debt*” means, as to any particular lease under which any Person is at the time liable, at any date as of which the amount thereof is to be determined, the total net amount of rent required to be paid by such Person under such lease during the remaining term thereof (excluding any subsequent renewal or other extension options held by the lessee), discounted from the respective due dates thereof to such date at the rate of 15% per annum, compounded monthly. The net amount of rent required to be paid under any such lease for any such period shall be the aggregate amount of the rent payable by the lessee with respect to such period after excluding amounts required to be paid on account of maintenance and repairs, services, insurance, taxes, assessments, water rates and similar charges and contingent rents (such as those based on sales). In the case of any lease which is terminable by the lessee upon the payment of a penalty in an amount which is less than the total discounted net amount of rent required to be paid from the later of the first date upon which such lease may be so terminated or the date of the determination of such net amount of rent, as the case may be, such net amount shall also include the amount of such penalty, but no rent shall be considered as required to be paid under such lease subsequent to the first date upon which it may be so terminated.

“*Authenticating Agent*” means any Person authorized by the Company to authenticate Securities under Section 6.14.

“*Board of Directors*” means (i) the board of directors of the Company, (ii) any duly authorized committee of such board, (iii) any committee of officers of the Company or (iv) any officer of the Company acting, in the case of (iii) or (iv), pursuant to authority granted by the board of directors of the Company or any committee of such board.

“*Board Resolution*” means a copy of a resolution certified by the Secretary or an Assistant Secretary of the Company to have been duly adopted by the Board of Directors and to be in full force and effect on the date of such certification, and delivered to the Trustee.

“*Business Day*” means, with respect to any series of Securities, unless otherwise specified in a Board Resolution and an Officer’s Certificate with respect to a particular series of

Securities, each day which is not a Saturday, Sunday or other day on which banking institutions in the pertinent Place or Places of Payment or the city in which the Corporate Trust Office is located are authorized or required by law or executive order to be closed.

“*Commission*” means the Securities and Exchange Commission, as from time to time constituted, or, if at any time after the execution of this instrument such Commission is not existing and performing the duties now assigned to it under the Trust Indenture Act, then the body performing such duties at such time.

“*Company*” means the Person named as the “Company” in the first paragraph of this instrument until a successor shall have become such pursuant to the applicable provisions of this Indenture, and thereafter “Company” shall mean such successor.

“*Company Request*” and “*Company Order*” mean a written request or order, respectively, signed in the name of the Company by its Chairman of the Board, Chief Executive Officer, Chief Financial Officer or a Vice President, and by its Treasurer, an Assistant Treasurer, Controller, an Assistant Controller, Secretary or an Assistant Secretary, and delivered to the Trustee.

“*Consolidated Assets*” means the total assets of the Company and its Subsidiaries calculated on a consolidated basis in accordance with GAAP.

“*Corporate Trust Office*” means the office of the Trustee at which at any particular time its corporate trust business shall be principally administered, which office at the date hereof is located at 101 Barclay Street, Floor 21W, New York, New York 10286.

“*Defaulted Interest*” has the meaning specified in Section 3.07.

“*Depository*” means, unless otherwise specified by the Company pursuant to either Section 2.04 or 3.01, with respect to Securities of any series issuable or issued as a Global Security, The Depository Trust Company, New York, New York, or any successor thereto registered as a clearing agency under the Securities Exchange Act of 1934, as amended, or other applicable statute or regulation.

“*Discharged*” has the meaning specified in Section 4.03.

“*Event of Default*” has the meaning specified in Article 5.

“*Federal Bankruptcy Act*” has the meaning specified in Section 5.01(5).

“*GAAP*” means generally accepted accounting principles as such principles are in effect as of the date of this Indenture.

“*Global Security*”, when used with respect to any series of Securities issued hereunder, means a Security which is executed by the Company and authenticated and delivered by the Trustee to the Depository or pursuant to the Depository’s instruction, all in accordance with this Indenture and an indenture supplemental hereto, if any, or Board Resolution and pursuant to a Company Request, which shall be registered in the name of the Depository or its nominee and which

shall represent, and shall be denominated in an amount equal to the aggregate principal amount of, all of the Outstanding Securities of such series or any portion thereof, in either case having the same terms, including, without limitation, the same original issue date, date or dates on which principal is due, and interest rate or method of determining interest.

“*Guarantee*” means each guarantee specified in Section 12.01.

“*Guarantors*” means the entities set forth on Exhibit A attached hereto, as amended from time to time, in accordance with this Indenture.

“*Holder*”, when used with respect to any Security, means a Securityholder.

“*Indenture*” or “*this Indenture*” means this instrument as originally executed or as it may from time to time be supplemented or amended by one or more indentures supplemental hereto entered into pursuant to the applicable provisions hereof and shall include the terms of particular series of Securities established as contemplated by Section 3.01.

“*Interest Payment Date*”, when used with respect to any series of Securities, means the Stated Maturity of any installment of interest on those Securities.

“*Lien*” means, with respect to any asset, any lien, mortgage, deed of trust, pledge, security interest, charge or encumbrance of any kind (including any conditional sale or other title retention agreement, any lease in the nature thereof and any agreement to give any security interest).

“*Material Subsidiary*” means, as of any date of determination, a Subsidiary of the Company whose assets exceed ten percent (10%) of the Company’s Consolidated Assets as of the date of such determination. However, the Board of Directors of the Company may declare any Subsidiary of the Company to be a Material Subsidiary.

“*Maturity*”, when used with respect to any Securities, means the date on which the principal of any such Security becomes due and payable as therein or herein provided, whether on a Repayment Date, at the Stated Maturity or by declaration of acceleration, call for redemption or otherwise.

“*Officers’ Certificate*” means a certificate signed by the Chairman of the Board, the Chief Executive Officer, Chief Financial Officer or a Vice President, and by the Treasurer, an Assistant Treasurer, the Controller, an Assistant Controller, the Secretary or an Assistant Secretary of the Company or any Guarantor, as applicable, and delivered to the Trustee. Wherever this Indenture requires that an Officers’ Certificate be signed also by an engineer or an accountant or other expert, such engineer, accountant or other expert (except as otherwise expressly provided in this Indenture) may be in the employ of the Company or such Guarantor.

“*Opinion of Counsel*” means a written opinion of counsel, who may (except as otherwise expressly provided in this Indenture) be an employee of or of counsel to the Company, which is delivered to the Trustee. Such counsel shall be acceptable to the Trustee, whose acceptance shall not be unreasonably withheld.

“*Original Issue Discount Security*” means (i) any Security which provides for an amount less than the principal amount thereof to be due and payable upon a declaration of acceleration of the Maturity thereof, and (ii) any other security which is issued with “original issue discount” within the meaning of Section 1273(a) of the Internal Revenue Code of 1986, as amended, and the regulations thereunder.

“*Outstanding*”, when used with respect to Securities or Securities of any series, means, as of the date of determination, all such Securities theretofore authenticated and delivered under this Indenture, except

- (i) such Securities theretofore canceled by the Trustee or delivered to the Trustee for cancellation;
- (ii) such Securities for whose payment or redemption money in the necessary amount has been theretofore deposited with the Trustee or any Paying Agent in trust for the Holders of such Securities; provided that, if such Securities are to be redeemed, notice of such redemption has been duly given pursuant to this Indenture or provision therefor satisfactory to the Trustee has been made; and
- (iii) such Securities in exchange for or in lieu of which other Securities have been authenticated and delivered pursuant to this Indenture, or which shall have been paid, pursuant to the terms of Section 3.06 (except with respect to any such Security as to which proof satisfactory to the Trustee is presented that such Security is held by a Person in whose hands such Security is a legal, valid and binding obligation of the Company).

In determining whether the Holders of the requisite principal amount of such Securities Outstanding have given any request, demand, authorization, direction, notice, consent or waiver hereunder, (i) the principal amount of any Original Issue Discount Security that shall be deemed to be Outstanding shall be the amount of the principal thereof that would be due and payable as of the date of the taking of such action upon a declaration of acceleration of the Maturity thereof, and (ii) Securities owned by the Company or any other obligor upon the Securities or any Affiliate of the Company or of such other obligor shall be disregarded and deemed not to be Outstanding. In determining whether the Trustee shall be protected in relying upon any such request, demand, authorization, direction, notice, consent or waiver, only Securities which a Responsible Officer assigned to the corporate trust department of the Trustee actually knows to be owned by the Company or any other obligor upon the Securities or any Affiliate of the Company or such other obligor shall be so disregarded. Securities so owned which have been pledged in good faith may be regarded as Outstanding if the pledgee establishes to the satisfaction of the Trustee the pledgee’s right to act as owner with respect to such Securities and that the pledgee is not the Company or any other obligor upon the Securities or any Affiliate of the Company or such other obligor.

“*Paying Agent*” means any Person authorized by the Company to pay the principal of (and premium, if any) or interest on any Securities on behalf of the Company. The Company initially authorizes the Trustee to act as Paying Agent for the Securities on its behalf. Without prior notice to the Securityholders, the Company may at any time and from time to time authorize one

or more Persons (including the Company) to act as Paying Agent in addition to or in place of the Trustee with respect to any series of Securities issued under this Indenture.

“*Person*” means any individual, corporation, limited liability company, partnership, joint venture, association, joint-stock company, trust, unincorporated organization or government or any agency or political subdivision thereof.

“*Place of Payment*” means with respect to any series of Securities issued hereunder the city or political subdivision so designated with respect to the series of Securities in question in accordance with the provisions of Section 3.01.

“*Predecessor Securities*” of any particular Security means every previous Security evidencing all or a portion of the same debt as that evidenced by such particular Security; and, for the purposes of this definition, any Security authenticated and delivered under Section 3.06 in lieu of a lost, destroyed or stolen Security shall be deemed to evidence the same debt as the lost, destroyed or stolen Security.

“*Principal Property*” means any manufacturing plant or warehouse, together with the land upon which it is erected and fixtures comprising a part thereof, owned by the Company or any Material Subsidiary and located in the United States, the gross book value of which on the date as of which the determination is being made is an amount which exceeds 2% of Consolidated Assets, but not including any property financed through the issuance of any tax exempt governmental obligation, or any such manufacturing plant or warehouse or any portion thereof or any such fixture (together with the land upon which it is erected and fixtures comprising a part thereof) which, in the opinion of the Board of Directors, is not of material importance to the total business conducted by the Company and its Subsidiaries, considered as a single enterprise.

“*Redemption Date*”, when used with respect to any Security to be redeemed, means the date fixed for such redemption by or pursuant to this Indenture.

“*Redemption Price*”, when used with respect to any Security to be redeemed, means the price specified in the Security at which it is to be redeemed pursuant to this Indenture.

“*Regular Record Date*” for the interest payable on any Security on any Interest Payment Date means the date specified in such Security as the Regular Record Date.

“*Repayment Date*”, when used with respect to any Security to be repaid, means the date fixed for such repayment pursuant to such Security.

“*Repayment Price*”, when used with respect to any Security to be repaid, means the price at which it is to be repaid pursuant to such Security.

“*Responsible Officer*”, when used with respect to the Trustee, means any officer of the Trustee with direct responsibility for the administration of this Indenture and also means, with respect to a particular corporate trust matter, any other officer to whom such matter is referred because of his knowledge of and familiarity with the particular subject.

“*Sale and Leaseback Transaction*” shall have the meaning specified in Section 10.07.

“*Security*” or “*Securities*” means any note or notes, bond or bonds, debenture or debentures, or any other evidences of indebtedness, as the case may be, of any series authenticated and delivered from time to time under this Indenture.

“*Security Register*” shall have the meaning specified in Section 3.05.

“*Security Registrar*” means the Person who keeps the Security Register specified in Section 3.05. The Company initially appoints the Trustee to act as Security Registrar for the Securities on its behalf. The Company may at any time and from time to time authorize any Person to act as Security Registrar in place of the Trustee with respect to any series of Securities issued under this Indenture.

“*Securityholder*” means a Person in whose name a security is registered in the Security Register.

“*Special Record Date*” for the payment of any Defaulted Interest means a date fixed by the Trustee pursuant to Section 3.07.

“*Stated Maturity*” when used with respect to any Security or any installment of principal thereof or interest thereon means the date specified in such Security as the fixed date on which the principal of such Security or such installment of principal or interest is due and payable.

“*Subsidiary*” means, with respect to any Person, any corporation more than 50% of the Voting Stock of which is owned directly or indirectly by such Person, and any partnership, association, joint venture or other entity in which such Person owns more than 50% of the equity interests or has the power to elect a majority of the board of directors or other governing body.

“*Tranche*” has the meaning specified in Section 11.03.

“*Trust Indenture Act*” or “*TIA*” means the Trust Indenture Act of 1939 as in force at the date as of which this instrument was executed; provided, however, that, in the event the Trust Indenture Act of 1939 is amended after such date, “Trust Indenture Act” or “TIA” means, to the extent required by any such amendment, the Trust Indenture Act of 1939 as so amended.

“*Trustee*” means the Person named as the Trustee in the first paragraph of this instrument until a successor Trustee shall have become such pursuant to the applicable provisions of this Indenture, and thereafter “Trustee” shall mean and include each Person who is then a Trustee hereunder. If at any time there is more than one such Person, “Trustee” as used with respect to the Securities of any series shall mean the Trustee with respect to Securities of that series.

“*Vice President*” when used with respect to the Company or the Trustee means any vice president, whether or not designated by a number or a word or words added before or after the title “vice president”, including, without limitation, an assistant vice president.

“*Voting Stock*”, as applied to the stock of any corporation, means stock of any class or classes (however designated) having by the terms thereof ordinary voting power to elect a majority of the members of the board of directors (or other governing body) of such corporation other than stock having such power only by reason of the happening of a contingency.

SECTION 1.02 Compliance Certificates and Opinions.

Upon any application or request by the Company to the Trustee to take any action under any provision of this Indenture, the Company shall furnish to the Trustee an Officers’ Certificate stating that all conditions precedent, if any (including any covenants compliance with which constitutes a condition precedent), provided for in this Indenture relating to the proposed action have been complied with and an Opinion of Counsel stating that in the opinion of such counsel all such conditions precedent, if any (including any covenants compliance with which constitutes a condition precedent), have been complied with, except that in the case of any such application or request as to which the furnishing of such documents is specifically required by any provision of this Indenture relating to such particular application or request, no additional certificate or opinion need be furnished.

Every certificate or opinion with respect to compliance with a condition or covenant provided for in this Indenture (other than annual statements of compliance provided pursuant to Section 10.04) shall include:

- (1) a statement that each individual signing such certificate or opinion has read such covenant or condition and the definitions herein relating thereto;
- (2) a brief statement as to the nature and scope of the examination or investigation upon which the statements or opinions contained in such certificate or opinion are based;
- (3) a statement that, in the opinion of each such individual, he has made such examination or investigation as is necessary to enable him to express an informed opinion as to whether or not such covenant or condition has been complied with; and
- (4) a statement as to whether, in the opinion of each such individual, such condition or covenant has been complied with.

SECTION 1.03 Form of Documents Delivered to Trustee.

In any case where several matters are required to be certified by, or covered by an opinion of, any specified Person, it is not necessary that all such matters be certified by, or covered by the opinion of, only one such Person, or that they be so certified or covered by only one document, but one such Person may certify or give an opinion with respect to some matters and one or more other such Persons may certify or give an opinion as to the other matters, and any such Person may certify or give an opinion as to such matters in one or several documents.

Any certificate or opinion of an officer of the Company may be based, insofar as it relates to legal matters, upon a certificate or opinion of, or representations by, counsel, unless such officer knows, or in the exercise of reasonable care should know, that the certificate or opinion or representations with respect to the matters upon which his certificate or opinion is based are erroneous. Any such certificate or Opinion of Counsel may be based, insofar as it relates to factual matters, upon a certificate or opinion of, or representations by, an officer or officers of the Company stating that the information with respect to such factual matters is in the possession of the Company, unless such counsel knows, or in the exercise of reasonable care should know, that the certificate or opinion or representations with respect to such matters are erroneous.

Where any Person is required to make, give or execute two or more applications, requests, consents, certificates, statements, opinions or other instruments under this Indenture, they may, but need not, be consolidated and form one instrument.

SECTION 1.04 Acts of Securityholders.

(a) Any request, demand, authorization, direction, notice, consent, waiver or other action provided by this Indenture to be given or taken by Securityholders or Securityholders of any series may be embodied in and evidenced by one or more instruments of substantially similar tenor signed by such Securityholders in person or by an agent duly appointed in writing or may be embodied in or evidenced by an electronic transmission which identifies the documents containing the proposal on which such consent is requested and certifies such Securityholders' consent thereto and agreement to be bound thereby; and, except as herein otherwise expressly provided, such action shall become effective when such instrument or instruments are delivered to the Trustee, and, where it is hereby expressly required, to the Company. If any Securities are Original Issue Discount Securities, then for the purposes of determining whether the Holders of the requisite principal amount of Securities have taken any action as herein described, the principal amount of such Original Issue Discount Securities shall be deemed to be the amount of the principal thereof that would be due and payable upon a declaration of acceleration of the Maturity thereof as of the date the taking of such action by the Holders of such requisite principal amount is evidenced to the Trustee as provided in the first sentence of this Section 1.04(a). Such instrument or instruments (and the action embodied therein and evidenced thereby) are herein sometimes referred to as the "Act" of the Securityholders signing such instrument or instruments. Proof of execution of any such instrument or of a writing appointing any such agent shall be sufficient for any purpose of this Indenture and (subject to Section 6.01) conclusive in favor of the Trustee and the Company, if made in the manner provided in this Section.

(b) The fact and date of the execution by any Person of any such instrument or writing may be proved by the affidavit of a witness to such execution or by the certificate of any notary public or other officer authorized by law to take acknowledgments of deeds, certifying that the individual signing such instrument or writing acknowledged to him the execution thereof. Where such execution is by an officer of a corporation or a member of a partnership, on behalf of such corporation or partnership, such

certificate or affidavit shall also constitute sufficient proof of his authority. The fact and date of the execution of any such instrument or writing, or the authority of the person executing the same, may also be proved in any other manner which the Trustee deems sufficient.

(c) The ownership of Securities shall be proved by the Security Register.

(d) If the Company shall solicit from the Holders any request, demand, authorization, direction, notice, consent, waiver or other action, the Company may, at its option, by Board Resolution, fix in advance a record date for the determination of Holders entitled to give such request, demand, authorization, direction, notice, consent, waiver or other action, but the Company shall have no obligation to do so. Such record date shall be the later of 10 days prior to the first solicitation of such action or the date of the most recent list of Holders furnished to the Trustee pursuant to Section 7.01. If such a record date is fixed, such request, demand, authorization, direction, notice, consent, waiver or other action may be given before or after the record date, but only the Holders of record at the close of business on the record date shall be deemed to be Holders for the purposes of determining whether Holders of the requisite proportion of Securities outstanding have authorized or agreed or consented to such request, demand, authorization, direction, notice, consent, waiver or other action, and for that purpose the Securities outstanding shall be computed as of the record date; provided that no such authorization, agreement or consent by the Holders on the record date shall be deemed effective unless it shall become effective pursuant to the provisions of this Indenture not later than six months after the record date, and that no such authorization, agreement or consent may be amended, withdrawn or revoked once given by a Holder, unless the Company shall provide for such amendment, withdrawal or revocation in conjunction with such solicitation of authorizations, agreements or consents or unless and to the extent required by applicable law.

(e) Any request, demand, authorization, direction, notice, consent, waiver or other action by the Holder of any Security shall bind the Holder of every Security issued upon the registration of transfer thereof or in exchange therefor or in lieu thereof, in respect of anything done or suffered to be done by the Trustee or the Company in reliance thereon whether or not notation of such action is made upon such Security.

SECTION 1.05 Notices, etc., to Trustee and Company.

Any request, demand, authorization, direction, notice, consent, waiver or Act of Securityholders or other document provided or permitted by this Indenture to be made upon, given or furnished to, or filed with:

(1) the Trustee by any Securityholder or by the Company shall be sufficient for every purpose hereunder if made, given, furnished or filed in writing to or with the Trustee at its Corporate Trust Office, Attention: Corporate Trust Administration; or

(2) the Company by the Trustee or by any Securityholder shall be sufficient for every purpose hereunder (except as provided in Section 5.01(4) or, in the case

of a request for repayment, as specified in the Security carrying the right to repayment) if in writing and mailed, first-class postage prepaid, to the Company addressed to it at 3190 Fairview Park Drive, Falls Church, Virginia 22042, Attention: Treasurer, or at any other address previously furnished in writing to the Trustee by the Company.

SECTION 1.06 Notices to Securityholders; Waiver.

Where this Indenture or any Security provides for notice to Securityholders of any event, such notice shall be sufficiently given (unless otherwise herein or in such Security expressly provided) if in writing and mailed, first-class postage prepaid, to each Securityholder affected by such event, at his address as it appears in the Security Register, not later than the latest date, and not earlier than the earliest date, prescribed for the giving of such notice. In any case where notice to Securityholders is given by mail, neither the failure to mail such notice, nor any defect in any notice so mailed, to any particular Securityholder shall affect the sufficiency of such notice with respect to other Securityholders. Where this Indenture or any Security provides for notice in any manner, such notice may be waived in writing by the Person entitled to receive such notice, either before or after the event, and such waiver shall be the equivalent of such notice. Waivers of notice by Securityholders shall be filed with the Trustee, but such filing shall not be a condition precedent to the validity of any action taken in reliance upon such waiver.

In case, by reason of the suspension of regular mail service as a result of a strike, work stoppage or otherwise, it shall be impractical to mail notice of any event to any Securityholder when such notice is required to be given pursuant to any provision of this Indenture, then any method of notification as shall be satisfactory to the Trustee and the Company shall be deemed to be a sufficient giving of such notice.

SECTION 1.07 Conflict with Trust Indenture Act.

If and to the extent that any provision hereof limits, qualifies or conflicts with the duties imposed by, or with another provision (an “incorporated provision”) included in this Indenture by operation of, any of Sections 310 to 318, inclusive, of the Trust Indenture Act, such imposed duties or incorporated provision shall control.

SECTION 1.08 Effect of Headings and Table of Contents.

The Article and Section headings herein and the Table of Contents are for convenience only and shall not affect the construction hereof.

SECTION 1.09 Successors and Assigns.

All covenants and agreements in this Indenture by the Company and the Guarantors shall bind their respective successors and assigns, whether so expressed or not; provided; however, that successors and assigns of any Guarantor shall not be so bound to the extent such Guarantor has been released from its Guarantee pursuant to the terms of this Indenture.

SECTION 1.10 Separability Clause.

In case any provision in this Indenture or in the Securities shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

SECTION 1.11 Benefits of Indenture.

Nothing in this Indenture or in any Securities, express or implied, shall give to any Person, other than the parties hereto and their successors hereunder, any Authenticating Agent or Paying Agent, the Security Registrar and the Holders of Securities (or such of them as may be affected thereby), any benefit or any legal or equitable right, remedy or claim under this Indenture.

SECTION 1.12 Governing Law.

This Indenture shall be construed in accordance with and governed by the laws of the State of New York, without regard to conflicts of laws principles thereof.

SECTION 1.13 Counterparts.

This instrument may be executed in any number of counterparts, each of which so executed shall be deemed to be an original, but all such counterparts shall together constitute but one and the same instrument.

ARTICLE 2.
SECURITY FORMS

SECTION 2.01 Forms Generally.

The Securities shall have such appropriate insertions, omissions, substitutions and other variations as are required or permitted by this Indenture and may have such letters, numbers or other marks of identification and such legends or endorsements placed thereon, as may be required to comply with the rules of any securities exchange, or as may, consistently herewith, be determined by the officers executing such Securities, as evidenced by their execution of the Securities. Any portion of the text of any Security may be set forth on the reverse thereof, with an appropriate reference thereto on the face of the Security.

The definitive Securities shall be printed, lithographed or engraved or produced by any combination of these methods on steel engraved borders or may be produced in any other manner, all as determined by the officers executing such Securities, as evidenced by their execution of such Securities, subject, with respect to the Securities of any series, to the rules of any securities exchange on which such Securities are listed.

SECTION 2.02 Forms of Securities.

Each Security shall be in one of the forms approved from time to time by or pursuant to a Board Resolution, or established in one or more indentures supplemental hereto. Prior to the delivery of a Security to the Trustee for authentication in any form approved by or pursuant to a Board Resolution, the Company shall deliver to the Trustee the Board Resolution by or pursuant to which such form of Security has been approved, which Board Resolution shall have attached thereto a true and correct copy of the form of Security which has been approved thereby or, if a Board Resolution authorizes a specific officer or officers to approve a form of Security, a certificate of such officer or officers approving the form of Security attached thereto. Any form of Security approved by or pursuant to a Board Resolution must be acceptable as to form to the Trustee, such acceptance to be evidenced by the Trustee's authentication of Securities in that form or a certificate signed by a Responsible Officer of the Trustee and delivered to the Company.

SECTION 2.03 Form of Trustee's Certificate of Authentication.

The form of the Trustee's Certificate of Authentication for any Security issued pursuant to this Indenture shall be substantially as follows:

TRUSTEE'S CERTIFICATE OF AUTHENTICATION

This is one of the Securities of the series designated therein referred to in the within-mentioned Indenture.

THE BANK OF NEW YORK, as Trustee

By: _____
Authorized Signatory

SECTION 2.04 Securities Issuable in the Form of a Global Security.

(a) If the Company shall establish pursuant to Sections 2.02 and 3.01 that the Securities of a particular series are to be issued in whole or in part in the form of one or more Global Securities, then the Company shall execute and the Trustee or its agent shall, in accordance with Section 3.03 and the Company Order delivered to the Trustee or its agent thereunder, authenticate and deliver, such Global Security or Securities, which (i) shall represent, and shall be denominated in an amount equal to the aggregate principal amount of, the Outstanding Securities of such series to be represented by such Global Security or Securities, or such portion thereof as the Company shall specify in a Company Order, (ii) shall be registered in the name of the Depository for such Global Security or Securities or its nominee, (iii) shall be delivered by the Trustee or its agent to the Depository or pursuant to the Depository's instruction and (iv) shall bear a legend substantially to the following effect: "Unless this certificate is presented by an authorized representative of the Depository to Issuer or its agent for registration of transfer, exchange, or payment, and any certificate issued is registered in the name of the nominee of the Depository or in such other name as is requested by an authorized representative of the Depository (and any payment

is made to the nominee of the Depository or to such other entity as is requested by an authorized representative of the Depository), ANY TRANSFER, PLEDGE, OR OTHER USE HEREOF FOR VALUE OR OTHERWISE BY OR TO ANY PERSON IS WRONGFUL inasmuch as the registered owner hereof, the nominee of the Depository, has an interest herein.”

(b) Notwithstanding any other provision of this Section 2.04 or of Section 3.05, and subject to the provisions of paragraph (c) below, unless the terms of a Global Security expressly permit such Global Security to be exchanged in whole or in part for individual Securities, a Global Security may be transferred, in whole but not in part and in the manner provided in Section 3.05, only to a nominee of the Depository for such Global Security, or to the Depository, or a successor Depository for such Global Security selected or approved by the Company, or to a nominee of such successor Depository.

(c) (i) If at any time the Depository for a Global Security notifies the Company that it is unwilling or unable to continue as Depository for such Global Security or if at any time the Depository for the Securities for such series shall no longer be eligible or in good standing under the Securities Exchange Act of 1934, as amended, or other applicable statute or regulation, the Company shall appoint a successor Depository with respect to such Global Security. If a successor Depository for such Global Security is not appointed by the Company within 90 days after the Company receives such notice or becomes aware of such ineligibility, the Company will execute, and the Trustee or its agent, upon receipt of a Company Request for the authentication and delivery of individual Securities of such series in exchange for such Global Security, will authenticate and deliver, individual Securities of such series of like tenor and terms in an aggregate principal amount equal to the principal amount of the Global Security in exchange for such Global Security.

(ii) The Company may at any time and in its sole discretion determine that the Securities of any series or portion thereof issued or issuable in the form of one or more Global Securities shall no longer be represented by such Global Security or Securities. In such event the Company will execute, and the Trustee, upon receipt of a Company Request for the authentication and delivery of individual Securities of such series in exchange in whole or in part for such Global Security, will authenticate and deliver individual Securities of such series of like tenor and terms in definitive form in an aggregate principal amount equal to the principal amount of such Global Security or Securities representing such series or portion thereof in exchange for such Global Security or Securities.

(iii) If specified by the Company pursuant to Sections 2.02 and 3.02 with respect to Securities issued or issuable in the form of a Global Security, the Depository for such Global Security may surrender such Global Security in exchange in whole or in part for individual Securities of such series of like tenor and terms in definitive form on such terms as are acceptable to the Company and such Depository. Thereupon the Company shall execute, and the Trustee or its agent shall authenticate and deliver, without service charge, (1) to each Person specified by

such Depository a new Security or Securities of the same series of like tenor and terms and of any authorized denomination as requested by such Person in aggregate principal amount equal to and in exchange for such Person's beneficial interest as specified by such Depository in the Global Security; and (2) to such Depository a new Global Security of like tenor and terms and in an authorized denomination equal to the difference, if any, between the principal amount of the surrendered Global Security and the aggregate principal amount of Securities delivered to Holders thereof.

(iv) In any exchange provided for in any of the preceding three paragraphs, the Company will execute and the Trustee or its agent will authenticate and deliver individual Securities in definitive registered form in authorized denominations. Upon the exchange of the entire principal amount of a Global Security for individual Securities, such Global Security shall be canceled by the Trustee or its agent. Except as provided in the preceding paragraph, Securities issued in exchange for a Global Security pursuant to this Section shall be registered in such names and in such authorized denominations as the Depository for such Global Security, pursuant to instructions from its direct or indirect participants or otherwise, shall instruct the Trustee or the Security Registrar. The Trustee or the Security Registrar shall deliver at its Corporate Trust Office such Securities to the Persons in whose names such Securities are so registered.

ARTICLE 3. THE SECURITIES

SECTION 3.01 General Title; General Limitations; Issuable in Series; Terms of Particular Series.

The aggregate principal amount of Securities which may be authenticated and delivered and Outstanding under this Indenture is not limited.

The Securities may be issued in one or more series as from time to time may be authorized by the Board of Directors. There shall be established in or pursuant to a Board Resolution or in a supplemental indenture, subject to Section 3.11, prior to the issuance of Securities of any such series:

- (1) the title of the Securities of such series (which shall distinguish the Securities of such series from Securities of any other series);
- (2) the Person to whom any interest on a Security of such series shall be payable, if other than the Person in whose name that Security (or one or more Predecessor Securities) is registered at the close of business on the Regular Record Date for such interest;
- (3) the date or dates on which the principal of the Securities of such series is payable;

- (4) the public offering price of such Securities;
- (5) the rate or rates at which the Securities of such series shall bear interest, if any, the date or dates from which such interest shall accrue, the Interest Payment Dates on which any such interest shall be payable and the Regular Record Date for any interest payable on any Interest Payment Date;
- (6) the index used to determine any payments to be made on the Securities;
- (7) the place or places where the principal of and any premium and interest on Securities of such series shall be payable;
- (8) the period or periods within which, the Redemption Price or Prices or the Repayment Price or Prices, as the case may be, at which, and the terms and conditions upon which, Securities of such series may be redeemed or repaid, as the case may be, in whole or in part, at the option of the Company or the Holder;
- (9) the obligation, if any, of the Company to purchase Securities of such series pursuant to any sinking fund or analogous provisions or at the option of a Holder thereof and the period or periods within which, the price or prices at which and the terms and conditions upon which Securities of such series shall be purchased, in whole or in part, pursuant to such obligation;
- (10) if other than denominations of \$1,000 and any integral multiple thereof, the denominations in which Securities of such series shall be issuable;
- (11) any limit upon the aggregate principal amount of the Securities of such series which may be authenticated and delivered under this Indenture (except for Securities authenticated and delivered upon registration of transfer of, or in exchange for, or in lieu of, other Securities of such series pursuant to Section 3.04, 3.05, 3.06, 9.06 or 11.07 and except for any Securities which, pursuant to Section 3.03, are deemed never to have been authenticated and delivered hereunder);
- (12) provisions, if any, with regard to the exchange of Securities of such series, at the option of the Holders thereof, for other Securities of the same series or the same aggregate principal amount or of a different authorized series or different authorized denomination or denominations, or both;
- (13) provisions, if any, with regard to the appointment by the Company of an Authenticating Agent in one or more places other than the location of the office of the Trustee with power to act on behalf of the Trustee and subject to its direction in the authentication and delivery of the Securities of any one or more series in connection with such transactions as shall be specified in the provisions of this Indenture or in or pursuant to such Board Resolution or supplemental indenture;

(14) the portion of the principal amount of Securities of the series, if other than the principal amount thereof, which shall be payable upon declaration of acceleration of the Maturity thereof pursuant to Section 5.02 or provable in bankruptcy pursuant to Section 5.04;

(15) any Event of Default with respect to the Securities of such series, if not set forth herein, and any additions, deletions or other changes to the Events of Default set forth herein that shall be applicable to the Securities of such series;

(16) any covenant solely for the benefit of the Securities of such series and any additions, deletions or other changes to the provisions of Article 10 or Section 1.01 or any definitions relating to such Article that would otherwise be applicable to the Securities of such series;

(17) if Section 4.03 of this Indenture shall not be applicable to the Securities of such series and if Section 4.03 shall be applicable to any covenant or Event of Default established in or pursuant to a Board Resolution or in a supplemental indenture as described above that has not already been established herein;

(18) if the Securities of such series shall be issued in whole or in part in the form of a Global Security or Securities, the terms and conditions, if any, upon which such Global Security or Securities may be exchanged in whole or in part for other individual Securities; and the Depository for such Global Security or Securities; and

(19) any other terms of such series;

all upon such terms as may be determined in or pursuant to such Board Resolution or supplemental indenture with respect to such series.

The form of the Securities of each series shall be established pursuant to the provisions of this Indenture in or pursuant to the Board Resolution or in the supplemental indenture creating such series. The Securities of each series shall be distinguished from the Securities of each other series in such manner, reasonably satisfactory to the Trustee, as the Board of Directors may determine.

Unless otherwise provided with respect to Securities of a particular series, the Securities of any series may only be issuable in registered form, without coupons.

Any terms or provisions in respect of the Securities of any series issued under this Indenture may be determined pursuant to this Section by providing for the method by which such terms or provisions shall be determined.

SECTION 3.02 Denominations.

The Securities of each series shall be issuable in such denominations and currency as shall be provided in the provisions of this Indenture or in or pursuant to the Board Resolution or the supplemental indenture creating such series. In the absence of any such provisions with respect

to the Securities of any series, the Securities of that series shall be issuable only in fully registered form in denominations of \$1,000 and any integral multiple thereof.

SECTION 3.03 Execution, Authentication and Delivery and Dating.

The Securities shall be executed on behalf of the Company by its Chairman of the Board, its Chief Executive Officer, its Chief Financial Officer, one of its Vice Presidents or its Treasurer under its corporate seal reproduced thereon and attested by its Secretary or one of its Assistant Secretaries. The signature of any of these officers or secretaries on the Securities may be manual or facsimile.

Securities bearing the manual or facsimile signatures of individuals who were at any time the proper officers of the Company shall bind the Company, notwithstanding that such individuals or any of them have ceased to hold such offices prior to the authentication and delivery of such Securities or did not hold such offices at the date of such Securities.

At any time and from time to time after the execution and delivery of this Indenture, the Company may deliver Securities executed by the Company to the Trustee for authentication; and the Trustee shall, upon Company Order, authenticate and deliver such Securities as in this Indenture provided and not otherwise.

Prior to any such authentication and delivery, and unless otherwise provided for or required under any supplemental indenture, the Trustee shall be entitled to receive, in addition to any Officers' Certificate and Opinion of Counsel required to be furnished to the Trustee pursuant to Section 1.02, and the Board Resolution and any certificate relating to the issuance of the series of Securities required to be furnished pursuant to Section 2.02, an Opinion of Counsel stating that:

- (1) all instruments furnished to the Trustee conform to the requirements of the Indenture and constitute sufficient authority hereunder for the Trustee to authenticate and deliver such Securities;
- (2) the form and terms of such Securities have been established in conformity with the provisions of this Indenture;
- (3) all laws and requirements with respect to the execution and delivery by the Company of such Securities have been complied with, the Company has the corporate power to issue such Securities and such Securities have been duly authorized and delivered by the Company and, assuming due authentication and delivery by the Trustee, constitute legal, valid and binding obligations of the Company enforceable in accordance with their terms (subject, as to enforcement of remedies, to applicable bankruptcy, reorganization, insolvency, moratorium or other laws and legal principles affecting creditors' rights generally from time to time in effect and to general equitable principles, whether applied in an action at law or in equity) and entitled to the benefits of this Indenture, equally and ratably with all other Securities, if any, of such series Outstanding;
- (4) the Indenture is qualified under the Trust Indenture Act; and

(5) such other matters as the Trustee may reasonably request;

and, if the authentication and delivery relates to a new series of Securities created by an indenture supplemental hereto, also stating that all laws and requirements with respect to the form and execution by the Company of the supplemental indenture with respect to that series of Securities have been complied with, the Company has corporate power to execute and deliver any such supplemental indenture and has taken all necessary corporate action for those purposes and any such supplemental indenture has been executed and delivered by the Company and, assuming due execution and delivery by the Trustee, constitutes the legal, valid and binding obligation of the Company enforceable in accordance with its terms (subject, as to enforcement of remedies, to applicable bankruptcy, reorganization, insolvency, moratorium or other laws and legal principles affecting creditors' rights generally from time to time in effect and to general equitable principles, whether applied in an action at law or in equity).

The Trustee shall not be required to authenticate such Securities if the issue thereof will adversely affect the Trustee's own rights, duties or immunities under the Securities and this Indenture.

Unless otherwise provided in the form of Security for any series, all Securities shall be dated the date of their authentication.

No Security shall be entitled to any benefit under this Indenture or be valid or obligatory for any purpose unless there appears on such Security a certificate of authentication substantially in the form provided for herein executed by the Trustee by manual signature, and such certificate upon any Security shall be conclusive evidence, and the only evidence, that such Security has been duly authenticated and delivered hereunder. Notwithstanding the foregoing, if any Security shall have been authenticated and delivered hereunder but never issued and sold by the Company, and the Company shall deliver such Security to the Trustee for cancellation as provided in Section 3.09, for all purposes of this Indenture such Security shall be deemed never to have been authenticated and delivered hereunder and shall never be entitled to the benefits of this Indenture.

SECTION 3.04 Temporary Securities.

Pending the preparation of definitive Securities of any series, the Company may execute, and, upon receipt of the documents required by Section 3.03, together with a Company Order, the Trustee shall authenticate and deliver, temporary Securities which are printed, lithographed, typewritten, mimeographed or otherwise produced, in any authorized denomination, substantially of the tenor of the definitive Securities in lieu of which they are issued and with such appropriate insertions, omissions, substitutions and other variations as the officers executing such Securities may determine, as evidenced by their execution of such Securities.

If temporary Securities of any series are issued, the Company will cause definitive Securities of such series to be prepared without unreasonable delay. After the preparation of definitive Securities, the temporary Securities of such series shall be exchangeable for definitive Securities of such series upon surrender of the temporary Securities of such series at the office or agency of the Company in a Place of Payment, without charge to the Holder; and upon surrender

for cancellation of any one or more temporary Securities the Company shall execute and the Trustee shall authenticate and deliver in exchange therefor a like principal amount of definitive Securities of such series of authorized denominations and of like tenor and terms. Until so exchanged the temporary Securities of such series shall in all respects be entitled to the same benefits under this Indenture as definitive Securities of such series.

SECTION 3.05 Registration, Transfer and Exchange.

The Company shall keep or cause to be kept a register or registers (herein sometimes referred to as the “Security Register”) in which, subject to such reasonable regulations as it may prescribe, the Company shall provide for the registration of Securities, or of Securities of a particular series, and of transfers of Securities or of Securities of such series. Any such register shall be in written form or in any other form capable of being converted into written form within a reasonable time. At all reasonable times the information contained in such register or registers shall be available for inspection by the Trustee at the office or agency to be maintained by the Company as provided in Section 10.02. There shall be only one Security Register per series of Securities.

Subject to Section 2.04, upon surrender for registration of transfer of any Security of any series at the office or agency of the Company maintained for such purpose in a Place of Payment, the Company shall execute, and the Trustee shall authenticate and deliver, in the name of the designated transferee or transferees, one or more new Securities of such series of any authorized denominations, of a like aggregate principal amount and Stated Maturity and of like tenor and terms.

Subject to Section 2.04, at the option of the Holder, Securities of any series may be exchanged for other Securities of such series of any authorized denominations, of a like aggregate principal amount and Stated Maturity and of like tenor and terms, upon surrender of the Securities to be exchanged at such office or agency. Whenever any Securities are so surrendered for exchange, the Company shall execute, and the Trustee shall authenticate and deliver, the Securities which the Securityholder making the exchange is entitled to receive.

All Securities issued upon any registration of transfer or exchange of Securities shall be the valid obligations of the Company, evidencing the same debt, and entitled to the same benefits under this Indenture, as the Securities surrendered upon such registration of transfer or exchange.

Every Security presented or surrendered for registration of transfer or exchange shall (if so required by the Company or the Trustee) be duly endorsed, or be accompanied by a written instrument of transfer in form satisfactory to the Company and the Trustee, duly executed by the Holder thereof or his attorney duly authorized in writing.

Unless otherwise provided in the Security to be registered for transfer or exchange, no service charge shall be made on any Securityholder for any registration of transfer or exchange of Securities, but the Company may (unless otherwise provided in such Security) require payment of a sum sufficient to cover any tax or other governmental charge that may be imposed in connection with any registration of transfer or exchange of Securities, other than exchanges pursuant to Section 3.04, 9.06 or 11.07 not involving any transfer.

The Company shall not be required (i) to issue, register the transfer of or exchange any Security of any series during a period beginning at the opening of business 15 days before the day of the mailing of a notice of redemption of Securities of such series selected for redemption under Section 11.03 and ending at the close of business on the date of such mailing, or (ii) to register the transfer of or exchange any Security so selected for redemption in whole or in part.

None of the Company, the Trustee, any agent of the Trustee, any Paying Agent or the Security Registrar will have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial ownership interests of a Global Security or for maintaining, supervising or reviewing any records relating to such beneficial ownership interests.

SECTION 3.06 Mutilated, Destroyed, Lost and Stolen Securities.

If (i) any mutilated Security is surrendered to the Trustee, or the Company and the Trustee receive evidence to their satisfaction of the destruction, loss or theft of any Security, and (ii) there is delivered to the Company and the Trustee such Security or indemnity as may be required by them to save each of them harmless, then, in the absence of notice to the Company or the Trustee that such Security has been acquired by a protected purchaser, the Company shall execute and upon its written request the Trustee shall authenticate and deliver, in exchange for or in lieu of any such mutilated, destroyed, lost or stolen Security, a new Security of like tenor, series, Stated Maturity and principal amount, bearing a number not contemporaneously outstanding.

In case any such mutilated, destroyed, lost or stolen Security has become or is about to become due and payable, the Company in its discretion may, instead of issuing a new Security, pay such Security.

Upon the issuance of any new Security under this Section, the Company may require the payment of a sum sufficient to cover any tax or other governmental charge that may be imposed in relation thereto and any other expenses (including the fees and expenses of the Trustee) connected therewith.

Every new Security issued pursuant to this Section in lieu of any destroyed, lost or stolen Security shall constitute an original additional contractual obligation of the Company, whether or not the destroyed, lost or stolen Security shall be at any time enforceable by anyone, and shall be entitled to all the benefits of this Indenture equally and proportionately with any and all other Securities of the same series duly issued hereunder.

The provisions of this Section are exclusive and shall preclude (to the extent lawful) all other rights and remedies with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities.

SECTION 3.07 Payment of Interest; Interest Rights Preserved.

Unless otherwise provided with respect to such Security pursuant to Section 3.01, interest on any Security which is payable, and is punctually paid or duly provided for, on any Interest

Payment Date shall be paid to the Person in whose name that Security (or one or more Predecessor Securities) is registered at the close of business on the Regular Record Date for such interest.

Any interest on any Security which is payable, but is not punctually paid or duly provided for, on any Interest Payment Date (herein called "Defaulted Interest") shall forthwith cease to be payable to the registered Holder on the relevant Regular Record Date by virtue of his having been such Holder; and, except as hereinafter provided, such Defaulted Interest may be paid by the Company, at its election in each case, as provided in Clause (1) or Clause (2) below:

(1) The Company may elect to make payment of any Defaulted Interest to the Persons in whose names any such Securities (or their respective Predecessor Securities) are registered at the close of business on a Special Record Date for the payment of such Defaulted Interest, which shall be fixed in the following manner. The Company shall notify the Trustee in writing of the amount of Defaulted Interest proposed to be paid on each such Security and the date of the proposed payment, and at the same time the Company shall deposit with the Trustee an amount of money equal to the aggregate amount proposed to be paid in respect of such Defaulted Interest or shall make arrangements satisfactory to the Trustee for such deposit prior to the date of the proposed payment, such money when deposited to be held in trust for the benefit of the Persons entitled to such Defaulted Interest as in this Clause provided. Thereupon the Trustee shall fix a Special Record Date for the payment of such Defaulted Interest which shall be not more than 15 nor less than 10 days prior to the date of the proposed payment and not less than 10 days after the receipt by the Trustee of the notice of the proposed payment. The Trustee shall promptly notify the Company of such Special Record Date and, in the name and at the expense of the Company, shall cause notice of the proposed payment of such Defaulted Interest and the Special Record Date therefor to be mailed, first class postage prepaid, to the Holder of each such Security at his address as it appears in the Security Register, not less than 10 days prior to such Special Record Date. Notice of the proposed payment of such Defaulted Interest and the Special Record Date therefor having been mailed as aforesaid, such Defaulted Interest shall be paid to the Persons in whose names such Securities (or their respective Predecessor Securities) are registered on such Special Record Date and shall no longer be payable pursuant to the following Clause (2).

(2) The Company may make payment of any Defaulted Interest in any other lawful manner not inconsistent with the requirements of any securities exchange on which such Securities may be listed, and upon such notice as may be required by such exchange, if, after notice given by the Company to the Trustee of the proposed payment pursuant to this Clause, such manner of payment shall be deemed practicable by the Trustee.

If any installment of interest, the Stated Maturity of which is on or prior to the Redemption Date for any Security called for redemption pursuant to Article 11, is not paid or duly provided for on or prior to the Redemption Date in accordance with the foregoing provisions of this Section, such interest shall be payable as part of the Redemption Price of such Securities.

Subject to the foregoing provisions of this Section, each Security delivered under this Indenture upon registration of transfer of or in exchange for or in lieu of any other Security

shall carry the rights to interest accrued and unpaid, and to accrue, which were carried by such other Security.

SECTION 3.08 Persons Deemed Owners.

The Company, the Trustee and any agent of the Company or the Trustee may treat the Person in whose name any Security is registered as the owner of such Security for the purpose of receiving payment of principal of (and premium, if any), and (subject to Section 3.07) interest on, such Security and for all other purposes whatsoever, whether or not such Security be overdue, and neither the Company, the Trustee nor any agent of the Company or the Trustee shall be affected by notice to the contrary.

None of the Company, the Trustee, any Paying Agent or the Security Registrar will have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial ownership interests in a Global Security or for maintaining, supervising or reviewing any records relating to such beneficial ownership interests.

SECTION 3.09 Cancellation.

All Securities surrendered for payment, conversion, redemption, registration of transfer, exchange or credit against a sinking fund shall, if surrendered to any Person other than the Trustee, be delivered to the Trustee and, if not already canceled, shall be promptly canceled by it. The Company may at any time deliver to the Trustee for cancellation any Securities previously authenticated and delivered hereunder which the Company may have acquired in any manner whatsoever, and all Securities so delivered shall be promptly canceled by the Trustee. No Security shall be authenticated in lieu of or in exchange for any Securities canceled as provided in this Section, except as expressly permitted by this Indenture. The Trustee shall dispose of all canceled Securities in accordance with its standard procedures.

SECTION 3.10 Computation of Interest.

Unless otherwise provided as contemplated in Section 3.01, interest on the Securities shall be calculated on the basis of a 360-day year of twelve 30-day months.

SECTION 3.11 Delayed Issuance of Securities.

Notwithstanding any contrary provision herein, if all Securities of a series are not to be originally issued at one time, it shall not be necessary for the Company to deliver to the Trustee an Officers' Certificate, Board Resolution, supplemental indenture, Opinion of Counsel or Company Order otherwise required pursuant to Sections 1.02, 2.02, 3.01 and 3.03 at or prior to the time of authentication of each Security of such series if such documents are delivered to the Trustee or its agent at or prior to the authentication upon original issuance of the first Security of such series to be issued; provided that any subsequent request by the Company to the Trustee to authenticate Securities of such series upon original issuance shall constitute a representation and warranty by the Company that as of the date of such request, the statements made in the Officers' Certificate or

other certificates delivered pursuant to Sections 1.02 and 2.02 shall be true and correct as if made on such date.

A Company Order, Officers' Certificate or Board Resolution or supplemental indenture delivered by the Company to the Trustee in the circumstances set forth in the preceding paragraph may provide that Securities which are the subject thereof will be authenticated and delivered by the Trustee or its agent on original issue from time to time in the aggregate principal amount, if any, established for such series pursuant to such procedures acceptable to the Trustee as may be specified from time to time by Company Order upon the telephonic, electronic or written order of Persons designated in such Company Order, Officers' Certificate, supplemental indenture or Board Resolution (any such telephonic or electronic instructions to be promptly confirmed in writing by such Persons) and that such Persons are authorized to determine, consistent with such Company Order, Officers' Certificate, supplemental indenture or Board Resolution, such terms and conditions of said Securities as are specified in such Company Order, Officers' Certificate, supplemental indenture or Board Resolution.

SECTION 3.12 CUSIP Numbers.

The Company in issuing the Securities may use "CUSIP" numbers (if then generally in use), and, if so, the Trustee shall use "CUSIP" numbers in notices of redemption as a convenience to Holders; provided that any such notice may state that no representation is made as to the correctness of such numbers either as printed on the Securities or as contained in any notice of a redemption and that reliance may be placed only on the other identification numbers printed on the Securities, and any such redemption shall not be affected by any defect in or omission of such numbers. The Company will promptly notify the Trustee of any change in the "CUSIP" numbers.

ARTICLE 4.
SATISFACTION AND DISCHARGE

SECTION 4.01 Satisfaction and Discharge of Indenture.

This Indenture shall cease to be of further effect with respect to any series of Securities (except as to any surviving rights of conversion or registration of transfer or exchange of Securities of such series expressly provided for herein or in the form of Security for such series), and the Trustee, on receipt of a Company Request and at the expense of the Company, shall execute proper instruments acknowledging satisfaction and discharge of this Indenture as to such series, when:

(1) either

(A) all Securities of that series theretofore authenticated and delivered (other than (i) Securities of such series which have been destroyed, lost or stolen and which have been replaced or paid for as provided in Section 3.06, and (ii) Securities of such series for whose payment money in United States dollars has theretofore been deposited in trust or segregated and held in trust by the Company and thereafter repaid to the Company or

discharged from such trust, as provided in Section 10.03) have been delivered to the Trustee canceled or for cancellation; or

(B) all such Securities of that series not theretofore delivered to the Trustee canceled or for cancellation:

(i) have become due and payable, or

(ii) will become due and payable at their Stated Maturity within one year, or

(iii) are to be called for redemption within one year under arrangements satisfactory to the Trustee for the giving of notice of redemption by the Trustee in the name, and at the expense, of the Company,

and the Company, in the case of (i), (ii) or (iii) above, has irrevocably deposited or caused to be deposited with the Trustee as trust funds in trust for the purpose an amount sufficient to pay and discharge the entire indebtedness on such Securities not theretofore delivered to the Trustee canceled or for cancellation, for principal (and premium, if any) and interest to the date of such deposit (in the case of Securities which have become due and payable), or to the Stated Maturity or Redemption Date, as the case may be;

(2) the Company has paid or caused to be paid all other sums payable hereunder by the Company with respect to the Securities of such series; and

(3) the Company has delivered to the Trustee an Officers' Certificate and an Opinion of Counsel each stating that all conditions precedent herein provided for relating to the satisfaction and discharge of this Indenture with respect to the Securities of such series have been complied with.

Notwithstanding the satisfaction and discharge of this Indenture with respect to any series of Securities, the obligations of the Company to the Trustee with respect to that series under Section 6.07 shall survive and the obligations of the Company and the Trustee under Sections 3.05, 3.06, 4.02, 10.02 and 10.03 shall survive.

SECTION 4.02 Application of Trust Money.

Subject to the provisions of the last paragraph of Section 10.03, all money deposited with the Trustee pursuant to Section 4.01 or Section 4.03 shall be held in trust and applied by it, in accordance with the provisions of the series of Securities in respect of which it was deposited and this Indenture, to the payment, either directly or through any Paying Agent (including the Company acting as its own Paying Agent) as the Trustee may determine, to the Persons entitled thereto, of the principal (and premium, if any) and interest for whose payment such money has been deposited with the Trustee; but such money need not be segregated from other funds except to the extent required by law.

Anything herein to the contrary notwithstanding, the Trustee shall deliver or pay to the Company from time to time upon Company Request any money or securities deposited with and held by it as provided in Section 4.03 and this Section 4.02 which, in the opinion of a nationally recognized firm of independent public accountants expressed in a written certification thereof delivered to the Trustee, are in excess of the amount thereof which would then be required to be deposited to effect an equivalent satisfaction and discharge or covenant defeasance, provided that the Trustee shall not be required to liquidate any securities in order to comply with the provisions of this paragraph.

SECTION 4.03 Defeasance Upon Deposit of Funds or Government Obligations.

Unless pursuant to Section 3.01 provision is made that this Section shall not be applicable to the Securities of any series, at the Company's option, either (a) the Company shall be deemed to have been Discharged (as defined below) from its obligations with respect to any series of Securities after the applicable conditions set forth below have been satisfied or (b) the Company shall cease to be under any obligation to comply with any term, provision or condition set forth in Sections 10.04, 10.06 and 10.07 and Article 8 (and any other Sections or covenants applicable to such Securities that are determined pursuant to Section 3.01 to be subject to this provision), and clause (4) of Section 5.01 of this Indenture (and any other Events of Default applicable to such Securities that are determined pursuant to Section 3.01 to be subject to this provision) shall be deemed not to be an Event of Default, with respect to any series of Securities at any time after the applicable conditions set forth below have been satisfied:

(1) the Company shall have deposited or caused to be deposited irrevocably with the Trustee as trust funds in trust, specifically pledged as security for, and dedicated solely to the benefit of the Holders of the Securities of such series, money or the equivalent in securities of the United States government or government agencies backed by the full faith and credit of the United States government, or a combination thereof, which through the payment of interest thereon and principal thereof in accordance with their terms will provide funds in an amount sufficient, in the opinion of a nationally recognized firm of independent public accountants expressed in a written certification thereof, to pay and discharge each installment of principal (including mandatory sinking fund payments) and any premium of, interest on and any repurchase or redemption obligations with respect to the outstanding Securities of such series on the dates such installments of interest or principal or repurchase or redemption obligations are due (before such a deposit, if the Securities of such series are then redeemable or may be redeemed in the future pursuant to the terms thereof, in either case at the option of the Company, the Company may give to the Trustee, in accordance with Section 11.02, a notice of its election to redeem all of the Securities of such series at a future date in accordance with Article 11);

(2) no Event of Default or event (including such deposit) which with notice or lapse of time would become an Event of Default with respect to the Securities of such series shall have occurred and be continuing on the date of such deposit;

(3) the Company shall have delivered to the Trustee (A) an Opinion of Counsel to the effect that Holders of the Securities of such series will not recognize income,

gain or loss for federal income tax purposes as a result of the Company's exercise of its option under this Section 4.03 and will be subject to federal income tax on the same amount and in the same manner and at the same times as would have been the case if such option had not been exercised, and, in the case of Securities being Discharged, accompanied by a ruling to that effect from the Internal Revenue Service, unless, as set forth in such Opinion of Counsel, there has been a change in the applicable federal income tax law such that a ruling from the Internal Revenue Service is no longer required and (B) an Opinion of Counsel, subject to such qualifications, exceptions, assumptions and limitations as are reasonably deemed necessary by such counsel and are reasonably satisfactory to counsel for the Trustee, to the effect that the trust resulting from the deposit referred to in paragraph (1) above does not violate the Investment Company Act of 1940, as amended;

(4) the Company shall have delivered to the Trustee an Officers' Certificate stating that the deposit referred to in paragraph (1) above was not made by the Company with the intent of preferring the Holders over other creditors of the Company or with the intent of defeating, hindering, delaying or defrauding creditors of the Company or others; and

(5) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel each stating that all conditions precedent herein provided for relating to the satisfaction and discharge of this Indenture with respect to the Securities of such series have been complied with.

If the Company, at its option, with respect to a series of Securities, satisfies the applicable conditions pursuant to either clause (a) or (b) of the first sentence of this Section, then (x) in the event the Company satisfies the conditions to clause (a) and elects clause (a) to be applicable, each Guarantor shall be deemed to have paid and discharged the entire indebtedness represented by, and obligations under, its respective guarantee of the Securities of such series and to have satisfied all the obligations under this Indenture relating to the Securities of such series and (y) in either case, each Guarantor shall cease to be under any obligation to guarantee the Company's performance of its obligation to comply with any term, provision or limitation set forth in Sections 10.04, 10.06, and 10.07 and Article 8 (and any other covenants applicable to such Securities that are determined pursuant to Section 3.01 to be subject to this provision), and clause (4) of Section 5.01 (and any other Events of Default applicable to such series of Securities that are determined pursuant to Section 3.01 to be subject to this provision) shall be deemed not to be an Event of Default with respect to such series of Securities at any time thereafter.

"Discharged" means that the Company shall be deemed to have paid and discharged the entire indebtedness represented by, and obligations under, the Securities of such series and to have satisfied all the obligations under this Indenture relating to the Securities of such series (and the Trustee, on receipt of a Company Request and at the expense of the Company, shall execute proper instruments acknowledging the same), except (A) the rights of Holders of Securities to receive, from the trust fund described in clause (1) above, payment of the principal and any premium of and any interest on such Securities when such payments are due; (B) the Company's obligations with respect to such Securities under Sections 3.05, 3.06, 4.02, 6.07, 10.02 and 10.03; (C) the

Company's right of redemption, if any, with respect to any Securities of such series pursuant to Article 11, in which case the Company may redeem the Securities of such series in accordance with Article 11 by complying with such Article and depositing with the Trustee, in accordance with Section 11.05, an amount of money sufficient, together with all amounts held in trust pursuant to Section 4.02 with respect to Securities of such series, to pay the Redemption Price of all the Securities of such series to be redeemed; and (D) the rights, powers, trusts, duties and immunities of the Trustee hereunder.

SECTION 4.04 Reinstatement.

If the Trustee or Paying Agent is unable to apply any money or securities in accordance with Section 4.02 of this Indenture, by reason of any legal proceeding or by reason of any order or judgment of any court or governmental authority enjoining, restraining or otherwise prohibiting such application, the Company's and, if applicable, the Guarantors' obligations under this Indenture and the Securities shall be revived and reinstated as though no deposit had occurred pursuant to Section 4.01 or 4.03 of this Indenture, as the case may be, until such time as the Trustee or Paying Agent is permitted to apply all such money or securities in accordance with Section 4.02 of this Indenture; provided that, if the Company has made any payment of principal or interest on any Securities because of the reinstatement of its obligations, the Company shall be subrogated to the rights of the Holders of such Securities to receive such payment from the money or securities held by the Trustee or Paying Agent.

ARTICLE 5.
REMEDIES

SECTION 5.01 Events of Default.

"Event of Default", wherever used herein, means with respect to any series of Securities any one of the following events (whatever the reason for such Event of Default and whether it shall be voluntary or involuntary or be effected by operation of law or pursuant to any judgment, decree or order of any court or any order, rule or regulation of any administrative or governmental body), unless such event is either inapplicable to a particular series or it is specifically deleted or modified in or pursuant to the supplemental indenture or Board Resolution creating such series of Securities or in the form of Security for such series:

- (1) default in the payment of the principal of (or premium, if any, on) any Security of that series at its Maturity;
- (2) default in the payment of any interest upon any Security of that series when it becomes due and payable, and continuance of such default for a period of 30 days;
- (3) default in the payment of any sinking or purchase fund or analogous obligation when the same becomes due by the terms of the Securities of such series;

(4) default in the performance, or breach, of any covenant or warranty of the Company or any Guarantor in this Indenture in respect of the Securities of such series (other than a covenant or warranty in respect of the Securities of such series a default in the performance of which or the breach of which is elsewhere in this Section specifically dealt with), all of such covenants and warranties in the Indenture which are not expressly stated to be for the benefit of a particular series of Securities being deemed in respect of the Securities of all series for this purpose, and continuance of such default or breach for a period of 60 days after there has been given, by registered or certified mail, to the Company (or, if applicable, to such Guarantor) by the Trustee or to the Company (or, if applicable, to such Guarantor) and the Trustee by the Holders of at least 25% in aggregate principal amount of the Outstanding Securities of such series, a written notice specifying such default or breach and requiring it to be remedied and stating that such notice is a "Notice of Default" hereunder (other than a covenant or warranty a default in the performance of which, or the breach of which, would otherwise constitute an Event of Default);

(5) the entry of an order for relief against the Company or any Material Subsidiary thereof under Title 11, United States Code (the "Federal Bankruptcy Act") by a court having jurisdiction in the premises or a decree or order by a court having jurisdiction in the premises adjudging the Company or any Material Subsidiary thereof a bankrupt or insolvent under any other applicable Federal or State law, or the entry of a decree or order approving as properly filed a petition seeking reorganization, arrangement, adjustment or composition of or in respect of the Company or any Material Subsidiary thereof under the Federal Bankruptcy Act or any other applicable Federal or State law, or appointing a receiver, liquidator, assignee, trustee, sequestrator (or other similar official) of the Company or any Material Subsidiary thereof or of any substantial part of its property, or ordering the winding up or liquidation of its affairs, and the continuance of any such decree or order unstayed and in effect for a period of 90 consecutive days;

(6) the consent by the Company or any Material Subsidiary thereof to the institution of bankruptcy or insolvency proceedings against it, or the filing by it of a petition or answer or consent seeking reorganization or relief under the Federal Bankruptcy Act or any other applicable federal or state law, or the consent by it to the filing of any such petition or to the appointment of a receiver, liquidator, assignee, trustee, sequestrator (or other similar official) of the Company or any Material Subsidiary thereof or of any substantial part of its property, or the making by it of an assignment for the benefit of creditors, or the admission by it in writing of its inability to pay its debts generally as they become due, or the taking of corporate action by the Company or any Material Subsidiary thereof in furtherance of any such action;

(7) any Guarantee by a Material Subsidiary shall for any reason cease to be, or be asserted in writing by any such Material Subsidiary or the Company not to be, in full force and effect, enforceable in accordance with its terms, except to the extent contemplated by this Indenture and any such Guarantee; and

(8) any other Event of Default provided in the supplemental indenture or Board Resolution under which such series of Securities is issued or in the form of Security for such series.

SECTION 5.02 Acceleration of Maturity; Rescission and Annulment.

If an Event of Default described in paragraph (1), (2), (3), (4) or (8) (if the Event of Default under paragraph (4) or (8) is with respect to less than all series of Securities then Outstanding) of Section 5.01 occurs and is continuing with respect to any series, then and in each and every such case, unless the principal of all the Securities of such series shall have already become due and payable, either the Trustee or the Holders of not less than 25% in aggregate principal amount of the Securities of such series then Outstanding hereunder (each such series acting as a separate class), by notice in writing to the Company (and to the Trustee if given by Holders), may declare the principal amount (or, if the Securities of such series are Original Issue Discount Securities, such portion of the principal amount as may be specified in the terms of that series) of all the Securities of such series and all accrued interest thereon to be due and payable immediately, and upon any such declaration the same shall become and shall be immediately due and payable, anything in this Indenture or in the Securities of such series contained to the contrary notwithstanding. If an Event of Default described in paragraph (4) or (8) (if the Event of Default under paragraph (4) or (8) is with respect to all series of Securities then Outstanding), of Section 5.01 occurs and is continuing, then and in each and every such case, unless the principal of all the Securities shall have already become due and payable, either the Trustee or the Holders of not less than 25% in aggregate principal amount of all the Securities then Outstanding hereunder (treated as one class), by notice in writing to the Company (and to the Trustee if given by Holders), may declare the principal amount (or, if any Securities are Original Issue Discount Securities, such portion of the principal amount as may be specified in the terms thereof) of all the Securities then Outstanding and all accrued interest thereon to be due and payable immediately, and upon any such declaration the same shall become and shall be immediately due and payable, anything in this Indenture or in the Securities contained to the contrary notwithstanding. If an Event of Default of the type set forth in paragraph (5) or (6) of Section 5.01 occurs and is continuing, the principal of and any interest on the Securities then outstanding shall become immediately due and payable.

At any time after such a declaration of acceleration has been made with respect to the Securities of any or all series, as the case may be, and before a judgment or decree for payment of the money due has been obtained by the Trustee as hereinafter in this Article provided, the Holders of a majority in principal amount of the outstanding Securities of such series, by written notice to the Company and the Trustee, may rescind and annul such declaration and its consequences if:

- (1) the Company has paid or deposited with the Trustee a sum sufficient to pay:
 - (A) all overdue installments of interest on the Securities of such series;
 - (B) the principal of (and premium, if any, on) any Securities of such series which have become due otherwise than by such declaration of acceleration, and interest

thereon at the rate or rates prescribed therefor by the terms of the Securities of such series, to the extent that payment of such interest is lawful;

(C) interest upon overdue installments of interest at the rate or rates prescribed therefor by the terms of the Securities of such series to the extent that payment of such interest is lawful; and

(D) all sums paid or advanced by the Trustee hereunder and the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel and all other amounts due the Trustee under Section 6.07; and

(2) all Events of Default with respect to such series of Securities, other than the nonpayment of the principal of the Securities of such series which have become due solely by such acceleration, have been cured or waived as provided in Section 5.13.

No such rescission shall affect any subsequent default or impair any right consequent thereon.

SECTION 5.03 Collection of Indebtedness and Suits for Enforcement by Trustee.

The Company covenants that if:

(1) default is made in the payment of any installment of interest on any Security of any series when such interest becomes due and payable;

(2) default is made in the payment of the principal of (or premium, if any, on) any Security at the Maturity thereof; or

(3) default is made in the payment of any sinking or purchase fund or analogous obligation when the same becomes due by the terms of the Securities of any series;

and any such default continues for any period of grace provided with respect to the Securities of such series, the Company will, upon demand of the Trustee, pay to it, for the benefit of the Holder of any such Security (or the Holders of any such series in the case of Clause (3) above), the whole amount then due and payable on any such Security (or on the Securities of any such series in the case of Clause (3) above) for principal (and premium, if any) and interest, with interest, to the extent that payment of such interest shall be legally enforceable, upon the overdue principal (and premium, if any) and upon overdue installments of interest, at such rate or rates as may be prescribed therefor by the terms of any such Security (or of Securities of any such series in the case of Clause (3) above); and, in addition thereto, such further amount as shall be sufficient to cover the costs and expenses of collection, including the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel and all other amounts due the Trustee under Section 6.07 except as a result of its negligence or bad faith.

If the Company fails to pay such amounts forthwith upon such demand, the Trustee, in its own name and as trustee of an express trust, may institute a judicial proceeding for the collection of the sums so due and unpaid, and may prosecute such proceeding to judgment or final decree,

and may enforce the same against the Company or any other obligor upon the Securities of such series and collect the money adjudged or decreed to be payable in the manner provided by law out of the property of the Company or any other obligor upon such Securities, wherever situated.

If an Event of Default with respect to any series of Securities occurs and is continuing, the Trustee may in its discretion proceed to protect and enforce its rights and the rights of the Holders of Securities of such series by such appropriate judicial proceedings as the Trustee shall deem most effectual to protect and enforce any such rights, whether for the specific enforcement of any covenant or agreement in this Indenture or in aid of the exercise of any power granted herein, or to enforce any other proper remedy.

SECTION 5.04 Trustee May File Proofs of Claim.

In case of the pendency of any receivership, insolvency, liquidation, bankruptcy, reorganization, arrangement, adjustment, composition or other judicial proceeding relative to the Company or any other obligor upon the Securities or the property of the Company or of such other obligor or their creditors, the Trustee (irrespective of whether the principal of the Securities shall then be due and payable as therein expressed or by declaration or otherwise and irrespective of whether the Trustee shall have made any demand on the Company for the payment of overdue principal or interest) shall be entitled and empowered, by intervention in such proceedings or otherwise:

(i) to file and prove a claim for the whole amount of principal (or portion thereof determined pursuant to Section 3.01(14) to be provable in bankruptcy) (and premium, if any) and interest owing and unpaid in respect of the Securities and to file such other papers or documents as may be necessary and advisable in order to have the claims of the Trustee (including any claim for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel and all other amounts due the Trustee under Section 6.07) and of the Securityholders allowed in such judicial proceeding; and

(ii) to collect and receive any moneys or other property payable or deliverable on any such claims and to distribute the same; and any receiver, assignee, trustee, liquidator, sequestrator (or other similar official) in any such judicial proceeding is hereby authorized by each Securityholder to make such payment to the Trustee and in the event that the Trustee shall consent to the making of such payments directly to the Securityholders, to pay to the Trustee any amount due to it for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, and any other amounts due the Trustee under Section 6.07 except as a result of its negligence or bad faith.

Nothing herein contained shall be deemed to authorize the Trustee to authorize or consent to or accept or adopt on behalf of any Securityholder, any plan of reorganization, arrangement, adjustment or composition affecting the Securities or the rights of any Holder thereof, or to authorize the Trustee to vote in respect of the claim of any, Securityholder in any such proceeding.

SECTION 5.05 Trustee May Enforce Claims Without Possession of Securities.

All rights of action and claims under this Indenture or the Securities of any series may be prosecuted and enforced by the Trustee without the possession of any of the Securities of such series or the production thereof in any proceeding relating thereto, and any such proceeding instituted by the Trustee shall be brought in its own name as trustee of an express trust, and any recovery of judgment shall, after provision for the payment of the reasonable compensation, expenses, disbursements and advances of the Trustee, its agent and counsel and any other amounts due the Trustee under Section 6.07, be for the ratable benefit of the Holders of the Securities of the series in respect of which such judgment has been recovered.

SECTION 5.06 Application of Money Collected.

Any money collected by the Trustee with respect to a series of Securities pursuant to this Article shall be applied in the following order, at the date or dates fixed by the Trustee and, in case of the distribution of such money on account of principal (or premium, if any) or interest, upon presentation of the Securities of such series and the notation thereon of the payment if only partially paid and upon surrender thereof if fully paid:

FIRST: To the payment of all amounts due the Trustee under Section 6.07 except as a result of its negligence or bad faith;

SECOND: To the payment of the amounts then due and unpaid upon the Securities of that series for principal (and premium, if any) and interest, in respect of which or for the benefit of which such money has been collected, ratably, without preference or priority of any kind, according to the amounts due and payable on such Securities for principal (and premium, if any) and interest, respectively; and

THIRD: To the Company or any other person lawfully entitled thereto as directed in writing by the Company.

SECTION 5.07 Limitation on Suits.

No Holder of any Security of any series shall have any right to institute any proceeding, judicial or otherwise, with respect to this Indenture, or for the appointment of a receiver or trustee, or for any other remedy hereunder, unless:

(1) such Holder has previously given written notice to the Trustee of a continuing Event of Default with respect to Securities of such series;

(2) the Holders of not less than 25% in aggregate principal amount of the Outstanding Securities of such series shall have made written request to the Trustee to institute proceedings in respect of such Event of Default in its own name as Trustee hereunder;

(3) such Holder or Holders have offered to the Trustee indemnity reasonably satisfactory to it against the costs, expenses and liabilities to be incurred in compliance with such request;

(4) the Trustee for 60 days after its receipt of such notice, request and offer of indemnity has failed to institute any such proceeding; and

(5) no direction inconsistent with such written request has been given to the Trustee during such 60-day period by the Holders of a majority in principal amount of the Outstanding Securities of such series;

it being understood and intended that no one or more Holders of Securities of such series shall have any right in any manner whatever by virtue of, or by availing of, any provision of this Indenture to affect, disturb or prejudice the rights of any other Holders of Securities of such series, or to obtain or to seek to obtain priority or preference over any other such Holders or to enforce any right under this Indenture, except in the manner herein provided and for the equal and proportionate benefit of all the Holders of all Securities of such series.

SECTION 5.08 Unconditional Right of Securityholders To Receive Principal, Premium and Interest.

Notwithstanding any other provisions in this Indenture, the Holder of any Security shall have the right, which is absolute and unconditional, to receive payment of the principal of (and premium, if any) and (subject to Section 3.07) interest on such Security on the respective Stated Maturities expressed in such Security (or, in the case of redemption or repayment, on the Redemption Date or Repayment Date, as the case may be) and to institute suit for the enforcement of any such payment, and such right shall not be impaired without the consent of such Holder.

SECTION 5.09 Restoration of Rights and Remedies.

If the Trustee or any Securityholder has instituted any proceeding to enforce any right or remedy under this Indenture and such proceeding has been discontinued or abandoned for any reason, then and in every such case the Company, the Trustee and the Securityholders shall, subject to any determination in such proceeding, be restored severally and respectively to their former positions hereunder, and thereafter all rights and remedies of the Trustee and the Securityholders shall continue as though no such proceeding had been instituted.

SECTION 5.10 Rights and Remedies Cumulative.

No right or remedy herein conferred upon or reserved to the Trustee or to the Securityholders is intended to be exclusive of any other right or remedy, and every right and remedy shall, to the extent permitted by law, be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent assertion or employment of any other appropriate right or remedy.

SECTION 5.11 Delay or Omission Not Waiver.

No delay or omission of the Trustee or of any Holder of any Security to exercise any right or remedy accruing upon any Event of Default shall impair any such right or remedy or constitute a waiver of any such Event of Default or an acquiescence therein. Every right and remedy given by this Article or by law to the Trustee or to the Securityholders may be exercised from time to time, and as often as may be deemed expedient, by the Trustee or by the Securityholders, as the case may be.

SECTION 5.12 Control by Securityholders.

The Holders of a majority in aggregate principal amount of the Outstanding Securities of any series shall have the right to direct the time, method and place of conducting any proceeding for any remedy available to the Trustee or exercising any trust or power conferred on the Trustee with respect to the Securities of such series, provided that:

(1) the Trustee shall have the right to decline to follow any such direction if the Trustee, being advised by counsel, determines that the action so directed may not lawfully be taken or would conflict with this Indenture or if the Trustee in good faith shall, by a Responsible Officer, determine that the proceedings so directed would involve it in personal liability or be unjustly prejudicial to the Holders not taking part in such direction; and

(2) the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction.

SECTION 5.13 Waiver of Past Defaults.

The Holders of not less than a majority in principal amount of the Outstanding Securities of any series may on behalf of the Holders of all the Securities of such series waive any past default hereunder with respect to such series and its consequences, except a default not theretofore cured:

(1) in the payment of the principal of (or premium, if any) or interest on any Security of such series, or in the payment of any sinking or purchase fund or analogous obligation with respect to the Securities of such series; or

(2) in respect of a covenant or provision hereof which under Article 9 cannot be modified or amended without the consent of the Holder of each Outstanding Security of such series.

Upon any such waiver, such default shall cease to exist, and any Event of Default arising therefrom shall be deemed to have been cured, for every purpose of this Indenture; but no such waiver shall extend to any subsequent or other default or impair any right consequent thereon.

SECTION 5.14 Undertaking for Costs.

All parties to this Indenture agree, and each Holder of any Security by his acceptance thereof shall be deemed to have agreed, that any court may in its discretion require, in any suit for the enforcement of any right or remedy under this Indenture, or in any suit against the Trustee for any action taken or omitted by it as Trustee, the filing by any party litigant in such suit of an undertaking to pay the costs of such suit, and that such court may in its discretion assess reasonable costs, including reasonable attorneys' fees and expenses, against any party litigant in such suit, having due regard to the merits and good faith of the claims or defenses made by such party litigant; but the provisions of this Section shall not apply to any suit instituted by the Trustee, to any suit instituted by any Securityholder, or group of Securityholders, holding in the aggregate more than 10% in principal amount of the Outstanding Securities of any series to which the suit relates, or to any suit instituted by any Securityholder for the enforcement of the payment of the principal of (or premium, if any) or interest on a Security on or after the respective Stated Maturities expressed in such Security (or, in the case of redemption or repayment, on or after the Redemption Date or Repayment Date, as the case may be).

SECTION 5.15 Waiver of Stay or Extension Laws.

The Company covenants (to the extent that it may lawfully do so) that it will not at any time insist upon, or plead, or in any manner whatsoever claim or take the benefit or advantage of, any stay or extension law wherever enacted, now or at any time hereafter in force, which may affect the covenants or the performance of this Indenture; and the Company (to the extent that it may lawfully do so) hereby expressly waives all benefit or advantage of any such law, and covenants that it will not hinder, delay or impede the execution of any power herein granted to the Trustee, but will suffer and permit the execution of every such power as though no such law had been enacted.

ARTICLE 6.
THE TRUSTEE

SECTION 6.01 Certain Duties and Responsibilities.

(a) Except during the continuance of an Event of Default with respect to any series of Securities:

(1) the Trustee undertakes to perform such duties and only such duties as are specifically set forth in this Indenture with respect to the Securities of such series, and no implied covenants or obligations shall be read into this Indenture against the Trustee; and

(2) in the absence of bad faith on its part, the Trustee may, with respect to Securities of such series, conclusively rely, as to the truth of the statements and the correctness of the opinions expressed therein, upon certificates or opinions furnished to the Trustee and conforming to the requirements of this Indenture; but in the case of any such certificates or opinions which by any provision hereof are specifically required to be

furnished to the Trustee, the Trustee shall be under a duty to examine the same to determine whether or not they conform to the requirements of this Indenture.

(b) In case an Event of Default with respect to any series of Securities has occurred and is continuing, the Trustee shall exercise with respect to the Securities of such series such of the rights and powers vested in it by this Indenture, and use the same degree of care and skill in their exercise, as a prudent person would exercise or use under the circumstances in the conduct of his or her own affairs.

(c) No provision of this Indenture shall be construed to relieve the Trustee from liability for its own negligent action, its own negligent failure to act, or its own willful misconduct, except that:

(1) this Subsection shall not be construed to limit the effect of Subsection (a) of this Section;

(2) the Trustee shall not be liable for any error of judgment made in good faith by a Responsible Officer, unless it shall be proved that the Trustee was negligent in ascertaining the pertinent facts;

(3) the Trustee shall not be liable with respect to any action taken or omitted to be taken by it in good faith in accordance with the direction of the Holders of a majority in principal amount of the Outstanding Securities of any series relating to the time, method and place of conducting any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred upon the Trustee, under this Indenture with respect to the Securities of such series; and

(4) no provision of this Indenture shall require the Trustee to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties hereunder, or in the exercise of any of its rights or powers, if it shall have reasonable grounds for believing that repayment of such funds or adequate indemnity against such risk or liability is not reasonably assured to it.

(d) Whether or not therein expressly so provided, every provision of this Indenture relating to the conduct or affecting the liability of or affording protection to the Trustee shall be subject to the provisions of this Section.

SECTION 6.02 Notice of Defaults.

Within 90 days after the occurrence of any default hereunder with respect to Securities of any series, the Trustee shall transmit by mail to all Securityholders of such series, as their names and addresses appear in the Security Register, notice of such default hereunder known to the Trustee, unless such default shall have been cured or waived; provided, however, that, except in the case of a default in the payment of the principal of (or premium, if any) or interest on any Security of such series or in the payment of any sinking or purchase fund installment or analogous obligation with respect to Securities of such series, the Trustee shall be protected in withholding

such notice if and so long as the board of directors, the executive committee or a trust committee of directors and/or Responsible Officers of the Trustee in good faith determine that the withholding of such notice is in the interests of the Securityholders of such series; and provided, further, that in the case of any default of the character specified in Section 5.01(4) with respect to Securities of such series no such notice to Securityholders of such series shall be given until at least 90 days after the occurrence thereof. For the purpose of this Section, the term “default,” with respect to Securities of any series, means any event which is, or after notice or lapse of time or both would become, an Event of Default with respect to Securities of such series.

SECTION 6.03 Certain Rights of Trustee.

Except as otherwise provided in Section 6.01:

(a) the Trustee may conclusively rely and shall be protected in acting or refraining from acting upon any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture or other paper or document believed by it to be genuine and to have been signed or presented by the proper party or parties;

(b) any request or direction of the Company mentioned herein shall be sufficiently evidenced by a Company Request or Company Order and any resolution of the Board of Directors may be sufficiently evidenced by a Board Resolution;

(c) whenever in the administration of this Indenture the Trustee shall deem it desirable that a matter be proved or established prior to taking, suffering or omitting any action hereunder, the Trustee (unless other evidence be herein specifically prescribed) may, in the absence of bad faith on its part, rely upon an Officers' Certificate;

(d) the Trustee may consult with counsel of its selection and the advice of such counsel or an Opinion of Counsel shall be full and complete authorization and protection in respect of any action taken, suffered or omitted by it hereunder in good faith and in reliance thereon;

(e) the Trustee shall be under no obligation to exercise any of the rights or powers vested in it by this Indenture at the request or direction of any of the Securityholders pursuant to this Indenture, unless such Securityholders shall have offered to the Trustee security or indemnity reasonably satisfactory to it against the costs, expenses and liabilities which might be incurred by it in compliance with such request or direction;

(f) the Trustee shall not be bound to make any investigation into the facts or matters stated in any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture or other paper or document, but the Trustee, in its discretion, may make such further inquiry or investigation into such facts or matters as it may see fit, and, if the Trustee shall determine to make such further inquiry or investigation, it shall be entitled to examine the books, records and premises of the Company, personally or by agent or attorney;

(g) the Trustee may execute any of the trusts or powers hereunder or perform any duties hereunder either directly or by or through agents or attorneys and the Trustee shall not be responsible for any misconduct or negligence on the part of any agent or attorney appointed with due care by it hereunder;

(h) the Trustee shall not be charged with knowledge of any default (as defined in Section 6.02) or Event of Default with respect to the Securities of any series for which it is acting as Trustee unless either (1) a Responsible Officer of the Trustee shall have actual knowledge of such default or Event of Default or (2) written notice of such default or Event of Default shall have been given to a Responsible Officer of the Trustee by the Company or any other obligor on such Securities or by any Holder of such Securities;

(i) the Trustee shall not be liable for any action taken, suffered or omitted by it in good faith and believed by it to be authorized or within the discretion or rights or powers conferred upon it by this Indenture; provided, however, that the Trustee's conduct does not constitute willful misconduct or negligence;

(j) the rights, privileges, protections, immunities and benefits given to the Trustee, including, without limitation, its right to be indemnified, are extended to, and shall be enforceable by, the Trustee in each of its capacities hereunder, and each agent, custodian and other Person employed to act hereunder; and

(k) the Trustee may request that the Company deliver an Officers' Certificate setting forth the names of individuals or titles of officers authorized at such time to take specified actions pursuant to this Indenture, which Officers' Certificate may be signed by a person authorized to sign an Officers' Certificate, including any person specified as so authorized in any such certificate previously delivered and not superseded.

SECTION 6.04 Not Responsible for Recitals or Issuance of Securities.

The recitals contained herein and in the Securities, except the certificates of authentication, shall be taken as the statements of the Company, and the Trustee assumes no responsibility for their correctness. The Trustee makes no representations as to the validity or sufficiency of this Indenture or of the Securities. The Trustee shall not be accountable for the use or application by the Company of Securities or the proceeds thereof.

SECTION 6.05 May Hold Securities.

The Trustee, any Authenticating Agent, any Paying Agent, the Security Registrar or any other agent of the Company, in its individual or any other capacity, may become the owner or pledgee of Securities and, subject to Sections 6.08 and 6.13, may otherwise deal with the Company or any Guarantor with the same rights it would have if it were not Trustee, Authenticating Agent, Paying Agent, Security Registrar or such other agent.

SECTION 6.06 Money Held in Trust.

Subject to the provisions of Section 10.03 hereof, all moneys in United States dollars received by the Trustee shall, until used or applied as herein provided, be held in trust for the purposes for which they were received, but need not be segregated from other funds except to the extent required by law. The Trustee shall be under no liability for interest on any money received by it hereunder except as otherwise agreed in writing with the Company.

SECTION 6.07 Compensation and Reimbursement.

The Company agrees:

(1) to pay to the Trustee from time to time such compensation as the Company and the Trustee shall agree in writing for all services rendered by it hereunder (which compensation shall not be limited by any provision of law in regard to the compensation of a trustee of an express trust);

(2) except as otherwise expressly provided herein, to reimburse the Trustee upon its request for all reasonable expenses, disbursements and advances incurred or made by the Trustee in accordance with any provision of this Indenture (including the reasonable compensation and the expenses and disbursements of its agents and counsel), except any such expense, disbursement or advance as may be attributable to its negligence, willful misconduct or bad faith; and

(3) to indemnify each of the Trustee and any predecessor Trustee for, and to hold it harmless against, any and all loss, liability, damage, claim or expense, including taxes (other than taxes based on the income of the Trustee), incurred without negligence, willful misconduct or bad faith on its part, arising out of or in connection with the acceptance or administration of this trust, including the costs and expenses of defending itself against any claim (whether asserted by the Company, a Securityholder or any other Person) or liability in connection with the exercise or performance of any of its powers or duties hereunder.

As security for the performance of the obligations of the Company under this Section the Trustee shall have a lien prior to the Securities upon all property and funds held or collected by the Trustee as such, except funds held in trust for the payment of principal of (and premium, if any) or interest on particular Securities.

When the Trustee incurs expenses or renders services in connection with an Event of Default specified in Section 5.01(5) or (6), the expenses and the compensation for the services are intended to constitute expenses of administration under any bankruptcy law.

The Company's obligations under this Section 6.07 and any lien arising hereunder shall survive the resignation or removal of any Trustee, the discharge of the Company's obligations pursuant to Article 4 of this Indenture and/or the termination of this Indenture.

SECTION 6.08 Disqualification; Conflicting Interests.

The Trustee for the Securities of any series issued hereunder shall be subject to the provisions of Section 310(b) of the Trust Indenture Act during the period of time provided for therein. In determining whether the Trustee has a conflicting interest as defined in Section 310(b) of the Trust Indenture Act with respect to the Securities of any series, there shall be excluded from the operation of this Section 6.08 all other series under this Indenture. Nothing herein shall prevent the Trustee from filing with the Commission the application referred to in the second to last paragraph of Section 310(b) of the Trust Indenture Act.

SECTION 6.09 Corporate Trustee Required; Eligibility.

There shall at all times be a Trustee hereunder with respect to each series of Securities, which shall be either:

(i) a corporation organized and doing business under the laws of the United States of America or of any State, authorized under such laws to exercise corporate trust powers and subject to supervision or examination by Federal or State authority; or

(ii) a corporation or other Person organized and doing business under the laws of a foreign government that is permitted to act as Trustee pursuant to a rule, regulation or order of the Commission, authorized under such laws to exercise corporate trust powers, and subject to supervision or examination by authority of such foreign government or a political subdivision thereof substantially equivalent to supervision or examination applicable to United States institutional trustees;

in either case having a combined capital and surplus of at least \$50,000,000. If such corporation publishes reports of condition at least annually, pursuant to law or to the requirements of the aforesaid supervising or examining authority, then for the purposes of this Section, the combined capital and surplus of such corporation shall be deemed to be its combined capital and surplus as set forth in its most recent report of condition so published. Neither the Company nor any Person directly or indirectly controlling, controlled by, or under common control with the Company shall serve as trustee for the Securities of any series issued hereunder. If at any time the Trustee with respect to any series of Securities shall cease to be eligible in accordance with the provisions of this Section, it shall resign immediately in the manner and with the effect specified in Section 6.10.

SECTION 6.10 Resignation and Removal.

(a) No resignation or removal of the Trustee and no appointment of a successor Trustee pursuant to this Article shall become effective until the acceptance of appointment by the successor Trustee under Section 6.11.

(b) The Trustee may resign with respect to any series of Securities at any time by giving written notice thereof to the Company. If an instrument of acceptance by a successor Trustee shall not have been delivered to the Trustee within 30 days after the giving

of such notice of resignation, the resigning Trustee may petition, at the expense of the Company, any court of competent jurisdiction for the appointment of a successor Trustee.

(c) The Trustee may be removed with respect to any series of Securities at any time by Act of the Holders of a majority in principal amount of the outstanding Securities of that series, delivered to the Trustee and to the Company. If an instrument of acceptance by a successor Trustee shall not have been delivered to the Trustee within 30 days after the giving of such notice of removal, the Trustee being removed may petition, at the expense of the Company, any court of competent jurisdiction for the appointment of a successor Trustee.

(d) If at any time:

(1) the Trustee shall fail to comply with Section 310(b) of the Trust Indenture Act pursuant to Section 6.08 with respect to any series of Securities after written request therefor by the Company or by any Securityholder who has been a bona fide Holder of a Security of that series for at least six months, unless the Trustee's duty to resign is stayed in accordance with the provisions of Section 310(b) of the Trust Indenture Act;

(2) the Trustee shall cease to be eligible under Section 6.09 with respect to any series of Securities and shall fail to resign after written request therefor by the Company or by any such Securityholder;

(3) the Trustee shall become incapable of acting with respect to any series of Securities; or

(4) the Trustee shall be adjudged a bankrupt or insolvent or a receiver of the Trustee or of its property shall be appointed or any public officer shall take charge or control of the Trustee or of its property or affairs for the purpose of rehabilitation, conservation or liquidation;

then, in any such case, (i) the Company by a Board Resolution may remove the Trustee, with respect to the series, or in the case of Clause (4), with respect to all series, or (ii) subject to Section 5.14, any Securityholder who has been a bona fide Holder of a Security of such series for at least six months may, on behalf of himself and all others similarly situated, petition any court of competent jurisdiction for the removal of the Trustee and the appointment of a successor Trustee with respect to the series, or, in the case of Clause (4), with respect to all series.

(e) If the Trustee shall resign, be removed or become incapable of acting with respect to any series of Securities, or if a vacancy shall occur in the office of the Trustee with respect to any series of Securities for any cause, the Company, by Board Resolution, shall promptly appoint a successor Trustee for that series of Securities. If, within one year after such resignation, removal or incapacity, or the occurrence of such vacancy, a successor Trustee with respect to such series of Securities shall be appointed by Act of the Holders of a majority in principal amount of the Outstanding Securities of such series delivered to the Company and the retiring Trustee, the successor Trustee so appointed shall, forthwith upon

its acceptance of such appointment, become the successor Trustee with respect to such series and supersede the successor Trustee appointed by the Company with respect to such series. If no successor Trustee with respect to such series shall have been so appointed by the Company or the Securityholders of such series and accepted appointment in the manner hereinafter provided, subject to Section 5.14, any Securityholder who has been a bona fide Holder of a Security of that series for at least six months may, on behalf of himself and all others similarly situated, petition any court of competent jurisdiction for the appointment of a successor Trustee with respect to such series.

(f) The Company shall give notice of each resignation and each removal of the Trustee with respect to any series and each appointment of a successor Trustee with respect to any series by mailing written notice of such event by first-class mail, postage prepaid, to the Holders of Securities of that series as their names and addresses appear in the Security Register. Each notice shall include the name of the successor Trustee and the address of its principal Corporate Trust Office.

SECTION 6.11 Acceptance of Appointment by Successor.

Every successor Trustee appointed hereunder shall execute, acknowledge and deliver to the Company and to the predecessor Trustee an instrument accepting such appointment, and thereupon the resignation or removal of the predecessor Trustee shall become effective with respect to any series as to which it is resigning or being removed as Trustee, and such successor Trustee, without any further act, deed or conveyance, shall become vested with all the rights, powers, trusts and duties of the predecessor Trustee with respect to any such series; but, on request of the Company or the successor Trustee, such predecessor Trustee shall, upon payment of its reasonable charges, if any, execute and deliver an instrument transferring to such successor Trustee all the rights, powers and trusts of the predecessor Trustee, and shall duly assign, transfer and deliver to such successor Trustee all property and money held by such predecessor trustee hereunder with respect to all or any such series, subject nevertheless to its lien, if any, provided for in Section 6.07. Upon request of any such successor Trustee, the Company shall execute any and all instruments for more fully and certainly vesting in and confirming to such successor Trustee all such rights, powers and trusts.

In case of the appointment hereunder of a successor Trustee with respect to the Securities of one or more (but not all) series, the Company, the predecessor Trustee and each successor Trustee with respect to the Securities of any applicable series shall execute and deliver an indenture supplemental hereto which shall contain such provisions as shall be deemed necessary or desirable to confirm that all the rights, powers, trusts and duties of the predecessor Trustee with respect to the Securities of any series as to which the predecessor Trustee is not being succeeded shall continue to be vested in the predecessor Trustee, and shall add to or change any of the provisions of this Indenture as shall be necessary to provide for or facilitate the administration of the trusts hereunder by more than one Trustee, it being understood that nothing herein or in such supplemental indenture shall constitute such Trustees co-trustees of the same trust and that each such Trustee shall be Trustee of a trust or trusts hereunder separate and apart from any trust or trusts hereunder administered by any other such Trustee. No Trustee hereunder shall be personally liable by reason of any act or omission solely of any other Trustee hereunder.

No successor Trustee with respect to any series of Securities shall accept its appointment unless at the time of such acceptance such successor Trustee shall be qualified and eligible with respect to that series under this Article.

SECTION 6.12 Merger, Conversion, Consolidation or Succession to Business.

Any corporation into which the Trustee may be merged or converted or with which it may be consolidated, or any corporation resulting from any merger, conversion or consolidation to which the Trustee shall be a party, or any corporation succeeding to all or substantially all of the corporate trust business of the Trustee, shall be the successor of the Trustee hereunder, provided such corporation shall be otherwise qualified and eligible under this Article, without the execution or filing of any paper or any further act on the part of any of the parties hereto. In case any Securities shall have been authenticated, but not delivered, by the Trustee then in office, any successor by merger, conversion or consolidation to such authenticating Trustee may adopt such authentication and deliver the Securities so authenticated with the same effect as if such successor Trustee had itself authenticated such Securities.

SECTION 6.13 Preferential Collection of Claims Against Company.

The Trustee shall comply with TIA Section 311(a), excluding any creditor relationship listed in TIA Section 311(b). A Trustee who has resigned or been removed shall be subject to TIA Section 311(a) to the extent indicated.

SECTION 6.14 Appointment of Authenticating Agent.

At any time when any of the Securities remain Outstanding the Trustee, with the approval of the Company, may appoint an Authenticating Agent or Agents with respect to one or more series of Securities which shall be authorized to act on behalf of the Trustee to authenticate Securities of such series issued upon original issuance, exchange, registration of transfer or partial redemption thereof or pursuant to Section 3.06, and Securities so authenticated shall be entitled to the benefits of this Indenture and shall be valid and obligatory for all purposes as if authenticated by the Trustee hereunder. Wherever reference is made in this Indenture to the authentication and delivery of Securities by the Trustee or the Trustee's certificate of authentication, such reference shall be deemed to include authentication and delivery on behalf of the Trustee by an Authenticating Agent and a certificate of authentication executed on behalf of the Trustee by an Authenticating Agent. Each Authenticating Agent shall be acceptable to the Company and shall at all times be a corporation organized and doing business under the laws of the United States of America, any State thereof or the District of Columbia, authorized under such laws to act as an Authenticating Agent, having a combined capital and surplus of not less than \$50,000,000 and, if other than the Company itself, subject to supervision or examination by Federal or State authority. If such Authenticating Agent publishes reports of condition at least annually, pursuant to law or to the requirements of said supervising or examining authority, then for the purposes of this Section, the combined capital and surplus of such Authenticating Agent shall be deemed to be its combined capital and surplus as set forth in its most recent report of condition so published. If at any time an Authenticating Agent shall cease to be eligible in accordance with the provisions of this Section, such Authenticating Agent shall resign immediately in the manner and with the effect specified in this Section.

Any corporation into which an Authenticating Agent may be merged or converted or with which it may be consolidated, or any corporation resulting from any merger, conversion or consolidation to which such Authenticating Agent shall be a party, or any corporation succeeding to all or substantially all the corporate agency or corporate trust business of an Authenticating Agent, shall continue to be an Authenticating Agent, provided such corporation shall be otherwise eligible under this Section, without the execution or filing of any paper or any further act on the part of the Trustee or the Authenticating Agent.

An Authenticating Agent may resign at any time by giving written notice thereof to the Trustee and, if other than the Company, to the Company. The Trustee may at any time terminate the agency of an Authenticating Agent by giving written notice thereof to such Authenticating Agent and, if other than the Company, to the Company. Upon receiving such a notice of resignation or upon such a termination, or in case at any time such Authenticating Agent shall cease to be eligible in accordance with the provisions of this Section, the Trustee, with the approval of the Company, may appoint a successor Authenticating Agent which shall be acceptable to the Company and shall mail written notice of such appointment by first-class mail, postage prepaid, to all Holders of Securities of the series with respect to which such Authenticating Agent will serve, as their names and addresses appear in the Security Register. Any successor Authenticating Agent upon acceptance of its appointment hereunder shall become vested with all the rights, powers and duties of its predecessor hereunder, with like effect as if originally named as an Authenticating Agent. No successor Authenticating Agent shall be appointed unless eligible under the provisions of this Section.

The Company agrees to pay to each Authenticating Agent from time to time reasonable compensation for its services under this Section.

If an appointment with respect to one or more series is made pursuant to this Section, the Securities of such series may have endorsed thereon, in addition to the Trustee's certificate of authentication, an alternate certificate of authentication in the following form:

This is one of the Securities of the series designated therein referred to in the within-mentioned Indenture.
THE BANK OF NEW YORK, as Trustee

By: _____
As Authenticating Agent

By: _____
As Authorized Agent

ARTICLE 7.
SECURITYHOLDERS' LISTS AND REPORTS BY TRUSTEE AND COMPANY

SECTION 7.01 Company To Furnish Trustee Names and Addresses of Securityholders.

The Company will furnish or cause to be furnished to the Trustee:

(1) semi-annually, not more than 15 days after December 15 and June 15 in each year in such form as the Trustee may reasonably require, a list of the names and addresses of the Holders of Securities of each series as of such December 15 and June 15, as applicable; and

(2) at such other times as the Trustee may request in writing, within 30 days after the receipt by the Company of any such request, a list of similar form and content as of a date not more than 15 days prior to the time such list is furnished;

provided, however, that if and so long as the Trustee shall be the Security Registrar for Securities of a series, no such list need be furnished with respect to such series of Securities.

SECTION 7.02 Preservation of Information; Communications to Securityholders.

(a) The Trustee shall preserve, in as current a form as is reasonably practicable, the names and addresses of Holders of Securities contained in the most recent list furnished to the Trustee as provided in Section 7.01 and the names and addresses of Holders of Securities received by the Trustee in its capacity as Security Registrar, if so acting. The Trustee may destroy any list furnished to it as provided in Section 7.01 upon receipt of a new list so furnished.

(b) If three or more Holders of Securities of any series (hereinafter referred to as "applicants") apply in writing to the Trustee, and furnish to the Trustee reasonable proof that each such applicant has owned a Security of such series for a period of at least six months preceding the date of such application, and such application states that the applicants desire to communicate with other Holders of Securities of such series or with the Holders of all Securities with respect to their rights under this Indenture or under such Securities and is accompanied by a copy of the form of proxy or other communication which such applicants propose to transmit, then the Trustee shall, within five Business Days after the receipt of such application, at its election, either:

(i) afford such applicants access to the information preserved at the time by the Trustee in accordance with Section 7.02(a); or

(ii) inform such applicants as to the approximate number of Holders of Securities of such series or all Securities, as the case may be, whose names and addresses appear in the information preserved at the time by the Trustee in accordance with Section

7.02(a), and as to the approximate cost of mailing to such Securityholders the form of proxy or other communication, if any, specified in such application.

If the Trustee shall elect not to afford such applicants access to such information, the Trustee shall, upon the written request of such applicants, mail to each Holder of a Security of such series or to all Securityholders, as the case may be, whose names and addresses appear in the information preserved at the time by the Trustee in accordance with Section 7.02(a), a copy of the form of proxy or other communication which is specified in such request, with reasonable promptness after a tender to the Trustee of the material to be mailed and of payment, or provision for the payment, of the reasonable expenses of mailing, unless, within five days after such tender, the Trustee shall mail to such applicants and file with the Commission, together with a copy of the material to be mailed, a written statement to the effect that, in the opinion of the Trustee, such mailing would be contrary to the best interests of the Holders of Securities of such series or all Securityholders, as the case may be, or would be in violation of applicable law. Such written statement shall specify the basis of such opinion. If the Commission, after opportunity for a hearing upon the objections specified in the written statement so filed, shall enter an order refusing to sustain any of such objections or if, after the entry of an order sustaining one or more of such objections, the Commission shall find, after notice and opportunity for hearing, that all the objections so sustained have been met and shall enter an order so declaring, the Trustee shall mail copies of such material to all Securityholders of such series or all Securityholders, as the case may be, with reasonable promptness after the entry of such order and the renewal of such tender; otherwise the Trustee shall be relieved of any obligation or duty to such applicants respecting their application.

(c) Every Holder of Securities, by receiving and holding the same, agrees with the Company and the Trustee that neither the Company nor the Trustee shall be held accountable by reason of the disclosure of any such information as to the names and addresses of the Holders of Securities in accordance with Section 7.02(b), regardless of the source from which such information was derived, and that the Trustee shall not be held accountable by reason of mailing any material pursuant to a request made under Section 7.02(b).

SECTION 7.03 Reports by Trustee.

(a) Within 60 days after May 15 of each year commencing with the first May 15 after the issuance of Securities, the Trustee shall transmit by mail, at the Company's expense, to all Holders as their names and addresses appear in the Security Register, as provided in Trust Indenture Act Section 313(c), a brief report dated as of May 15 if required by, in accordance with and with respect to, the matters required by Trust Indenture Act Section 313(a).

(b) The Trustee shall transmit by mail, at the Company's expense, to all Holders as their names and addresses appear in the Security Register, as provided in Trust Indenture Act Section 313(c), a brief report in accordance with and with respect to the matters required by Trust Indenture Act Section 313(b).

(c) A copy of each such report shall, at the time of such transmission to Holders, be furnished to the Company and, in accordance with Trust Indenture Act Section

313(d), be filed by the Trustee with each stock exchange upon which the Securities are listed, and also with the Commission. The Company will promptly notify the Trustee when the Securities are listed on any stock exchange and of any delisting thereof.

SECTION 7.04 Reports by Company.

The Company shall file with the Trustee, and transmit to Holders, such information, documents and other reports, and such summaries thereof, as may be required pursuant to the Trust Indenture Act at the times and in the manner provided pursuant to such Act; provided that any such information, documents or reports required to be filed with the Commission pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 shall be filed with the Trustee within 15 days after the same is so required to be filed with the Commission. The Company also shall comply with the other provisions of Trust Indenture Act Section 314(a).

Delivery of such reports, information and documents to the Trustee is for informational purposes only and the Trustee's receipt of such shall not constitute constructive notice of any information contained therein or determinable from information contained therein, including the Company's compliance with any of its covenants hereunder (as to which the Trustee is entitled to rely exclusively on Officers' Certificates).

ARTICLE 8.
CONSOLIDATION, MERGER, CONVEYANCE OR TRANSFER

SECTION 8.01 Consolidation, Merger, Conveyance or Transfer on Certain Terms.

The Company shall not consolidate with or merge into any other Person or sell, lease, convey or transfer all or substantially all its properties and assets to any Person, if upon any such consolidation, merger, sale, lease, conveyance or transfer the Company is not the surviving corporation, unless:

(1) the Person formed by such consolidation or into which the Company is merged or the Person which acquires by sale, lease, conveyance or transfer all or substantially all the properties and assets of the Company shall be organized and existing under the laws of the United States of America or any State thereof or the District of Columbia, and shall expressly assume, by an indenture supplemental hereto, executed and delivered to the Trustee, in form satisfactory to the Trustee, the due and punctual payment of the principal of (and premium, if any) and interest, if any, on all the Securities and the performance of every covenant of this Indenture (as supplemented from time to time) on the part of the Company to be performed or observed;

(2) immediately after giving effect to such transaction, no Event of Default, and no event which, after notice or lapse of time, or both, would become an Event of Default, shall have happened and be continuing; and

(3) the Company has delivered to the Trustee an Officers' Certificate and an Opinion of Counsel each stating that such consolidation, merger, sale, lease, conveyance or transfer and such supplemental indenture comply with this Article and that all conditions precedent herein provided for relating to such transaction have been complied with.

In the event of any such consolidation, merger, sale, lease, conveyance or transfer the Company shall be discharged from all obligations and covenants under this Indenture and the Securities and the Company may be liquidated and dissolved.

SECTION 8.02 Successor Person Substituted.

Upon any consolidation or merger, or sale, lease, conveyance or transfer of all or substantially all the properties and assets of the Company in accordance with Section 8.01, and if required hereunder, the successor Person formed by such consolidation or into which the Company is merged or to which such sale, lease, conveyance or transfer is made shall succeed to, and be substituted for, and may exercise every right and power of, the Company under this Indenture with the same effect as if such successor had been named as the Company herein. In the event of any such conveyance or transfer, the Company as the predecessor shall be discharged from all obligations and covenants under this Indenture and the Securities, and the Company may be dissolved, wound up or liquidated at any time thereafter.

ARTICLE 9.
SUPPLEMENTAL INDENTURES

SECTION 9.01 Supplemental Indentures Without Consent of Securityholders.

Without the consent of the Holders of any Securities, the Company, when authorized by a Board Resolution, and the Trustee, at any time and from time to time, may enter into one or more indentures supplemental hereto, in form satisfactory to the Trustee, for any of the following purposes:

(1) to evidence the succession of another corporation or Person to the Company or any Guarantor and the assumption by any such successor of the covenants of the Company or any Guarantor herein and in the Securities or the Guarantees relating thereto;

(2) to add to the covenants of the Company or the Guarantors, or to surrender any right or power herein conferred upon the Company or the rights or powers of the Guarantors, for the benefit of the Holders of the Securities of any or all series (and if such covenants or the surrender of such right or power are to be for the benefit of less than all series of Securities, stating that such covenants are expressly being included or such surrenders are expressly being made solely for the benefit of one or more specified series);

(3) to cure any ambiguity, to correct or supplement any provision herein which may be inconsistent with any other provision herein, or to make any other provisions with respect to matters or questions arising under this Indenture; provided that any such

supplemental indenture shall not materially and adversely affect the interests of the Securityholders of any series;

(4) to add to this Indenture such provisions as may be expressly permitted by the TIA, excluding, however, the provisions referred to in Section 316(a)(2) of the TIA as in effect at the date as of which this instrument was executed or any corresponding provision in any similar federal statute hereafter enacted;

(5) to establish any form of Security, as provided in Article 2, to provide for the issuance of any series of Securities as provided in Article 3 and to set forth the terms thereof, and/or to add to the rights of the Holders of the Securities of any series;

(6) to evidence and provide for the acceptance of the appointment by another corporation as a successor Trustee hereunder with respect to one or more series of Securities and to add to or change any of the provisions of this Indenture as shall be necessary to provide for or facilitate the administration of the trusts hereunder by more than one Trustee pursuant to Section 6.11;

(7) to add any additional Events of Default in respect of the Securities of any or all series (and if such additional Events of Default are to be in respect of less than all series of Securities, stating that such Events of Default are expressly being included solely for the benefit of one or more specified series);

(8) to provide for the issuance of Securities in coupon as well as in fully registered form;

(9) to secure the Securities of any series pursuant to Section 10.06 or otherwise; or

(10) to evidence the addition of any Subsidiary of the Company as a Guarantor hereunder or the release of any Guarantor hereunder and any of its obligations hereunder in accordance with Article 12.

SECTION 9.02 Supplemental Indentures with Consent of Securityholders.

With the consent of the Holders of not less than a majority in principal amount of the Outstanding Securities of all series affected by such supplemental indenture or indentures (acting as one class), by Act of said Holders delivered to the Company and the Trustee (in accordance with Section 1.04 hereof), the Company, when authorized by a Board Resolution, and the Trustee may enter into an indenture or indentures supplemental hereto for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of this Indenture or of modifying in any manner the rights of the Holders of the Securities of each such series under this Indenture; provided, however, that no such supplemental indenture shall, without the consent of the Holder of each Outstanding Security affected thereby:

(1) change the Maturity of the principal of, or the Stated Maturity of any premium on, or any installment of interest on, any Security, or reduce the principal amount thereof or the interest or any premium thereon, or change the method of computing the amount of principal thereof or interest thereon on any date or change any Place of Payment where, or the coin or currency in which, any Security or any premium or interest thereon is payable, or impair the right to institute suit for the enforcement of any such payment on or after the Maturity or the Stated Maturity, as the case may be, thereof (or, in the case of redemption or repayment, on or after the Redemption Date or the Repayment Date, as the case may be);

(2) reduce the percentage in principal amount of the Outstanding Securities of any series, the consent of whose Holders is required for any such supplemental indenture, or the consent of whose Holders is required for any waiver of compliance with certain provisions of this Indenture or certain defaults hereunder and their consequences, provided for in this Indenture;

(3) modify any of the provisions of this Section, Section 5.13 or Section 10.08, except to increase any such percentage or to provide that certain other provisions of this Indenture cannot be modified or waived without the consent of the Holder of each Outstanding Security affected thereby;

(4) impair or adversely affect the right of any Holder to institute suit for the enforcement of any payment on, or with respect to, the Securities of any series on or after the Stated Maturity of such Securities (or in the case of redemption, on or after the Redemption Date); or

(5) amend or modify Article 12 of this Indenture in any manner adverse to the rights of the Holders of the Outstanding Securities of any series.

A supplemental indenture which changes or eliminates any covenant or other provision of this Indenture which has expressly been included solely for the benefit of one or more particular series of Securities, or which modifies the rights of the Holders of Securities of such series with respect to such covenant or other provision, shall be deemed not to affect the rights under this Indenture of Holders of Securities of any other series.

It shall not be necessary for any Act of Securityholders under this Section to approve the particular form of any proposed supplemental indenture, but it shall be sufficient if such Act shall approve the substance thereof.

SECTION 9.03 Execution of Supplemental Indentures.

In executing, or accepting the additional trusts created by, any supplemental indenture permitted by this Article or the modifications thereby of the trusts created by this Indenture, the Trustee shall receive, and (subject to Section 6.01) shall be fully protected in relying upon, an Opinion of Counsel stating that the execution of such supplemental indenture is authorized or permitted by this Indenture. The Trustee may, but shall not be obligated to, enter into any such

supplemental indenture which affects the Trustee's own rights, duties or immunities under this Indenture or otherwise.

SECTION 9.04 Effect of Supplemental Indentures.

Upon the execution of any supplemental indenture under this Article, this Indenture shall be modified in accordance therewith, and such supplemental indenture shall form a part of this Indenture for all purposes; and every Holder of Securities theretofore or thereafter authenticated and delivered hereunder shall be bound thereby to the extent provided therein.

SECTION 9.05 Conformity with Trust Indenture Act.

Every supplemental indenture executed pursuant to this Article shall conform to the requirements of TIA as then in effect.

SECTION 9.06 Reference in Securities to Supplemental Indentures.

Securities authenticated and delivered after the execution of any supplemental indenture pursuant to this Article may, and shall if required by the Trustee, bear a notation in form approved by the Trustee as to any matter provided for in such supplemental indenture. If the Company shall so determine, new Securities so modified as to conform, in the opinion of the Trustee and the Board of Directors, to any such supplemental indenture may be prepared and executed by the Company and authenticated and delivered by the Trustee in exchange for Outstanding Securities.

ARTICLE 10.
COVENANTS

SECTION 10.01 Payment of Principal, Premium and Interest.

With respect to each series of Securities, the Company will duly and punctually pay the principal of (and premium, if any) and interest on such Securities in accordance with their terms and this Indenture, and will duly comply with all the other terms, agreements and conditions contained in, or made in the Indenture for the benefit of, the Securities of such series.

Notwithstanding anything to the contrary in this Indenture, the Company may, to the extent it is required to do so by law, deduct or withhold federal income or other similar taxes imposed by the United States from payments of principal, premium, if any, or interest hereunder.

SECTION 10.02 Maintenance of Office or Agency.

The Company will maintain an office or agency in each Place of Payment where Securities may be presented or surrendered for payment, where Securities may be surrendered for registration of transfer or exchange and where notices and demands to or upon the Company in respect of the Securities and this Indenture may be served. The Company will give prompt written notice to the Trustee of the location, and of any change in the location, of such office or agency. If at any time the Company shall fail to maintain such office or agency or shall fail to furnish the

Trustee with the address thereof, such presentations, surrenders, notices and demands may be made or served at the Corporate Trust Office of the Trustee, and the Company hereby appoints the Trustee its agent to receive all such presentations, surrenders, notices and demands.

Unless otherwise set forth in, or pursuant to, a Board Resolution or Indenture supplemental hereto with respect to a series of Securities, the Company hereby initially designates as the Place of Payment for each series of Securities, the Borough of Manhattan, the City and State of New York, and initially appoints the Trustee at its Corporate Trust Office as the Company's office or agency for each such purpose in such city.

SECTION 10.03 Money for Security Payments To Be Held in Trust.

If the Company shall at any time act as its own Paying Agent for any series of Securities, it will, on or before each due date of the principal of (and premium, if any) or interest on, any of the Securities of such series, segregate and hold in trust for the benefit of the Persons entitled thereto a sum sufficient to pay the principal (and premium, if any) or interest so becoming due until such sums shall be paid to such Persons or otherwise disposed of as herein provided, and will promptly notify the Trustee of its action or failure to act.

Whenever the Company shall have one or more Paying Agents for any series of Securities, it will, on or prior to each due date of the principal of (and premium, if any) or interest on, any Securities of such series, deposit with a Paying Agent a sum sufficient to pay the principal (and premium, if any) or interest so becoming due, such sum to be held in trust for the benefit of the Persons entitled to such principal (and premium, if any) or interest, and (unless such Paying Agent is the Trustee) the Company will promptly notify the Trustee of its action or failure so to act.

The Company will cause each Paying Agent other than the Trustee for any series of Securities to execute and deliver to the Trustee an instrument in which such Paying Agent shall agree with the Trustee, subject to the provisions of this Section, that such Paying Agent will:

- (1) hold all sums held by it for the payment of principal of (and premium, if any) or interest on Securities of such series in trust for the benefit of the Persons entitled thereto until such sums shall be paid to such Persons or otherwise disposed of as herein provided;
- (2) give the Trustee notice of any default by the Company (or any other obligor upon the Securities of such series) in the making of any such payment of principal (and premium, if any) or interest on the Securities of such series; and
- (3) at any time during the continuance of any such default, upon the written request of the Trustee, forthwith pay to the Trustee all sums so held in trust by such Paying Agent.

The Company may at any time, for the purpose of obtaining the satisfaction and discharge of this Indenture with respect to any series of Securities or for any other purpose, pay, or by Company Order direct any Paying Agent to pay, to the Trustee all sums held in trust by the

Company or such Paying Agent in respect of each and every series of Securities as to which it seeks to discharge this Indenture or, if for any other purpose, all sums so held in trust by the Company in respect of all Securities, such sums to be held by the Trustee upon the same trusts as those upon which such sums were held by the Company or such Paying Agent; and, upon such payment by any Paying Agent to the Trustee, such Paying Agent shall be released from all further liability with respect to such money.

Any money deposited with the Trustee or any Paying Agent, or then held by the Company, in trust for the payment of the principal of (and premium, if any) or interest on any Security of any series and remaining unclaimed for two years after such principal (and premium, if any) or interest has become due and payable shall be paid to the Company on Company Request, or (if then held by the Company) shall be discharged from such trust; and the Holder of such Security shall thereafter as an unsecured general creditor, look only to the Company for payment thereof, and all liability of the Trustee or such Paying Agent with respect to such trust money, and all liability of the Company as trustee thereof, shall thereupon cease.

SECTION 10.04 Statement as to Compliance; Notice of Default.

The Company and each Guarantor will deliver to the Trustee, within 120 days after the end of each fiscal year, an Officers' Certificate, one of the signatories of which shall be the principal executive, financial or accounting officer of the Company or such Guarantor, as applicable, stating that:

(1) a review of the activities of the Company or such Guarantor, as applicable, during such year as would bear on performance under this Indenture and under the terms of the Securities has been made under his supervision; and

(2) to the best of his knowledge, based on such review, the Company or such Guarantor, as applicable, has fulfilled all its obligations under this Indenture and has complied with all conditions and covenants on its part contained in this Indenture through such year, or, if there has been a default in the fulfillment of any such obligation, covenant or condition, specifying each such default known to him and the nature and status thereof.

For the purpose of this Section 10.04, default and compliance shall be determined without regard to any grace period or requirement of notice provided pursuant to the terms of this Indenture.

SECTION 10.05 Legal Existence.

Subject to Article 8 the Company will do or cause to be done all things necessary to preserve and keep in full force and effect its legal existence.

SECTION 10.06 Limitation on Liens.

Neither the Company nor any Material Subsidiary of the Company shall incur, create, issue, assume, guarantee or otherwise become liable for any indebtedness for money borrowed that

is secured by a Lien on any asset now owned or hereafter acquired by it unless the Company or such Material Subsidiary makes or causes to be made effective provisions whereby the Securities issued under this Indenture will be secured by such Lien equally and ratably with (or prior to) all other indebtedness thereby secured so long as any such indebtedness shall be secured. The foregoing restriction does not apply to the following:

(i) Liens for taxes, assessments or governmental charges or levies on its property if the same shall not at the time be delinquent or thereafter can be paid without penalty, or are being contested in good faith and by appropriate proceedings and for which adequate reserves in accordance with GAAP shall have been set aside on its books;

(ii) Liens imposed by law, such as carriers', warehousemen's, materialmen's, workmen's, repairmen's and mechanics' liens, and other similar Liens (including deposits on pledges to obtain the release of such Liens) arising in the ordinary course of business which secure payment of obligations not more than 60 days past due or which are being contested in good faith by appropriate proceedings and for which adequate reserves shall have been set aside on its books;

(iii) Liens arising out of pledges or deposits required or permitted to qualify the Company or any Subsidiary to conduct business, to maintain self-insurance or to obtain the benefit of any law pertaining to worker's compensation laws, unemployment insurance, old age pensions, or other social security or retirement benefits, or similar legislation;

(iv) utility easements, building restrictions and such other encumbrances or charges against real property as are of a nature generally existing with respect to properties of a similar character and which do not in any material way affect the marketability of the same or interfere with the use thereof in the business of the Company or its Subsidiaries;

(v) Liens incurred in the ordinary course of business securing the performance of bids, trade contracts, leases, statutory obligations, bonds, letters of credit and other similar obligations, and judgment liens to the extent enforcement thereof is effectively stayed, provided that full provision for the payment of all such obligations shall have been made on the books of the Company or such Subsidiary as may be required by GAAP;

(vi) banker's liens and rights of setoff arising by operation of law and contractual rights of setoff;

(vii) Liens existing on any property of the Company or any Subsidiary (including shares of stock owned by the Company or indebtedness owed to the Company or any Subsidiary) existing as of the date of this Indenture;

(viii) Liens created by Subsidiaries of the Company to secure indebtedness of such Subsidiaries to the Company or to one or more other Subsidiaries of the Company;

(ix) Liens affecting property of a Person existing at the time it becomes a Subsidiary of the Company or at the time it merges into or consolidates with the Company or a Subsidiary of the Company or at the time of a sale, lease or other disposition of all or substantially all of the properties of such Person to the Company or its Subsidiaries;

(x) Liens on any property existing at the time of the acquisition thereof or incurred to secure payment of all or a part of the purchase price thereof or to secure indebtedness incurred prior to, at the time of, or within 12 months after the acquisition thereof for the purpose of financing all or part of the purchase price thereof;

(xi) Liens on any property to secure all or part of the cost of improvements or construction thereon or indebtedness incurred to provide funds for such purpose in a principal amount not exceeding the cost of such improvements or construction;

(xii) Liens on shares of stock, indebtedness or other securities of a Person that is not the Company or a Subsidiary of the Company;

(xiii) Liens on or with respect to capital leases entered into after the date of this Indenture, provided that such liens extend only to the property or assets that are the subject of such capital leases;

(xiv) Liens on property of the Company or a Subsidiary in favor of the United States of America or any State thereof, or any department, agency or instrumentality or political subdivision of the United States of America or any State thereof, or in favor of any other country, or any political subdivision thereof, to secure partial, progress, advance or other payments pursuant to any contract or statute or to secure any indebtedness incurred for the purpose of financing all or any part of the purchase price or the cost of construction of the property subject to such Liens;

(xv) any security interest created in connection with the sale, discount or guarantee of notes, chattel mortgages, leases, accounts receivable, trade acceptances or other paper or contingent repurchase obligations, arising out of sales of merchandise in the ordinary course of business;

(xvi) any extension, substitution, renewal or replacement of any lien referred to in the foregoing clauses (i) through (xiv) inclusive, or of any indebtedness secured thereby; provided, however, that the principal amount of indebtedness secured thereby shall not exceed the principal amount of indebtedness so secured at the time of such extension, substitution, renewal or replacement, or at the time the lien was issued, created or assumed or otherwise permitted, and that such extension, substitution, renewal or replacement lien shall be limited to all or part of substantially the same property which secured the lien extended, renewed or replaced (plus improvements on such property); and

(xvii) other Liens arising in connection with indebtedness of the Company and its Subsidiaries in an aggregate principal amount for the Company and its Subsidiaries, together with all Attributable Debt with respect to sale and leaseback transactions involving

Principal Properties (with the exception of the transactions that are excluded as described in Section 10.07), not exceeding at the time such lien is issued, created or assumed 10% of the Consolidated Assets of the Company.

SECTION 10.07 Limitation on Sale and Leaseback Transactions.

The Company shall not itself, and shall not permit any Material Subsidiary to, enter into any arrangement after the date of the first issuance by the Company of Securities issued pursuant to this instrument with any bank, insurance company or other lender or investor (other than the Company or another Material Subsidiary) providing for the leasing by the Company or any Material Subsidiary of any Principal Property (except a lease for a period not to exceed three years by the end of which it is intended that the use of such Principal Property by the lessee will be discontinued), which was or is owned or leased by the Company or a Material Subsidiary and which has been or is to be sold or transferred, more than 120 days after the completion of construction and commencement of full operation thereof by the Company or such Material Subsidiary, to such lender or investor or to any Person to whom funds have been or are to be advanced by such lender or investor on the security of such Principal Property (herein referred to as a "Sale and Leaseback Transaction") unless, either:

(a) the Attributable Debt of the Company and its Material Subsidiaries in respect of such Sale and Leaseback Transaction and all other Sale and Leaseback Transactions entered into after the date of the first issuance by the Company of securities issued pursuant to this instrument (other than any such Sale and Leaseback Transactions that are otherwise permitted or excepted by this Section 10.07), plus the aggregate principal amount of indebtedness secured by Liens on Principal Properties then outstanding (excluding any such indebtedness secured by Liens covered in subparagraphs (i) through (xvii) of Section 10.06) without equally and ratably securing the Securities, would not exceed 10% of Consolidated Assets, or

(b) the Company, within 150 days after the sale or transfer, applies or causes a Material Subsidiary to apply an amount equal to the greater of (i) the net proceeds of such sale or transfer or (ii) the Attributable Debt with respect thereto, to the retirement of Securities of any series or other indebtedness of the Company (other than indebtedness subordinated to the Securities) or indebtedness of a Material Subsidiary, for money borrowed, having a stated maturity more than 12 months from the date of such application or which is extendible at the option of the obligor thereon to a date more than 12 months from the date of such application (and, unless otherwise expressly provided with respect to any one or more series of Securities, any redemption of Securities pursuant to this provision shall not be deemed to constitute a refunding operation or anticipated refunding operation for the purposes of any provision limiting the Company's right to redeem Securities of any one or more such series when such redemption involves a refunding operation or anticipated refunding operation); provided that the amount to be so applied shall be reduced by (i) the principal amount of Securities delivered within 150 days after such sale or transfer to the Trustee for retirement and cancellation, and (ii) the principal amount of any such indebtedness of the Company or a Material Subsidiary, other than Securities, voluntarily

retired by the Company or a Material Subsidiary within 180 days after such sale or transfer. Notwithstanding the foregoing, no retirement referred to in this subdivision (b) may be effected by payment at maturity or pursuant to any mandatory sinking fund payment or any mandatory prepayment provision.

Notwithstanding the foregoing, where the Company or any Material Subsidiary is the lessee in any Sale and Leaseback Transaction, Attributable Debt shall not include any indebtedness resulting from the guarantee by the Company or any other Material Subsidiary of the lessee's obligation thereunder.

SECTION 10.08 Waiver of Certain Covenants.

The Company may omit in respect of any series of Securities, in any particular instance, to comply with any covenant or condition set forth in Section 10.04, 10.06 or 10.07 or set forth in a Board Resolution or supplemental indenture with respect to the Securities of such series, unless otherwise specified in such Board Resolution or supplemental indenture, if before or after the time for such compliance the Holders of not less than a majority in principal amount of the Outstanding Securities of all series affected by such waiver (voting as one class) shall, by Act of such Securityholders delivered to the Company and the Trustee (in accordance with Section 1.04 hereof), either waive such compliance in such instance or generally waive compliance with such covenant or condition, but no such waiver shall extend to or affect such covenant or condition except to the extent so expressly waived, and, until such waiver shall become effective, the obligations of the Company and the duties of the Trustee in respect of any such covenant or condition shall remain in full force and effect. Nothing in this Section 10.08 shall permit the waiver of compliance with any covenant or condition set forth in such Board Resolution or supplemental indenture which, if in the form of an indenture supplemental hereto, would not be permitted by Section 9.02 without the consent of the Holder of each Outstanding Security affected thereby.

SECTION 10.09 Additional Covenants.

Any additional covenants which the Company or the Guarantors will make pertaining to a series of Securities shall be set forth in a supplement relating to such series of Securities.

SECTION 10.10 Calculation of Original Issue Discount.

The Company shall file with the Trustee promptly at the end of each calendar year (i) a written notice specifying the amount of original issue discount (including daily rates and accrual periods) accrued on Outstanding Securities as of the end of such year and (ii) such other specific information relating to such original issue discount as may then be relevant under the Internal Revenue Code of 1986, as amended.

ARTICLE 11.
REDEMPTION OF SECURITIES

SECTION 11.01 Applicability of Article.

The Company may reserve the right to redeem and pay before Stated Maturity all or any part of the Securities of any series, either by optional redemption, sinking or purchase fund or analogous obligation or otherwise, by provision therefor in the form of Security for such series established and approved pursuant to Section 2.02 and on such terms as are specified in such form or in the indenture supplemental hereto with respect to Securities of such series as provided in Section 3.01. Redemption of Securities of any series shall be made in accordance with the terms of such Securities and, to the extent that this Article does not conflict with such terms, the succeeding Sections of this Article. Notwithstanding anything to the contrary in this Indenture, except in the case of redemption pursuant to a sinking fund, the Trustee shall not make any payment in connection with the redemption of Securities until the close of business on the Redemption Date.

SECTION 11.02 Election To Redeem; Notice to Trustee.

The election of the Company to redeem any Securities redeemable at the election of the Company shall be evidenced by, or pursuant to authority granted by, a Board Resolution. In case of any redemption at the election of the Company of the Securities of any series, the Company shall, at least 60 days prior to the Redemption Date fixed by the Company (unless a shorter notice shall be satisfactory to the Trustee), notify the Trustee of such Redemption Date and of the principal amount of Securities of such series and the Tranche to be redeemed.

In the case of any redemption of Securities (i) prior to the expiration of any restriction on such redemption provided in the terms of such Securities or elsewhere in this Indenture, or (ii) pursuant to an election of the Company which is subject to a condition specified in the terms of such Securities, the Company shall furnish the Trustee with an Officers' Certificate evidencing compliance with such restriction or condition.

SECTION 11.03 Selection by Trustee of Securities To Be Redeemed.

If less than all the Securities of like tenor and terms of any series (a "Tranche") are to be redeemed, the particular Securities to be redeemed shall be selected not more than 60 days prior to the Redemption Date by the Trustee, from the Outstanding Securities of such Tranche not previously called for redemption, by such method as the Trustee shall deem fair and appropriate and which may include provision for the selection for redemption of portions of the principal of Securities of such Tranche of a denomination larger than the minimum authorized denomination for Securities of that series. Unless otherwise provided in the terms of a particular series of Securities, the portions of the principal of Securities so selected for partial redemption shall be equal to the minimum authorized denomination of the Securities of such series, or an integral multiple thereof, and the principal amount which remains outstanding shall not be less than the minimum authorized denomination for Securities of such series. If less than all the Securities of unlike tenor and terms

of a series are to be redeemed, the particular Tranche of Securities to be redeemed shall be selected by the Company.

The Trustee shall promptly notify the Company in writing of the Securities selected for redemption and, in the case of any Security selected for partial redemption, the principal amount thereof to be redeemed.

Securities shall be excluded from eligibility for selection for redemption if they are identified by registration and certificate number in a written statement signed by an authorized officer of the Company and delivered to the Trustee at least 60 days prior to the Redemption Date as being owned of record and beneficially by, and not pledged or hypothecated by either, (a) the Company or (b) an entity specifically identified in such written statement as being an Affiliate of the Company.

For all purposes of this Indenture, unless the context otherwise requires, all provisions relating to the redemption of Securities shall relate, in the case of any Security redeemed or to be redeemed only in part, to the portion of the principal of such Security which has been or is to be redeemed.

SECTION 11.04 Notice of Redemption.

Notice of redemption shall be given by first-class mail, postage prepaid, mailed not less than 30 (unless otherwise provided in the Board Resolution establishing the relevant series) nor more than 60 days prior to the Redemption Date, to each holder of Securities to be redeemed, at his address appearing in the Security Register.

All notices of redemption shall identify the Securities to be redeemed (including CUSIP number(s)) and state:

- (1) the Redemption Date;
- (2) the Redemption Price;
- (3) if less than all Outstanding Securities of any series are to be redeemed, the identification (and, in the case of partial redemption, the respective principal amounts) of the Securities to be redeemed;
- (4) that on the Redemption Date the Redemption Price will become due and payable upon each such Security, and that interest, if any, thereon shall cease to accrue from and after said date;
- (5) the place where such Securities are to be surrendered for payment of the Redemption Price, which shall be the office or agency of the Company in the Place of Payment; and
- (6) that the redemption is on account of a sinking or purchase fund, or other analogous obligation, if that be the case.

Notice of redemption of Securities to be redeemed at the election of the Company shall be given by the Company or, at the Company's request, by the Trustee in the name and at the expense of the Company.

SECTION 11.05 Deposit of Redemption Price.

On or prior to 10:00 a.m., New York City time, any Redemption Date, the Company shall deposit with the Trustee or with a Paying Agent (or, if the Company is acting as its own Paying Agent, segregate and hold in trust as provided in Section 10.03) an amount of money sufficient to pay the Redemption Price of all the Securities which are to be redeemed on that date.

SECTION 11.06 Securities Payable on Redemption Date.

Notice of redemption having been given as aforesaid, the Securities so to be redeemed shall, on the Redemption Date, become due and payable at the Redemption Price therein specified and from and after such date (unless the Company shall default in the payment of the Redemption Price) such Securities shall cease to bear interest. Upon surrender of such Securities for redemption in accordance with the notice, such Securities shall be paid by the Company at the Redemption Price. Unless otherwise provided with respect to such Securities pursuant to Section 3.01, installments of interest the Stated Maturity of which is on or prior to the Redemption Date shall be payable to the Holders of such Securities registered as such on the relevant Regular Record Dates according to their terms and the provisions of Section 3.07.

If any Security called for redemption shall not be so paid upon surrender thereof for redemption, the principal shall, until paid, bear interest from the Redemption Date at the rate borne by the Security, or as otherwise provided in such Security.

SECTION 11.07 Securities Redeemed in Part.

Any Security which is to be redeemed only in part shall be surrendered at the office or agency of the Company in the Place of Payment with respect to that series (with, if the Company or the Trustee so requires, due endorsement by, or a written instrument of transfer in form satisfactory to the Company and the Trustee duly executed by, the Holder thereof or his attorney duly authorized in writing) and the Company shall execute and the Trustee shall authenticate and deliver to the Holder of such Security without service charge, a new Security or Securities of the same series and Stated Maturity and of like tenor and terms, of any authorized denomination as requested by such Holder in aggregate principal amount equal to and in exchange for the unredeemed portion of the principal of the Security so surrendered.

SECTION 11.08 Provisions with Respect to Any Sinking Funds.

Unless the form or terms of any series of Securities shall provide otherwise, in lieu of making all or any part of any mandatory sinking fund payment with respect to such series of Securities in cash, the Company may at its option (1) deliver to the Trustee for cancellation any Securities of such series theretofore acquired by the Company, or (2) receive credit for any Securities of such series (not previously so credited) acquired by the Company (including by way of optional

redemption (pursuant to the sinking fund or otherwise but not by way of mandatory sinking fund redemption) or converted by the Holder thereof into Common Stock or other securities and theretofore delivered to the Trustee for cancellation, and if it does so then (i) Securities so delivered or credited shall be credited at the applicable sinking fund Redemption Price with respect to Securities of such series, and (ii) on or before the 60th day next preceding each sinking fund Redemption Date with respect to such series of Securities, the Company will deliver to the Trustee (A) an Officers' Certificate specifying the portions of such sinking fund payment to be satisfied by payment of cash and by delivery or credit of Securities of such series acquired by the Company or converted by the Holder thereof, and (B) such Securities, to the extent not previously surrendered. Such Officers' Certificate shall also state the basis for such credit and that the Securities for which the Company elects to receive credit have not been previously so credited and were not acquired by the Company through operation of the mandatory sinking fund, if any, provided with respect to such Securities and shall also state that no Event of Default with respect to Securities of such series has occurred and is continuing. All Securities so delivered to the Trustee shall be canceled by the Trustee and no Securities shall be authenticated in lieu thereof.

If the sinking fund payment or payments (mandatory or optional) with respect to any series of Securities made in cash plus any unused balance of any preceding sinking fund payments with respect to Securities of such series made in cash shall exceed \$50,000 (or a lesser sum if the Company shall so request), unless otherwise provided by the terms of such series of Securities, that cash shall be applied by the Trustee on the sinking fund Redemption Date with respect to Securities of such series next following the date of such payment to the redemption of Securities of such series at the applicable sinking fund Redemption Price with respect to Securities of such series, together with accrued interest, if any, to the date fixed for redemption, with the effect provided in Section 11.06. The Trustee shall select, in the manner provided in Section 11.03, for redemption on such sinking fund Redemption Date a sufficient principal amount of Securities of such series to utilize that cash and shall thereupon cause notice of redemption of the Securities of such series for the sinking fund to be given in the manner provided in Section 11.04 (and with the effect provided in Section 11.06) for the redemption of Securities in part at the option of the Company. Any sinking fund moneys not so applied or allocated by the Trustee to the redemption of Securities of such series shall be added to the next cash sinking fund payment with respect to Securities of such series received by the Trustee and, together with such payment, shall be applied in accordance with the provisions of this Section 11.08. Any and all sinking fund moneys with respect to Securities of any series held by the Trustee at the Maturity of Securities of such series, and not held for the payment or redemption of particular Securities of such series, shall be applied by the Trustee, together with other moneys, if necessary, to be deposited sufficient for the purpose, to the payment of the principal of the Securities of such series at Maturity.

On or before each sinking fund Redemption Date provided with respect to Securities of any series, the Company shall pay to the Trustee in cash a sum equal to all accrued interest, if any, to the date fixed for redemption on Securities to be redeemed on such sinking fund Redemption Date pursuant to this Section 11.08.

ARTICLE 12.
GUARANTEES

SECTION 12.01 Guarantees.

(a) Each of the Guarantors, as primary obligor and not merely as surety, fully, irrevocably and unconditionally guarantees (each, a “Guarantee”), to each Holder of Securities (including each Holder of Securities issued under the Indenture after the date of this Indenture) and to the Trustee and its successors and assigns (i) the full and punctual payment of principal of, premium, if any, and interest on the Securities when due, whether at maturity, by acceleration, by redemption or otherwise, and all other monetary obligations of the Company under this Indenture (including obligations to the Trustee) and the Securities and (ii) the full and punctual performance within applicable grace periods of all other obligations of the Company under this Indenture and the Securities.

(b) Each of the Guarantors further agrees that its obligations hereunder shall be unconditional irrespective of the absence or existence of any action to enforce the same, the recovery of any judgment against the Company or any other Guarantor (except to the extent such judgment is paid) or any waiver or amendment of the provisions of this Indenture or the Securities to the extent that any such action or any similar action would otherwise constitute a legal or equitable discharge or defense of a Guarantor (except that each such waiver or amendment shall be effective in accordance with its terms).

(c) Each of the Guarantors further agrees that each Guarantee constitutes a guarantee of payment, performance and compliance and not merely of collection.

(d) Each of the Guarantors further agrees to waive presentment to, demand of payment from and protest to the Company or any other Person, and also waives diligence, notice of acceptance of its Guarantee, presentment, demand for payment, notice of protest for nonpayment, the filing of claims with a court in the event of merger or bankruptcy of the Company or any other Person and any right to require a proceeding first against the Company or any other Person. The obligations of the Guarantors shall not be affected by any failure or policy on the part of the Trustee to exercise any right or remedy under this Indenture or the Securities of any series.

(e) The obligation of each Guarantor to make any payment hereunder may be satisfied by causing the Company or any other Person to make such payment.

(f) If any Holder of any Security or the Trustee is required by any court or otherwise to return to the Company or any Guarantor, or any custodian, trustee, liquidator or other similar official acting in relation to any of the Company or any Guarantor, any amount paid by any of them to the Trustee or such Holder, the Guarantee of such Guarantor, to the extent theretofore discharged, shall be reinstated in full force and effect.

(g) Any term or provision of this Indenture to the contrary notwithstanding, the maximum aggregate amount of each of the Guarantees shall not exceed the maximum amount that can be guaranteed by the relevant Guarantor without rendering the relevant Guarantee under this Indenture voidable under applicable law relating to fraudulent conveyance or fraudulent transfer or similar laws affecting the rights of creditors generally.

SECTION 12.02 Release of Guarantor

In the event (a) of the merger, consolidation or sale or disposition of all or substantially all of the assets of a Guarantor (other than a merger or consolidation with, or sale or disposition of assets to, the Company or another Subsidiary of the Company), or (b) there occurs a transfer, sale or other disposition of the Voting Stock of a Guarantor whereby such Guarantor ceases to constitute a Subsidiary of the Company, then in any such case such 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 such Guarantor) shall be released and relieved of any obligations under its Guarantee. Upon delivery by the Company to the Trustee of an Officers' Certificate to the effect of the foregoing, such Guarantor shall be discharged from all further liability and obligation under this Indenture and the Trustee shall execute any documents reasonably required in order to evidence the release of such Guarantor from its obligations under its Guarantee.

IN WITNESS WHEREOF, the parties hereto have caused this Indenture to be duly executed as of the day and year first above written.

General Dynamics Corporation, a Delaware corporation

By: /s/ David H. Fogg

Name: David H. Fogg

Title: Vice President and Treasurer

American Overseas Marine Corporation, a Delaware corporation

By: /s/ David H. Fogg

Name: David H. Fogg

Title: Vice President and Treasurer

Bath Iron Works Corporation, a Maine corporation

By: /s/ David H. Fogg

Name: David H. Fogg

Title: Assistant Treasurer

Computer Systems & Communications Corporation, a Delaware corporation

By: /s/ David H. Fogg

Name: David H. Fogg

Title: Treasurer

Electric Boat Corporation, a Delaware corporation

By: /s/ David H. Fogg

Name: David H. Fogg

Title: Assistant Treasurer

General Dynamics Advanced Technology Systems, Inc., a Delaware corporation

By: /s/ David H. Fogg
Name: David H. Fogg
Title: Treasurer

General Dynamics Armament Systems, Inc., a Delaware corporation

By: /s/ David H. Fogg
Name: David H. Fogg
Title: Assistant Treasurer

General Dynamics Defense Systems, Inc., a Delaware corporation

By: /s/ David H. Fogg
Name: David H. Fogg
Title: Treasurer

General Dynamics Government Systems Corporation, a Delaware corporation

By: /s/ David A. Savner
Name: David A. Savner
Title: Vice President

General Dynamics Information Systems, Inc., a Delaware corporation

By: /s/ David H. Fogg
Name: David H. Fogg
Title: Treasurer

General Dynamics Land Systems Inc., a Delaware corporation

By: /s/ David H. Fogg
Name: David H. Fogg
Title: Assistant Treasurer

General Dynamics Ordnance and Tactical Systems, Inc., a Virginia corporation

By: /s/ David H. Fogg
Name: David H. Fogg
Title: Treasurer

Gulfstream Aerospace Corporation, a Delaware corporation

By: /s/ David H. Fogg
Name: David H. Fogg
Title: Treasurer

Material Service Resources Company, a Delaware corporation

By: /s/ Michael E. Stanczak
Name: Michael E. Stanczak
Title: President

National Steel and Shipbuilding Company, a Nevada Corporation

By: /s/ David H. Fogg
Name: David H. Fogg
Title: Treasurer

The Bank of New York, a New York banking corporation as Trustee

By: /s/ Giovanni Barris

Name: Giovanni Barris

Title: Vice President

EXHIBIT A

GUARANTORS

American Overseas Marine Corporation, a Delaware corporation
Bath Iron Works Corporation, a Maine corporation
Computer Systems & Communications Corporation, a Delaware corporation
Electric Boat Corporation, a Delaware corporation
General Dynamics Advanced Technology Systems, Inc., a Delaware corporation
General Dynamics Armament Systems, Inc., a Delaware corporation
General Dynamics Defense Systems, Inc., a Delaware corporation
General Dynamics Government Systems Corporation, a Delaware corporation
General Dynamics Information Systems, Inc., a Delaware corporation
General Dynamics Land Systems Inc., a Delaware corporation
General Dynamics Ordnance and Tactical Systems, Inc., a Virginia corporation
Gulfstream Aerospace Corporation, a Delaware corporation
Material Service Resources Company, a Delaware corporation
National Steel and Shipbuilding Company, a Nevada corporation

GENERAL DYNAMICS CORPORATION
EXECUTIVE ANNUAL INCENTIVE PLAN

General Dynamics Corporation (the “Company”) has adopted the Executive Annual Incentive Plan (the “Plan”) as a means of attracting, retaining, and motivating officers and key employees and to provide them with incentives to enhance the growth and profitability of the Company.

ARTICLE I: DEFINITIONS

Section 1.1 “Adjusted Net Earnings” shall mean consolidated net operating profit excluding goodwill impairment and non-economic accounting changes.

Section 1.2 “Board” shall mean the Board of Directors of the Company.

Section 1.3 “Code” shall mean the Internal Revenue Code of 1986, as amended. Any reference to a section of the Code herein shall be deemed to include a reference to the regulations promulgated under such section.

Section 1.4 “Committee” shall mean the Compensation Committee of the Board of Directors of the Company, or such other committee or subcommittee designated by the Board to administer the Plan.

Section 1.5 “Participant” shall mean with respect to any Performance Period (i) the Chief Executive Officer, and (ii) those Executive Vice Presidents and Senior Vice Presidents of the Company for that Performance Period.

Section 1.6 “Performance Period” shall mean the Company’s fiscal year.

ARTICLE II: ELIGIBILITY

Eligibility for participation in the Plan shall be limited to the Chief Executive Officer, Executive Vice Presidents and Senior Vice Presidents of the Company (hereinafter “Senior Executives”).

ARTICLE III: PERFORMANCE OBJECTIVE

The Plan’s performance objective shall be positive Adjusted Net Earnings.

ARTICLE IV: AWARDS

Section 4.1 Maximum Awards. The maximum awards payable to an individual who is the Chief Executive Officer during any part of the fiscal year shall be 0.4 percent of Adjusted Net Earnings. The maximum award payable to other Senior Executives designated to participate in the Plan for a fiscal year shall be 0.2 percent of Adjusted Net Earnings. A Participant’s final award will be determined by the Committee in its discretion based on its assessment of individual and corporate performance and can be reduced below, but in all events shall be no greater than, the maximum award set forth in this Section 4.1.

Section 4.2 Payment. Awards shall be paid in cash in the first 2 ½ months of the year following the Performance Period, and only after the certification provided for in Section 4.3.

Section 4.3 Certification. Prior to the payment of a bonus award to any Participant, the Committee shall certify in writing the level of performance attained for the Performance Period and that any other material terms of the award have been satisfied. The Committee shall have no discretion to increase the amount of a Participant's maximum bonus award that would otherwise be payable to the Participant hereunder.

ARTICLE V: TERMINATIONS

In the event a Senior Executive terminates employment or is demoted or transferred to a position that is not eligible for participation in the Plan before payment of a bonus, that former Participant shall no longer be treated as a Participant and shall not be entitled to an award for the year of termination, demotion, or transfer. The Committee shall have the sole discretion to allow an award and to determine the terms of an award in the event of termination by death, disability, retirement, a change in control of the Company, or a divestiture or discontinued operation of a subsidiary with which the individual was associated. Any such award shall be allowed only if the Performance Objective set forth in Article III is met and only up to the maximum amounts set forth in Section 4.1.

ARTICLE VI: ADMINISTRATION

Section 6.1 Administration.

(a) The Plan shall be administered by the Committee, which may delegate its duties and powers in whole or in part to any subcommittee thereof; it is expected that, in the event the Committee is not comprised solely of "outside directors" within the meaning of Section 162(m) of the Code, a subcommittee comprised solely of at least two individuals who qualify as "outside directors" within the meaning of Section 162(m) of the Code (or any successor section thereto) shall certify that the performance goals have been attained.

(b) It shall be the duty of the Committee to conduct the general administration of the Plan in accordance with its provisions. The Committee shall have the power to interpret the Plan, and to adopt such rules for the administration, interpretation and application of the Plan as are consistent therewith and to interpret, amend or revoke any such rules. The Committee's decisions or actions in respect thereof shall be conclusive and binding upon any and all Participants and their beneficiaries, successors and assigns, and all other persons.

ARTICLE VII: OTHER PROVISIONS

Section 7.1 Term. Subject to stockholder approval as set forth in Section 7.3, this Plan shall be effective for bonus awards granted for fiscal year 2016, and shall remain in effect until terminated by the Board.

Section 7.2 Amendment, Suspension or Termination of the Plan. This Plan does not constitute a promise to pay and may be wholly or partially amended or otherwise modified,

suspended or terminated at any time or from time to time by the Board or the Committee; provided, however, that any such amendment or modification shall comply with all applicable laws and applicable requirements for exemption (to the extent necessary) under Section 162(m) of the Code.

Section 7.3 Approval of Plan by Stockholders. The Plan shall be submitted for the approval of the Company's stockholders at the annual meeting of stockholders to be held in May 2016. In the event that the Plan is not so approved, no bonus award shall be payable under the Plan, and the Plan shall terminate and shall be null and void in its entirety.

Section 7.4 Bonus Awards and Other Plans. Nothing contained in the Plan shall prohibit the Company from granting awards or authorizing other compensation to any Senior Executive under any other plan or authority or limit the authority of the Company to establish other special awards or incentive compensation plans providing for the payment of incentive compensation to the Senior Executives.

Section 7.5 Miscellaneous.

(a) The Company shall deduct all federal, state and local taxes required by law to be withheld from any bonus award paid to a Participant hereunder.

(b) This Plan, and any bonus awards paid under the Plan, are intended to qualify for the exception from Code Section 162(m) for performance-based compensation, and for the exemption from Code Section 409A for short-term deferrals, and will be interpreted and administered consistent with that intent.

(c) Payment of bonuses under the Plan is purely at the discretion of the Company.

(d) In no event shall the Company be obligated to pay to any Participant a bonus award for a Performance Period by reason of the Company's payment of a bonus award to such Participant in any other Performance Period.

(e) Nothing in this Plan or in any instrument executed pursuant hereto shall confer upon any person any right to continue in the employment or other service of the Company, or shall affect the right of the Company to terminate the employment or other service of any person at any time with or without cause.

(f) The rights of Participants under the Plan shall be unfunded and unsecured and Participants shall have no rights in any specific assets of the Company.

(g) No rights of any Participant to payments of any amounts under the Plan shall be sold, exchanged, transferred, assigned, pledged, hypothecated or otherwise disposed of other than by will or by laws of descent and distribution, and any such purported sale, exchange, transfer, assignment, pledge, hypothecation or disposition shall be void.

(h) Any provision of the Plan that is prohibited or unenforceable shall be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions of the Plan.

(i) The terms of this Plan will be binding upon and inure to the benefit of the Company and its successors and assigns.

(j) The validity, construction, interpretation and administration of the Plan and any bonus awards under the Plan and of any determinations or decisions made thereunder, and the rights of all persons having or claiming to have any interest herein or thereunder, shall be governed by, and determined exclusively in accordance with, the laws of the Commonwealth of Virginia (determined without regard to its conflict of laws provisions).

GENERAL DYNAMICS CORPORATION
SUBSIDIARIES
AS OF JANUARY 31, 2018

Subsidiaries of General Dynamics Corporation (Parent and Registrant)	Place of Incorporation	Percent of Voting Power
American Overseas Marine Company, LLC	Delaware	100
Applied Physical Sciences Corp.	Connecticut	100
ARMA Global Corporation	Florida	100
Avjet Corporation	California	100
Bath Iron Works Australia Corporation	Delaware	100
Bath Iron Works Canada, LLC	Delaware	100
Bath Iron Works Corporation	Maine	100
Blueprint Technologies, Inc.	Virginia	100
Braintree I Maritime Corp.	Delaware	100
Braintree II Maritime Corp.	Delaware	100
Braintree III Maritime Corp.	Delaware	100
Braintree IV Maritime Corp.	Delaware	100
Braintree V Maritime Corp.	Delaware	100
Buccaneer Computer Systems & Service, Inc.	Virginia	100
Catapult Technology, Ltd.	Maryland	100
Concord I Maritime Corporation	Delaware	100
Concord II Maritime Corporation	Delaware	100
Concord III Maritime Corporation	Delaware	100
Concord IV Maritime Corporation	Delaware	100
Concord V Maritime Corporation	Delaware	100
Convair Aircraft Corporation	Delaware	100
Convair Corporation	Delaware	100
Eagle Enterprise, Inc.	Delaware	100
EB Groton Engineering, Inc.	Delaware	100
EBV Explosives Environmental Company	Delaware	100
ELCS-CZ, s.r.o.	Czech Republic	100
Electric Boat - Australia, LLC	Delaware	100
Electric Boat - UK, LLC	Delaware	100
Electric Boat Canada, LLC	Delaware	100
Electric Boat Corporation	Delaware	100
Electric Boat France, LLC	Delaware	100
Electrocom, Inc.	Delaware	100
Expro Finance Inc.	Canada	100
Force Protection Europe Limited	England and Wales	100
Force Protection, Inc.	Nevada	100
ForeSight Technology Services, LLC	Virginia	100
Freeman United Coal Mining Company, LLC	Delaware	100
GD Brazil Holdings LLC	Delaware	100
GD European Land Systems - Steyr GmbH	Austria	100
GD European Land Systems Holding GmbH	Austria	100
GDOTS Services Corporation	Delaware	100
General Dynamics - OTS (Global), Inc.	Delaware	100
General Dynamics AIS Australia Pty Ltd	Australia	100
General Dynamics Canadian Finance Inc.	New Brunswick	100

General Dynamics Canadian Holdings Inc.	New Brunswick	100
General Dynamics Commercial Cyber Services, LLC	Virginia	100
General Dynamics European Finance Limited	England and Wales	100
General Dynamics European Land Systems - Austria GmbH	Austria	100
General Dynamics European Land Systems - Czech s.r.o.	Czech Republic	100
General Dynamics European Land Systems - Denmark ApS	Denmark	100
General Dynamics European Land Systems - Germany GmbH	Germany	100
General Dynamics European Land Systems - Mowag GmbH	Switzerland	100
General Dynamics European Land Systems Romania S.R.L.	Romania	100
General Dynamics European Land Systems, S.L.	Spain	100
General Dynamics Global Force, LLC	Delaware	100
General Dynamics Global Holdings Limited	England and Wales	100
General Dynamics Global Imaging Technologies, Inc.	Delaware	100
General Dynamics Government Satellite Services, LLC	Delaware	100
General Dynamics Government Systems Corporation	Delaware	100
General Dynamics Government Systems Overseas Corporation	Delaware	100
General Dynamics Information Technology Canada, Limited	Canada	100
General Dynamics Information Technology Limited	United Kingdom	100
General Dynamics Information Technology, Inc.	Virginia	100
General Dynamics Installation Services, LLC	Delaware	100
General Dynamics International Corporation	Delaware	100
General Dynamics Itronix, LLC	Delaware	100
General Dynamics Land Systems - Australia Pty. Ltd.	Australia	100
General Dynamics Land Systems - Canada Corporation	New Brunswick	100
General Dynamics Land Systems - Canada Services Inc.	New Brunswick	100
General Dynamics Land Systems - Canadian Services Limited	New Brunswick	100
General Dynamics Land Systems - Force Protection Inc.	Nevada	100
General Dynamics Land Systems Customer Service & Support Company	Texas	100
General Dynamics Land Systems Inc.	Delaware	100
General Dynamics Limited	United Kingdom	100
General Dynamics Marine Systems, Inc.	Delaware	100
General Dynamics Mission Systems International Limited	England and Wales	100
General Dynamics Mission Systems Overseas Company, LLC	Delaware	100
General Dynamics Mission Systems, Inc.	Delaware	100
General Dynamics Motion Control, LLC	Delaware	100
General Dynamics One Source, LLC	Delaware	100
General Dynamics Ordnance and Tactical Systems - Canada Inc.	Canada	100
General Dynamics Ordnance and Tactical Systems - Canada Valleyfield Inc.	Canada	100
General Dynamics Ordnance and Tactical Systems - Simunition Operations, Inc.	Delaware	100
General Dynamics Ordnance and Tactical Systems, Inc.	Virginia	100
General Dynamics OTS (Aerospace), Inc.	Washington	100
General Dynamics OTS (California), Inc.	California	100
General Dynamics OTS (DRI), Inc.	Alabama	100
General Dynamics OTS (Niceville), Inc.	Florida	100
General Dynamics OTS (Pennsylvania), Inc.	Pennsylvania	100
General Dynamics Overseas Systems and Services Corporation	Delaware	100
General Dynamics Properties, Inc.	Delaware	100
General Dynamics Robotic Systems, Inc.	Delaware	100
General Dynamics Satcom Technologies Asia Private Limited	India	100
General Dynamics SATCOM Technologies, Inc.	Delaware	100

General Dynamics Satellite Communication Services, LLC	Delaware	100
General Dynamics Shared Resources, LLC	Delaware	100
General Dynamics Support Services Company	Delaware	100
General Dynamics Swiss Financial Management Limited	United Kingdom	100
General Dynamics United Kingdom Limited	United Kingdom	100
General Dynamics Worldwide Holdings, Inc.	Delaware	100
General Dynamics-OTS, Inc.	Delaware	100
GM GDLS Defense Group, L.L.C.	Delaware	100
GPS Source, Inc.	Colorado	100
Gulfstream 100 Holdings LLC	Delaware	100
Gulfstream Aerospace Corporation (CA)	California	100
Gulfstream Aerospace Corporation (DE)	Delaware	100
Gulfstream Aerospace Corporation (GA)	Georgia	100
Gulfstream Aerospace Corporation (OK)	Oklahoma	100
Gulfstream Aerospace Corporation of Texas	Texas	100
Gulfstream Aerospace Hong Kong Limited	Hong Kong	100
Gulfstream Aerospace LLC	Delaware	100
Gulfstream Aerospace LP	Texas	100
Gulfstream Aerospace Services Corporation	Delaware	100
Gulfstream Aerospace, Ltd.	United Kingdom	100
Gulfstream Aerospace Sociedad de Responsabilidad Limitada de Capital Variable (S. de R.L. de C.V.)	Mexico	100
Gulfstream Do Brasil Servicos De Suporte E Manutencao A Aeronaves Ltda.	Brazil	100
Gulfstream International Corporation	Delaware	100
Gulfstream Leasing LLC	Georgia	100
Gulfstream Product Support Corporation	Delaware	100
Gulfstream Tennessee Corporation	Delaware	100
Gulfstream-California, Inc.	Delaware	100
Interiores Aereos S.A. de C.V.	Mexico	100
International Manufacturing Technologies, Inc.	California	100
IPWireless PTE. Limited	Singapore	100
Jet Aviation (Asia Pacific) Pte. Ltd.	Singapore	100
Jet Aviation (Bermuda) Ltd.	Bermuda	100
Jet Aviation (Hong Kong) Ltd.	Hong Kong	100
Jet Aviation (Malaysia) SDN, BHD	Malaysia	100
Jet Aviation 125 Services, LLC	Delaware	100
Jet Aviation AG	Switzerland	100
Jet Aviation Brazil Holdings, Inc.	Delaware	100
Jet Aviation Business Jets (Hong Kong) Limited	Hong Kong	100
Jet Aviation Business Jets AG	Switzerland	100
Jet Aviation Business Jets FZCO	UAE	100
Jet Aviation California, LLC	California	100
Jet Aviation Dulles, LLC	Delaware	100
Jet Aviation Flight Services, Inc.	Maryland	100
Jet Aviation France SAS	France	100
Jet Aviation Holding GmbH	Switzerland	100
Jet Aviation Holdings USA, Inc.	Delaware	100
Jet Aviation Houston, Inc.	Texas	100
Jet Aviation International, Inc.	Florida	100
Jet Aviation Management AG	Switzerland	100

Jet Aviation of America, Inc.	Maryland	100
Jet Aviation Savannah Holding, LLC	Delaware	100
Jet Aviation Services GmbH	Germany	100
Jet Aviation St. Louis, Inc.	Missouri	100
Jet Aviation Teterboro, LP	New Jersey	100
Jet Aviation Texas, Inc.	Texas	100
Jet Aviation/Palm Beach, Inc.	Florida	100
Jet Professionals, LLC	Delaware	100
Longreach Energy, LLC	Delaware	100
Material Service Resources Company, LLC	Delaware	100
Mediaware International Pty Ltd	Australia	100
Metro Machine Corp.	Virginia	100
Midwest Properties Sales, LLC	Delaware	100
NASSCO Holdings Incorporated	Delaware	100
National Steel and Shipbuilding Company	Nevada	100
Newberry Holdings, LLC	Virginia	100
OOO Jet Aviation Vnukovo	Russia	100
Page Europa Srl	Italy	100
Patriot I Shipping Corp.	Delaware	100
Patriot II Shipping Corp.	Delaware	100
Patriot IV Shipping Corp.	Delaware	100
Plane 79, LLC	Delaware	100
Prodelin India Private Limited	India	100
Proyectos Prohumane Mexico, S.A. de C.V.	Mexico	100
Quincy Maritime Corporation III	Delaware	100
Raven Acquisitions, LLC	Delaware	100
Santa Barbara Sistemas S.A.	Spain	100
Savannah Air Center, LLC	Georgia	100
SC3 LLC	Delaware	100
Signal Solutions, LLC	Virginia	100
Southern Illinois Recovery, Inc.	Delaware	100
St. Marks Powder, Inc.	Delaware	100
Tecnologias Internacionales de Manufactura S.A. de C.V.	Mexico	100
Vangent Servicios de Mexico, S.A. de C.V.	Mexico	100
Vertex Antennentechnik GmbH	Germany	100
Weco, LLC	Delaware	100

Consent of Independent Registered Public Accounting Firm

To the Board of Directors of General Dynamics Corporation:

We consent to the incorporation by reference in the registration statements (Nos. 333-107901, 333-159038, 333-159045, 333-181124, 333-186575, 333-186578, 333-208667 and 333-217656) on Form S-8 and registration statement No. 333-202961 on Form S-3ASR of General Dynamics Corporation of our reports dated February 12, 2018, with respect to:

- the Consolidated Balance Sheets of General Dynamics Corporation as of December 31, 2017 and 2016, 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, 2017, and the related notes (collectively, the Consolidated Financial Statements), and
- the effectiveness of internal control over financial reporting as of December 31, 2017,

which reports appear in the December 31, 2017 annual report on Form 10-K of General Dynamics Corporation.

/s/ KPMG LLP

McLean, Virginia
February 12, 2018

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENT, that each of the undersigned Directors of GENERAL DYNAMICS CORPORATION, a Delaware corporation, hereby constitutes and appoints each of PHEBE N. NOVAKOVIC, JASON W. AIKEN and GREGORY S. GALLOPOULOS as his or her true and lawful attorney-in-fact and agent, with full power of substitution, for and in his or her name, place and stead, in any and all capacities, to sign the 2017 Annual Report on Form 10-K of General Dynamics Corporation, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto each said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary as fully as to all intents and purposes as he or she might or could do in person, and hereby ratifying and confirming all that said attorney-in-fact and agent or his or her substitute or substitutes may lawfully do or cause to be done by virtue hereof.

IN WITNESS WHEREOF, the undersigned have hereunto set their hands this

10th
day of February 2018.

/s/ Nicholas D. Chabraja

Nicholas D. Chabraja

/s/ James S. Crown

James S. Crown

/s/ Rudy F. deLeon

Rudy F. deLeon

/s/ John M. Keane

John M. Keane

/s/ Lester L. Lyles

Lester L. Lyles

/s/ Mark M. Malcolm

Mark M. Malcolm

/s/ Phebe N. Novakovic

Phebe N. Novakovic

/s/ William A. Osborn

William A. Osborn

/s/ Catherine B. Reynolds

Catherine B. Reynolds

/s/ Laura J. Schumacher

Laura J. Schumacher

/s/ Peter A. Wall

Peter A. Wall

**CERTIFICATION BY CEO PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002**

I, Phebe N. Novakovic, certify that:

1. I have reviewed this annual report on Form 10-K of General Dynamics Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and we have:
 - (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
 - (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - (c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors:
 - (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Phebe N. Novakovic

Phebe N. Novakovic

Chairman and Chief Executive Officer

February 12, 2018

**CERTIFICATION BY CFO PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002**

I, Jason W. Aiken, certify that:

1. I have reviewed this annual report on Form 10-K of General Dynamics Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and we have:
 - (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
 - (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - (c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors:
 - (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Jason W. Aiken

Jason W. Aiken

Senior Vice President and Chief Financial Officer

February 12, 2018

**CERTIFICATION BY CEO PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the annual report of General Dynamics Corporation (the Company) on Form 10-K for the year ended December 31, 2017, as filed with the Securities and Exchange Commission on the date hereof (the Report), I, Phebe N. Novakovic, Chairman and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

1. the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Phebe N. Novakovic

Phebe N. Novakovic

Chairman and Chief Executive Officer

February 12, 2018

**CERTIFICATION BY CFO PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the annual report of General Dynamics Corporation (the Company) on Form 10-K for the year ended December 31, 2017, as filed with the Securities and Exchange Commission on the date hereof (the Report), I, Jason W. Aiken, Senior Vice President and Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

1. the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Jason W. Aiken

Jason W. Aiken

Senior Vice President and Chief Financial Officer

February 12, 2018