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

# FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934

Date of Report (Date of earliest event reported)
**April 27, 2016**

# Northrop Grumman Corporation

**(Exact name of registrant as specified in its charter)**

| | | |
|---|---|---|
| **DELAWARE** | **1-16411** | **80-0640649** |
| **(State or Other Jurisdiction of Incorporation)** | **(Commission File Number)** | **(IRS Employer Identification No.)** |

**2980 Fairview Park Drive, Falls Church, VA 22042**
**(Address of principal executive offices)(Zip Code)**
**(703) 280-2900**
**Registrant's telephone number, including area code**

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

**ITEM 8.01. OTHER EVENTS.**

Northrop Grumman Corporation (“we” or the “company”) is filing this Current Report on Form 8-K to recast the presentation of its consolidated financial statements that were filed on February 1, 2016 with the Securities and Exchange Commission (“SEC”) in the company’s Annual Report on Form 10-K for the year ended December 31, 2015 (the “2015 Form 10-K”) to reflect the changes in the company’s organizational structure and reportable segments that are described immediately below. This Form 8-K recasts disclosures in certain portions of the 2015 Form 10-K to reflect these changes in each of the periods presented.

At December 31, 2015, the company was aligned in four sectors: Aerospace Systems, Electronic Systems, Information Systems and Technical Services. Effective January 1, 2016, the company streamlined our sectors from four to three to better align our business with the evolving needs of our customers and enhance innovation across the company. The three current sectors are Aerospace Systems, Mission Systems and Technology Services. Mission Systems and Technology Services were created by merging elements of our former Electronic Systems, Information Systems and Technical Services sectors. The new Mission Systems sector is composed of the majority of our former Electronic Systems sector and the businesses from our former Information Systems sector focused on the development of new capabilities for our military and intelligence customers. The new Technology Services sector was formed by combining the services portfolio in the former Information Systems sector with the former Technical Services sector. Among other operations that were realigned, the military and civil space hardware business in Azusa, California, previously reporting to the Electronic Systems sector, moved to the Aerospace Systems sector, and the electronic attack business previously in the Aerospace Systems sector moved to the Mission Systems sector.

The company’s financial statements and other disclosures included in our Quarterly Report on Form 10-Q for the quarter ended March 31, 2016 (the “First Quarter 2016 Form 10-Q”) reflect this new reporting structure. The company is including in this Form 8-K the following items from the 2015 Form 10-K and revising portions of the disclosures contained in these items, for each of the periods presented, to reflect this change in the company’s organizational structure and reportable segments: Business (Item 1), Properties (Item 2), Management’s Discussion and Analysis of Financial Condition and Results of Operations (Item 7) and Financial Statements and Supplementary Data (Item 8, solely to reflect changes in Notes 1, 3 and 7 to the consolidated financial statements).

This Form 8-K should not be read to modify or update disclosures as presented in the 2015 Form 10-K to reflect any changes, events or activities occurring after the date of the filing of the 2015 Form 10-K, except for the segment changes described above. Therefore, this Form 8-K should be read in conjunction with the 2015 Form 10-K and the company’s filings made with the SEC subsequent to the filing of the 2015 Form 10-K, including the First Quarter 2016 Form 10-Q.

**ITEM 9.01. FINANCIAL STATEMENTS AND EXHIBITS.**

(d) Exhibits

Exhibit 23 Consent of Independent Registered Public Accounting Firm*

Exhibit 99.1 Item 1: Business*

Exhibit 99.2 Item 2: Properties*

Exhibit 99.3 Item 7: Management’s Discussion and Analysis of Financial Condition and Results of Operations*

Exhibit 99.4 Item 8: Financial Statements and Supplementary Data*

* filed herewith

**Signature(s)**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this Report to be signed on its behalf by the undersigned hereunto duly authorized.

Northrop Grumman Corporation
(Registrant)

| | | |
|---|---|---|
| April 27, 2016 | By: | /s/ Jennifer C. McGarey |
| (Date) | | (Signature)<br>Jennifer C. McGarey<br>Corporate Vice President and Secretary |

**EXHIBIT 23**

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

Northrop Grumman Corporation
2980 Fairview Park Drive
Falls Church, Virginia 22042

We consent to the incorporation by reference in Registration Statement Nos. 033-59815, 033-59853, 333-67266, 333-100179, 333-107734, 333-121104, 333-125120, 333-127317, and 333-175798 on Forms S-8; and Registration Statement No. 333-196238 on Form S-3; of our report dated February 1, 2016 (April 26, 2016 as to the reclassification of segment information as described in Notes 1, 3 and 7), relating to the consolidated financial statements of Northrop Grumman Corporation and subsidiaries, appearing in this Current Report on Form 8-K of Northrop Grumman Corporation dated April 27, 2016.

/s/ Deloitte & Touche LLP
McLean, Virginia
April 26, 2016

EXHIBIT 99.1

# PART I

## Item 1. Business

## HISTORY AND ORGANIZATION

### History

Northrop Grumman Corporation (herein referred to as “Northrop Grumman,” the “company,” “we,” “us,” or “our”) is a leading global security company. We offer a broad portfolio of capabilities and technologies that enable us to deliver innovative products, systems and solutions for applications that range from undersea to outer space and into cyberspace. We provide products, systems and solutions in unmanned systems; cyber; command, control, communications and computers (C4), intelligence, surveillance, and reconnaissance (C4ISR); strike aircraft; and logistics and modernization to government and commercial customers worldwide. We participate in many high-priority defense and government programs in the United States (U.S.) and abroad. We conduct most of our business with the U.S. Government, principally the Department of Defense (DoD) and intelligence community. We also conduct business with foreign, state and local governments and commercial customers. For a discussion of risks associated with our operations, see Risk Factors in Part I, Item 1A of the 2015 Form 10-K.

The company originally was formed in Hawthorne, California in 1939, as Northrop Aircraft Incorporated and was reincorporated in Delaware in 1985, as Northrop Corporation. Northrop Aircraft Incorporated was a principal developer of flying wing technology, including the B-2 Stealth Bomber. The company developed into one of the largest defense contractors in the world through a series of acquisitions, as well as organic growth. In 1994, we acquired Grumman Corporation (Grumman), after which time the company was renamed Northrop Grumman Corporation. Grumman was a premier military aircraft systems integrator and builder of the Lunar Module that first delivered humans to the surface of the moon. In 1996, we acquired the defense and electronics businesses of Westinghouse Electric Corporation, a world leader in the development and production of sophisticated radar and other electronic systems for the nation’s defense, civil aviation, and other U.S. and international applications. In 2001, we acquired Litton Industries, a global electronics and information technology company, and one of the nation's leading full service shipbuilders. In 2002, we acquired TRW Inc., a leading developer of military and civil space systems and satellite payloads, as well as a leading global integrator of complex, mission-enabling systems and services. In 2011, the company completed the spin-off to its shareholders of Huntington Ingalls Industries, Inc. (HII). HII operates our former Shipbuilding business, which was acquired in 2001, through the acquisitions of Newport News Shipbuilding and Litton Industries.

### Organization

At December 31, 2015, the company was aligned into four sectors: Aerospace Systems, Electronic Systems, Information Systems, and Technical Services.

*Subsequent Realignment* - Effective January 1, 2016, the company streamlined our sectors from four to three to better align our business with the evolving needs of our customers and enhance innovation across the company. Two new sectors were created by merging elements of our former Electronic Systems, Information Systems and Technical Services sectors. The new Mission Systems sector is composed of the majority of our former Electronic Systems sector and the businesses from our former Information Systems sector focused on the development of new capabilities for our military and intelligence customers. The services portfolio in the former Information Systems sector was combined with the former Technical Services sector to form the new Technology Services sector. Among other operations that were realigned, the military and civil space hardware business in Azusa, California, previously reporting to the Electronic Systems sector, moved to the Aerospace Systems sector, and the electronic attack business previously in the Aerospace Systems sector moved to the Mission Systems sector.

This sector realignment is reflected in the business descriptions below and in the accompanying financial information contained in this report.

## AEROSPACE SYSTEMS

Aerospace Systems, headquartered in Redondo Beach, California, is a leader in the design, development, integration and production of manned aircraft, autonomous systems, spacecraft, high-energy laser systems, microelectronics and other systems and subsystems. Aerospace Systems' customers, primarily U.S. Government agencies, use these systems in mission areas including intelligence, surveillance and reconnaissance (ISR), communications, battle management, strike operations, earth observation, satellite communications, space science and space exploration. The sector consists of three business areas, which are presented in a manner reflecting our core capabilities: Autonomous Systems, Manned Aircraft and Space.

*Autonomous Systems* - designs, develops, manufactures, and integrates ISR autonomous systems for tactical and strategic missions. Key ISR programs include the Global Hawk reconnaissance system, a proven high-altitude long-endurance system providing near real-time high resolution imagery of large geographical areas; the Triton aircraft system providing real-time ISR over vast ocean and coastal regions; the North Atlantic Treaty Organization (NATO) Alliance Ground Surveillance (AGS) system for multinational theater operations, peacekeeping missions, and disaster relief efforts; the Fire Scout aircraft system providing unprecedented situational awareness and precision targeting support; the Navy Unmanned Combat Air System demonstrating an unmanned combat air vehicle for carrier-based operations; and the Ground Mission Management System, providing high performance service for mission control solutions enabling unmanned mission capabilities.

*Manned Aircraft* - designs, develops, manufactures, and integrates airborne C4ISR, directed energy systems, tactical aircraft systems and long range strike aircraft systems. Key airborne C4ISR programs include the E-2D Advanced Hawkeye and Joint Surveillance Target Attack Radar System (JSTARS). Directed energy involves the design, development, and integration of laser weapon systems for air and sea platforms, and production of the Airborne Laser Mine Detection System for the U.S. Navy and International rotary wing customers. Tactical aircraft includes the design, development, manufacture and integration of F/A-18 aft fuselage and F-35 center fuselage sections. Key long range strike aircraft programs include the B-21 Long-Range Strike Bomber and sustainment and modernization services for the B-2 Spirit bomber.

*Space* - designs, develops, manufactures, and integrates spacecraft systems, subsystems, sensors and communications payloads in support of space science and C4ISR. Key programs include the James Webb Space Telescope, a large infrared telescope being built for the National Aeronautics and Space Administration that will be deployed in space to study the origins of the universe; Advanced Extremely High Frequency payloads providing survivable, protected communications to U.S. forces; Space-Based Infrared System payloads providing data for missile surveillance, missile defense, technical intelligence and battlespace characterization; and restricted programs.

**MISSION SYSTEMS**

Mission Systems, headquartered in Linthicum, Maryland, is a leader in advanced end-to-end mission solutions and multifunction systems for Department of Defense (DoD), national intelligence, international, federal civil, state and commercial customers. Major products and services include C4ISR systems; radar, electro-optical/infrared (EO/IR) and acoustic sensors; electronic warfare systems; cyber solutions; space systems; intelligence processing systems; air and missile defense (AMD) integration; navigation; and shipboard missile and encapsulated payload launch systems. The sector consists of three business areas: Sensors and Processing, Cyber and ISR, and Advanced Capabilities.

*Sensors and Processing* - delivers products, systems and services that support ground-based and airborne fixed and rotary wing platforms with radar, electronic warfare, communications, command and control (C2), Signals Intelligence (SIGINT), and situational awareness mission systems. Competencies include targeting, surveillance, air defense, and early warning & control radar systems; EO/IR and radio frequency (RF) self-protection, targeting and surveillance systems; electronic attack and electronic support systems; net-enabled battle management; communications and intelligence systems; digitized cockpits; and multi-sensor processing. Key programs include the Airborne Early Warning & Control (AEW&C) and air-to-ground sensors; Battlefield Airborne Communications Node (BACN); F-35 fire control radar, Distributed Aperture System (DAS), and the Communications, Navigation and Identification (CNI) integrated avionics system; Ground/Air Task Oriented Radar (G/ATOR); Large Aircraft Infrared Countermeasures (LAIRCM); Common Infrared Countermeasures (CIRCM); Scalable Agile Beam Radar (SABR); and the UH-60V Black Hawk integrated mission equipment package.

*Cyber and ISR* - delivers products, systems and services that support full-spectrum cyber solutions, space-based payload and exploitation systems, space-based C2 and processing systems, and enterprise integration of multi-intelligence mission data across all domains. Competencies include cyber mission management; large-scale cyber solutions for national security applications; missile warning and defense systems; weather and satellite communications; ground software systems; and geospatial intelligence and data fusion, specializing in the collection, processing, and exploitation of data. Key programs include restricted payload, exploitation and cyber programs; operational services to the United States Computer Emergency Readiness Team (US-CERT); worldwide IT coverage and support services through the Solutions for the Information Technology Enterprise (SITE); the Enterprise Application Development Integration and Sustainment (EADIS) program; and restricted programs.

*Advanced Capabilities* - provides integration and interoperability of net-enabled battle management, sensors, targeting and surveillance systems; air and missile defense C2; and global battlespace awareness. It also delivers products, systems and services that support maritime platforms and embedded Global Positioning Systems (GPS) for a range of platforms including ships, aircraft, spacecraft and weapons. Competencies include advanced AMD integration with land, air and space assets; shipboard missile and encapsulated payload launch systems; unmanned maritime vehicles and high-resolution undersea sensors; and inertial navigation systems. Key programs include the Integrated Air and Missile Defense Battle Command System (IBCS); the Missile Defense Agency Joint National Integration Center Research and Development Contract (JRDC); Ground-based Midcourse Defense (GMD) system; Surface Electronic Warfare Improvement Program (SEWIP) Block III; and Trident and Virginia-Class payload launch systems.

**TECHNOLOGY SERVICES**

Technology Services, headquartered in Herndon, Virginia, is a leading provider of logistics solutions supporting the full life cycle of platforms and systems for global defense and federal-civil customers. We deliver innovative, technology-driven solutions and services to enable cost-effective improvements for customer mission effectiveness. We provide a full spectrum of offerings including software and system sustainment, modernization of platforms and associated subsystems, advanced training solutions, and integrated logistics support. The sector comprises three business areas: Global Logistics and Modernization; Advanced Defense Services; and System Modernization and Services.

*Global Logistics and Modernization* - provides global logistics support, sustainment, operations and modernization for more than 60 air, sea and ground systems and weapon system components. Competencies include aircraft, electronics and software sustainment and engineering; electronic warfare/attack and avionics/electronics subsystems modernization; supply chain management; manned and unmanned weapon systems deployed logistics support; field services, on-going maintenance and technical assistance; and delivering rapid response in support of global customers. Portfolio capabilities are exhibited through: integration, delivery and global support of unmanned special mission aircraft solutions for platforms such as the MQ-5B Hunter; subsystem and component-level depot repair for products such as AAQ-24 LAIRCM; missile sustainment and modernization solutions for products including the Intercontinental Ballistic Missile Minuteman III; and weapon systems sustainment, refurbishment, overhaul, modernization and contractor logistics support for several unique low-density/high-demand platforms, including the KC-10, KC-30A and UK Airborne Warning and Control System.

*Advanced Defense Services* - provides advanced defense and security services, including land forces sustainment and modernization, systems security, training and operations, to strengthen national security for the U.S. and its allies. Key programs include Ministry of the National Guard Training Support, through our interest in a joint venture for which we consolidate the financial results, which provides equipment fielding, training and maintenance, simulator training and operations, tactical exercise development, logistics and operations support and English language training to the Ministry of the National Guard in Saudi Arabia; the Mission Command Training Program, the Army's premier leadership and staff training exercise program at the tactical and operational level; the Passenger Systems Program Directorate, which provides operations and maintenance support for the Department of Homeland Security, Customs and Border Protection computer and automated software applications and specialized equipment, development of new capabilities and applications, and existing application enhancements in response to evolving technologies, threats, and mission requirements; and Fort Irwin Logistics Services Support, which provides a full range of logistics support services and operates a large-scale maintenance and repair program of both tracked and tactical wheeled vehicles.

*System Modernization and Services* - provides full life cycle information system support including software development, modernization and sustainment, system engineering and integration, and network and infrastructure services for civilian agencies across federal, state, and local governments. In support of the modernization of civil agency mission critical and mission enabling information systems, extensive system and software development capabilities allow this business area to offer fraud detection and compliance services, data analysis and decision support tools, enterprise support services, and software system sustainment services. This business area provides benefits systems administration, fraud prevention, payment modernization and the science behind bioinformatics, public health and precision health to citizens and military personnel. This business area also provides information sharing and analysis solutions to national security agencies and federal law enforcement, as well as engineering sophisticated enterprise-wide solutions to design, build and manage resilient and secure IT infrastructures. Our capabilities provide proactive network monitoring, patch management, and desktop optimization to control and reduce overall operating costs.

## SELECTED FINANCIAL DATA AND SEGMENT OPERATING RESULTS

For a more complete understanding of our business, see Selected Financial Data in Part II, Item 6 of the 2015 Form 10-K. For a more complete understanding of our segment financial information, see Segment Operating Results in Part II, Item 7 and Note 3 to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K.

## CUSTOMER CONCENTRATION

Our largest customer is the U.S. Government. Sales to the U.S. Government accounted for 83 percent, 84 percent and 86 percent of sales during the years ended December 31, 2015, 2014 and 2013, respectively. For further information on sales by customer category, see Note 1 to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K. No single program accounted for more than ten percent of total sales during any period presented. See Risk Factors in Part I, Item 1A of the 2015 Form 10-K.

## COMPETITIVE CONDITIONS

We compete with many companies in the defense, intelligence and federal markets. BAE Systems, Boeing, Booz Allen Hamilton, Finmeccanica, General Dynamics, Harris, L-3 Communications, Leidos, Lockheed Martin, Raytheon and Thales are some of our primary competitors. Key characteristics of our industry include long operating cycles and intense competition, which is evident through the number of bid protests (competitor protests of U.S. Government procurement awards) and the number of competitors bidding on program opportunities.

It is common in the defense industry for work on major programs to be shared among a number of companies. A company competing to be a prime contractor may, upon ultimate award of the contract to another competitor, become a subcontractor for the ultimate prime contracting company. It is not unusual to compete for a contract award with a peer company and, simultaneously, perform as a supplier to or a customer of that same competitor on other contracts, or vice versa.

## SEASONALITY

No material portion of our business is considered to be seasonal.

## BACKLOG

At December 31, 2015, total backlog was $35.9 billion, compared with $38.2 billion at the end of 2014. For further information, see Backlog in Part II, Item 7 of Exhibit 99.3 of this Form 8-K.

## RESEARCH AND DEVELOPMENT

See Note 1 to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K.

## INTELLECTUAL PROPERTY

We routinely apply for and own a number of U.S. and foreign patents related to the products and services we provide. We also develop and protect intellectual property as trade secrets. In addition to owning a large portfolio of proprietary intellectual property, we license some intellectual property rights to and from third parties. The U.S. Government typically holds licenses to patents developed in the performance of U.S. Government contracts and may use or authorize others to use the inventions covered by these patents for certain purposes. See Risk Factors in Part I, Item 1A of the 2015 Form 10-K.

## RAW MATERIALS

We have not experienced significant delays in the supply or availability of raw materials, nor have we experienced a significant price increase for raw materials. See Risk Factors in Part I, Item 1A of the 2015 Form 10-K.

## EMPLOYEE RELATIONS

We believe that we maintain good relations with our approximately 65,000 employees. Approximately 2,600 are covered by 12 collective agreements in the U.S., of which we negotiated renewals of four in 2015 and expect to negotiate renewals of five in 2016. See Risk Factors in Part I, Item 1A of the 2015 Form 10-K.

## REGULATORY MATTERS

### Government Contract Security Restrictions

Certain programs with the U.S. Government that are prohibited by the customer from being publicly discussed are generally referred to as “restricted” in this Form 8-K and the 2015 Form 10-K. The consolidated financial statements and financial information in this Form 8-K and the 2015 Form 10-K reflect the operating results of our entire company, including restricted programs, under accounting principles generally accepted in the United States of America (GAAP).

**Contracts**
We generate the majority of our business from long-term contracts with the U.S. Government for development, production and support activities. Unless otherwise specified in a contract, allowable and allocable costs are billed to contracts with the U.S. Government under the requirements of the Federal Acquisition Regulation (FAR) and U.S. Government Cost Accounting Standards (CAS). Examples of costs incurred by us and not billed to the U.S. Government in accordance with the FAR and CAS include, but are not limited to, lobbying costs, certain legal costs, charitable donations, advertising costs, interest expense and unallowable employee compensation and benefits costs.

Our long-term contracts typically fall into one of two broad categories:

*Cost-type contracts* – Cost-type contracts include cost plus fixed fee, award fee and/or incentive fee contracts. Cost-type contracts provide for reimbursement of the contractor's allowable costs incurred plus fee. Cost-type contracts generally require that the contractor use its best efforts to accomplish the scope of the work within some specified time and some stated dollar limitation. Fees on cost-type contracts can be fixed in terms of dollar value or percentage of costs. Award and incentive fees are generally based on performance criteria such as cost, schedule, quality and/or technical performance. Award fees are determined and earned based on customer evaluation of the company's performance against contractual criteria, and are intended to provide motivation for excellence in contract performance. Incentive fees that are based on cost provide for an initially negotiated fee to be adjusted later, typically using a formula to measure performance against the associated criteria, based on the relationship of total allowable costs to total target costs. Award and incentive fees that can reasonably be estimated and are deemed reasonably assured are recorded over the performance period of the contract.

*Fixed-price contracts* – A firm fixed-price contract is a contract in which the specified scope of work is agreed to for a price that is a pre-determined, negotiated amount and not generally subject to adjustment regardless of costs incurred by the contractor, absent changes in scope by the customer. Certain fixed-price incentive fee contracts provide for reimbursement of the contractor's allowable costs plus a fee up to a cost ceiling amount, typically through a cost-sharing ratio that affects profitability. These types of fixed-price incentive fee contracts effectively become firm fixed-price contracts once the cost-share ceiling is reached. Time-and-materials contracts are considered fixed-price contracts as they specify a fixed hourly rate for each labor hour charged.

See Note 1 to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K and Risk Factors in Part I, Item 1A of the 2015 Form 10-K.

The following table summarizes sales for the year ended December 31, 2015, recognized by contract type and customer:

| ($ in millions) | U.S. Government[1] | International and Other Customers[2] | Total | Percentage of Total Sales |
|---|---|---|---|---|
| Cost-type contracts | $ 11,558 | $ 641 | $ 12,199 | 52% |
| Fixed-price contracts | 7,900 | 3,427 | 11,327 | 48% |
| Total sales | $ 19,458 | $ 4,068 | $ 23,526 | 100% |

[1] Sales to the U.S. Government include sales from contracts for which Northrop Grumman is the prime contractor, as well as those for which the company is a subcontractor and the ultimate customer is the U.S. Government. Each of the company's segments derives substantial revenue from the U.S. Government.

[2] Sales to International and Other Customers include foreign military sales contracted through the U.S. Government, direct commercial sales with governments outside the U.S., sales to state and local governments, and sales to commercial customers.

Profit margins may vary materially depending on, among other things, negotiated contract fee arrangements, achievement of performance objectives and the stage of performance at which the right to receive fees, particularly under incentive and award fee contracts, is determined.

We monitor our policies and procedures with respect to our contracts on a regular basis to enhance consistent application under similar terms and conditions, as well as compliance with applicable government regulations and laws. In addition, costs incurred and allocated to contracts with the U.S. Government are routinely audited by the Defense Contract Audit Agency.

**Environmental**

Our operations are subject to and affected by federal, state, local and foreign laws and regulations relating to the protection of the environment. In 2010, we established goals for the reduction of greenhouse gas emissions and implementation of best management practices for water use and solid waste; those goals were achieved as of December 31, 2014. In 2015, we announced our 2020 environmental sustainability goals: to reduce absolute greenhouse gas emissions by 30 percent from 2010 levels; to reduce potable water use by 20 percent from 2014 levels; and achieve a 70 percent solid waste diversion rate (from landfills).

We have recorded liabilities and have incurred and expect to continue to incur capital and operating costs to comply with applicable environmental laws and regulations and to achieve our environmental sustainability commitments. See Risk Factors in Part I, Item 1A of the 2015 Form 10-K and Notes 1 and 11 to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K.

**EXECUTIVE OFFICERS**

See Part III, Item 10 of the 2015 Form 10-K, for information about our executive officers.

**AVAILABLE INFORMATION**

Our principal executive offices are located at 2980 Fairview Park Drive, Falls Church, Virginia 22042. Our telephone number is (703) 280-2900 and our home page on the Internet is www.northropgrumman.com.

Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and proxy statement for the annual shareholders' meeting, as well as any amendments to those reports, are available free of charge through our website as soon as reasonably practicable after we file them with the Securities and Exchange Commission (SEC). You can learn more about us by reviewing our SEC filings on the investor relations page of our website.

The SEC also maintains a website at www.sec.gov that contains reports, proxy statements and other information about SEC registrants, including Northrop Grumman Corporation. You may also obtain these materials at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You can obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330.

References to our website and the SEC's website in this report are provided as a convenience and do not constitute, and should not be viewed as, incorporation by reference of the information contained on, or available through, such websites. Such information should not be considered a part of this report, unless otherwise expressly incorporated by reference in this report.

**EXHIBIT 99.2**

**Item 2. Properties**

At December 31, 2015, we had approximately 34 million square feet of floor space at 467 separate locations, primarily in the U.S., for manufacturing, warehousing, research and testing, administration and various other uses. At December 31, 2015, we leased to third parties approximately 250,000 square feet of our owned and leased facilities, and had vacant floor space of approximately 1 million square feet.

At December 31, 2015, we had major operations at the following locations:

**Aerospace Systems**

Azusa, Carson, El Segundo, Manhattan Beach, Mojave, Palmdale, Redondo Beach and San Diego, CA; Melbourne and St. Augustine, FL; Devens, MA; and Moss Point, MS.

**Mission Systems**

Huntsville, AL; McClellan, Redondo Beach, San Diego, San Jose, Sunnyvale and Woodland Hills, CA; Aurora and Colorado Springs, CO; Apopka, FL; Rolling Meadows, IL; Annapolis, Annapolis Junction, Elkridge, Halethorpe, Linthicum and Sykesville, MD; Bellevue, NE; Bethpage and Williamsville, NY; Beavercreek and Cincinnati, OH; Salt Lake City, UT; and Chantilly, Charlottesville, Fairfax, McLean and Richmond, VA. Locations outside the U.S. include the United Kingdom, Germany and Italy.

**Technology Services**

Sierra Vista, AZ; Warner Robins, GA; Lake Charles, LA; Baltimore, MD; Chester and Herndon, VA; and a location in France.

**Corporate**

Falls Church and Lebanon, VA and Irving, TX.

The following is a summary of our floor space at December 31, 2015:

| *Square feet (in thousands)* | Owned | Leased | U.S. Government Owned/Leased | Total |
|---|---|---|---|---|
| Aerospace Systems | 7,237 | 5,894 | 1,930 | 15,061 |
| Mission Systems | 7,886 | 7,083 | — | 14,969 |
| Technology Services | 440 | 2,769 | 1 | 3,210 |
| Corporate | 657 | 495 | — | 1,152 |
| Total | 16,220 | 16,241 | 1,931 | 34,392 |

We maintain our properties in good operating condition and believe that the productive capacity of our properties is adequate to meet current contractual requirements and those for the foreseeable future.

**EXHIBIT 99.3**

**FORWARD-LOOKING STATEMENTS AND PROJECTIONS**

This Current Report on Form 8-K, our Annual Report on Form 10-K and the information we are incorporating by reference contain statements, other than statements of historical fact, that constitute "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as "expect," "intend," "may," "could," "plan," "project," "forecast," "believe," "estimate," "outlook," "anticipate," "trends," "goals" and similar expressions generally identify these forward-looking statements. Forward-looking statements include, among other things, statements relating to our future financial condition, results of operations and cash flows. Forward-looking statements are based upon assumptions, expectations, plans and projections that we believe to be reasonable when made, but which may change over time. These statements are not guarantees of future performance and inherently involve a wide range of risks and uncertainties that are difficult to predict. Specific risks that could cause actual results to differ materially from those expressed or implied in these forward-looking statements include, but are not limited to, those identified under Risk Factors in Part I, Item 1A of the 2015 Form 10-K and other important factors disclosed in this report and from time to time in our other filings with the SEC.

You are urged to consider the limitations on, and risks associated with, forward-looking statements and not unduly rely on the accuracy of forward-looking statements. These forward-looking statements speak only as of the date this report is first filed or, in the case of any document incorporated by reference, the date of that document. We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law.

**PART II**

**Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations**

**OVERVIEW**

**U.S. Political and Economic Environment**

The U.S. Government continues to face substantial fiscal and economic challenges, which affect funding for its discretionary and non-discretionary budgets. Part I of the Budget Control Act of 2011 (Budget Control Act) provided for a reduction in planned defense budgets by at least $487 billion over a ten year period. Part II mandated substantial additional reductions, through a process known as "sequestration," which took effect in March 2013.

In December 2013, Congress passed the National Defense Authorization Act (NDAA). Congress also passed, and the President signed into law, the Bipartisan Budget Act of 2013, which set discretionary spending levels for fiscal year (FY) 2014 and FY 2015. The legislation provided for additional budget funding of approximately $63 billion over FY 2014 and FY 2015. The additional funding alleviated some budget cuts that would otherwise have been instituted through sequestration in FY 2014 and FY 2015.

In December 2014, Congress passed and the President signed into law the Consolidated and Further Appropriations Act of 2015, providing for federal spending levels for FY 2015 consistent with the Bipartisan Budget Act of 2013.

On November 2, 2015, the President signed into law the Bipartisan Budget Act of 2015 (the Budget Act). The Budget Act raises the debt ceiling until March 2017 and raises the sequester caps imposed by the Budget Control Act by $80 billion, split equally between defense and non-defense spending, over the next two years ($50 billion in FY 2016 and $30 billion in FY 2017).

On December 18, 2015, Congress passed and the President signed the Consolidated Appropriations Act of 2016, which provides funding for the U.S. Government for FY 2016, providing $1.1 trillion in discretionary funding for federal agencies through September 2016. The FY 2016 DoD budget approved by Congress is approximately $581 billion (including $58 billion for Overseas Contingency Operations (OCO)), which represents an approximately four percent increase relative to the DoD funding for FY 2015.

The federal budget continues to be the subject of considerable debate, which could have a significant impact on defense spending broadly and the company's programs in particular.

For further information on the risks we face from the current political and economic environment, see Risk Factors in Part I, Item 1A of the 2015 Form 10-K.

**Operating Performance Assessment and Reporting**

We manage and assess our business based on our performance on contracts and programs (typically two or more closely-related contracts). We recognize sales from our portfolio of long-term contracts primarily using the cost-to-cost method of percentage of completion accounting, but in some cases we utilize the units-of-delivery method of percentage of completion accounting. As a result, sales tend to fluctuate in concert with costs incurred across our large portfolio of contracts. Due to Federal Acquisition Regulation (FAR) rules that govern our U.S Government business and related Cost Accounting Standards (CAS), most types of costs are allocable to U.S. Government contracts. As such, we do not focus on individual cost groupings (such as manufacturing, engineering and design labor costs, subcontractor costs, material costs, overhead costs and general and administrative costs), as much as we do on total contract cost, which is the key driver of our sales and operating income.

In evaluating our operating performance, we look primarily at changes in sales and operating income, including the effects of meaningful changes in operating income as a result of changes in contract estimates. Where applicable, significant fluctuations in operating performance attributable to individual contracts or programs, or changes in a specific cost element across multiple contracts, are described in our analysis. Based on this approach and the nature of our operations, the discussion below of results of operations first focuses on our three segments before distinguishing between products and services. Changes in sales are generally described in terms of volume, deliveries or other indicators of sales activity, and contract mix. For purposes of this discussion, volume generally refers to increases or decreases in sales or cost from production/service activity levels or delivery rates. Performance generally refers to changes in estimates-at-completion (EACs) for contract operating margin rates during the period (net EAC adjustments), as well as the continuing effect of prior net EAC adjustments.

## CONSOLIDATED OPERATING RESULTS

Selected financial highlights are presented in the table below:

| | Year Ended December 31 | | | % Change in | |
|---|---|---|---|---|---|
| *$ in millions, except per share amounts* | **2015** | 2014 | 2013 | **2015** | 2014 |
| Sales | **$ 23,526** | $ 23,979 | $ 24,661 | **(2)%** | (3)% |
| Operating costs and expenses | **20,450** | 20,783 | 21,538 | **(2)%** | (4)% |
| Operating income | **3,076** | 3,196 | 3,123 | **(4)%** | 2 % |
| *Operating margin rate* | ***13.1%*** | *13.3%* | *12.7%* | | |
| Federal and foreign income tax expense | **800** | 868 | 911 | **(8)%** | (5)% |
| *Effective income tax rate* | ***28.7%*** | *29.6%* | *31.8%* | | |
| **Net earnings** | **1,990** | 2,069 | 1,952 | **(4)%** | 6 % |
| Diluted earnings per share | **10.39** | 9.75 | 8.35 | **7 %** | 17 % |
| Net cash provided by operating activities | **$ 2,162** | $ 2,593 | $ 2,483 | **(17)%** | 4 % |

**Sales**

*2015* – Sales decreased $453 million, or 2 percent, as compared with 2014, primarily due to lower sales on U.S. Government contracts across the company, partially offset by an increase in international sales at Aerospace Systems.

*2014* – Sales decreased $682 million, or 3 percent, as compared with 2013, primarily due to lower sales on U.S. Government contracts, partially offset by an increase in international sales across the company.

See "Revenue Recognition" in Note 1 to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K for further information on sales by customer category.

See Segment Operating Results below for further information by segment and the Product and Service Analysis section that follows Segment Operating Results for product and service detail.

**Operating Costs and Expenses**

Operating costs and expenses primarily comprise labor, material, subcontractor and overhead costs, and are generally allocated to contracts as incurred. In accordance with industry practice and the regulations that govern cost accounting requirements for government contracts, most general management and corporate expenses incurred at the segment and corporate locations are considered allowable and allocable costs. Allowable and allocable general and administrative costs, including independent research and development (IR&D) and certain bid and proposal costs, are allocated on a systematic basis to contracts in progress.

Operating costs and expenses comprise the following:

| | Year Ended December 31 | | | % Change in | |
|---|---|---|---|---|---|
| *$ in millions* | **2015** | 2014 | 2013 | **2015** | 2014 |
| Product costs | **$ 10,333** | $ 10,431 | $ 10,623 | **(1)%** | (2)% |
| Service costs | **7,551** | 7,947 | 8,659 | **(5)%** | (8)% |
| General and administrative expenses | **2,566** | 2,405 | 2,256 | **7 %** | 7 % |
| Operating costs and expenses | **$ 20,450** | $ 20,783 | $ 21,538 | **(2)%** | (4)% |
| Operating costs and expenses as a % of sales | **86.9%** | 86.7% | 87.3% | | |

*2015* – Operating costs and expenses as a percentage of sales increased in 2015 as compared with 2014, which reduced our operating margin rate to 13.1 percent from 13.3 percent in the prior year period. The increase in operating costs and expenses as a percentage of sales was driven by $179 million of lower segment operating income, as described in the Segment Operating Results section below, and $21 million in higher unallocated corporate expenses, partially offset by a $79 million increase in our net FAS (GAAP Financial Accounting Standards)/CAS pension adjustment. For further information regarding net FAS/CAS pension adjustment and unallocated corporate expenses, see Note 3 to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K.

*2014* – Operating costs and expenses as a percentage of sales declined in 2014 as compared with 2013, which increased our operating margin rate to 13.3 percent from 12.7 percent in the prior year period. The reduction in operating costs and expenses as a percentage of sales was driven by a $101 million increase in our net FAS/CAS pension adjustment and $19 million of higher segment operating income, partially offset by $50 million in higher unallocated corporate expenses.

*2015* – General and administrative expenses as a percentage of sales increased to 10.9 percent in 2015 from 10.0 percent in 2014, principally due to an increase in IR&D as we continue to invest in future business opportunities.

*2014* – General and administrative expenses as a percentage of sales increased to 10.0 percent in 2014 from 9.1 percent in 2013, principally due to an increase in IR&D as we continue to invest in future business opportunities.

For further information regarding product and service sales and costs, see the Product and Service Analysis section that follows Segment Operating Results.

**Operating Income and Margin Rate**
We define operating income as sales less operating costs and expenses, which includes general and administrative expenses. Operating margin rate is defined as operating income as a percentage of sales.

*2015* – Operating income decreased $120 million, or 4 percent, as compared with 2014, and operating margin rate decreased to 13.1 percent from 13.3 percent in 2014, primarily due to the lower sales volume described above and the absence in 2015 of a $75 million benefit realized in 2014 in connection with agreements reached with the U.S. Government to settle certain claims relating to use of the company's intellectual property and a terminated program.

*2014* – Operating income increased $73 million, or 2 percent, as compared with 2013, and operating margin rate increased to 13.3 percent from 12.7 percent in 2013, primarily due to a $101 million increase in our net FAS/CAS pension adjustment and higher operating income at Aerospace Systems due to the settlements described above, partially offset by higher unallocated corporate expenses.

**Federal and Foreign Income Taxes**
*2015* – Our effective tax rate for 2015 was 28.7 percent, as compared with 29.6 percent in 2014. This reduction was driven by a $76 million increase in research credits primarily resulting from additional credits claimed on our prior year tax returns, partially offset by a $51 million benefit recorded in 2014 for the partial resolution of the Internal Revenue Service (IRS) examination of our 2007-2009 tax returns.

*2014* – Our effective tax rate for 2014 was 29.6 percent, as compared with 31.8 percent in 2013. The decline in the company's lower effective tax rate for 2014 reflects a $51 million benefit for the partial resolution of our 2007-2009 IRS examination.

**Net Earnings**
*2015* – Net earnings for 2015 decreased $79 million, or 4 percent, as compared with 2014, primarily due to lower operating income and higher interest expense, partially offset by the lower effective tax rate described above.

*2014* – Net earnings for 2014 increased $117 million, or 6 percent, as compared with 2013, primarily due to higher operating income and a lower effective tax rate, partially offset by higher interest expense.

**Diluted Earnings Per Share**
*2015* – Diluted earnings per share for 2015 increased $0.64, or 7 percent, as compared with 2014. The increase is primarily due to a 10 percent reduction in weighted-average diluted shares outstanding resulting from shares repurchased in 2014 and 2015, partially offset by the 4 percent decline in net earnings discussed above.

*2014* – Diluted earnings per share for 2014 increased $1.40, or 17 percent, as compared with 2013. The increase is primarily due to a 9 percent reduction in weighted-average diluted shares outstanding resulting from shares repurchased in 2013 and 2014 and the 6 percent increase in net earnings discussed above.

**Net Cash Provided by Operating Activities**
See "Operating Cash Flow" in the Liquidity and Capital Resources section below for further information on net cash provided by operating activities.

## SEGMENT OPERATING RESULTS

**Basis of Presentation**
At December 31, 2015, the company was aligned in four segments: Aerospace Systems, Electronic Systems, Information Systems and Technical Services. Effective January 1, 2016, the company realigned our segments from four to three: Aerospace Systems, Mission Systems and Technology Services. The operating results for all periods presented have been recast to reflect this realignment. For a more complete description of each segment's products and services and for further information, see Business in Part I, Item 1 of Exhibit 99.1 of this Form 8-K.

This section discusses segment sales, operating income and operating margin rates. A reconciliation of segment sales to total sales is provided in Note 3 to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K. A reconciliation of segment operating income to total operating income, as well as a discussion of the reconciling items, is provided in Note 3 to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K. For purposes of the discussion in this Segment Operating Results section, references to operating income and operating margin rate reflect segment operating income and segment operating margin rate.

**Segment Operating Income and Margin Rate**
Segment operating income, as reconciled in the Reconciliation of Segment Operating Income to Total Operating Income table below, is a non-GAAP measure and is used by management as an internal measure for financial performance of our operating segments. Segment operating income reflects total earnings from our three segments, including allocated pension expense recognized under CAS, and excludes unallocated corporate items, including FAS pension expense.

| | Year Ended December 31 | | | % Change in | |
|---|---|---|---|---|---|
| *$ in millions* | **2015** | 2014 | 2013 | **2015** | 2014 |
| Segment operating income | **$ 2,920** | $ 3,099 | $ 3,080 | **(6)%** | 1% |
| *Segment operating margin rate* | ***12.4%*** | *12.9%* | *12.5%* | | |

*2015* - Segment operating income for 2015 decreased $179 million, or 6 percent, as compared with 2014 and segment operating margin rate decreased to 12.4 percent from 12.9 percent in 2014. The decrease in segment operating income was principally due to lower sales volume and the absence in 2015 of the $75 million in settlements described above and a benefit of approximately $45 million from lower 2014 CAS costs due to passage of the Highway and Transportation Funding Act of 2014 (HATFA). The absence in 2015 of the noted settlements and HATFA benefits was the primary driver of the lower 2015 operating margin rate.

*2014* - Segment operating income for 2014 increased $19 million, or 1 percent, as compared with 2013 and segment operating margin rate increased to 12.9 percent from 12.5 percent in 2013. The increase in segment operating income and margin rate was principally due to the benefits recognized as a result of the settlements and the HATFA legislation described above. These increases more than offset the impact of lower sales volume.

*Net EAC Adjustments* - We record changes in estimated contract operating margin at completion (net EAC adjustments) using the cumulative catch-up method of accounting. In aggregate, net EAC adjustments can have a significant effect on reported sales and operating income and are presented in the table below:

| | Year Ended December 31 | | |
|---|---|---|---|
| *$ in millions* | **2015** | 2014 | 2013 |
| Favorable EAC adjustments | **$ 924** | $ 922 | $ 1,044 |
| Unfavorable EAC adjustments | **(344)** | (258) | (291) |
| Net EAC adjustments | **$ 580** | $ 664 | $ 753 |

Net EAC adjustments by segment are presented in the table below:

| | Year Ended December 31 | | |
|---|---|---|---|
| *$ in millions* | **2015** | 2014 | 2013 |
| Aerospace Systems | **$ 352** | $ 359 | $ 401 |
| Mission Systems | **169** | 295 | 341 |
| Technology Services | **68** | 32 | 43 |
| Eliminations | **(9)** | (22) | (32) |
| Net EAC adjustments | **$ 580** | $ 664 | $ 753 |

*Reconciliation of Segment Operating Income to Total Operating Income* - The table below reconciles segment operating income to total operating income by including the impact of net FAS/CAS pension adjustments, as well as certain corporate-level expenses, which are not considered allowable or allocable under applicable CAS or FAR (unallocated corporate expenses). See Note 3 to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K for further information on the net FAS/CAS pension adjustment and unallocated corporate expenses.

| | Year Ended December 31 | | | % Change in | |
|---|---|---|---|---|---|
| *$ in millions* | **2015** | 2014 | 2013 | **2015** | 2014 |
| Segment operating income | **$ 2,920** | $ 3,099 | $ 3,080 | **(6)%** | 1 % |
| CAS pension expense | **703** | 384 | 542 | **83 %** | (29)% |
| Less: FAS pension expense | **(355)** | (115) | (374) | **209 %** | (69)% |
| Net FAS/CAS pension adjustment | **348** | 269 | 168 | **29 %** | 60 % |
| Unallocated corporate expenses | **(190)** | (169) | (119) | **12 %** | 42 % |
| Other | **(2)** | (3) | (6) | **(33)%** | (50)% |
| Total operating income | **$ 3,076** | $ 3,196 | $ 3,123 | **(4)%** | 2 % |

**Aerospace Systems**

| | Year Ended December 31 | | | % Change in | |
|---|---|---|---|---|---|
| *$ in millions* | **2015** | 2014 | 2013 | **2015** | 2014 |
| Sales | **$ 9,940** | $ 9,910 | $ 9,999 | **— %** | (1)% |
| Operating income | **1,205** | 1,285 | 1,214 | **(6)%** | 6 % |
| *Operating margin rate* | ***12.1%*** | *13.0%* | *12.1%* | | |

*2015* - Aerospace Systems sales for 2015 were comparable to the prior year. Sales in 2014 included the $75 million in settlements described above. Excluding the settlements, sales for 2015 increased $105 million, or 1 percent, as compared to 2014. The increase is primarily due to higher volume on Autonomous Systems and Space programs, partially offset by lower volume on Manned Aircraft programs. Autonomous Systems sales reflect higher volume on a number of programs, including Global Hawk, partially offset by lower volume on the Fire Scout and NATO Alliance Ground Surveillance (AGS) programs. Sales in Manned Aircraft declined principally due to fewer F/A-18 deliveries, as that program ramps down, and lower volume on restricted programs, partially offset by the transition to full rate production on the E-2D Advanced Hawkeye program and increased deliveries on the F-35 program. Space sales include higher volume on restricted programs, partially offset by lower volume on the Advanced Extremely High Frequency (AEHF) program.

Operating income for 2015 decreased $80 million, or 6 percent, and operating margin rate decreased to 12.1 percent from 13.0 percent. Lower operating income and margin rate in 2015 were primarily due to the benefits recognized in 2014 associated with the settlements described above.

*2014* - Aerospace Systems sales for 2014 decreased $89 million, or 1 percent, as compared with 2013, and include the impact of the settlements described above. Excluding the settlements, sales for 2014 decreased $164 million, or 2 percent, as compared to 2013. The decrease is primarily due to lower volume on Autonomous Systems and Space programs, partially offset by higher volume on Manned Aircraft programs. Autonomous Systems sales reflect declines of $136 million on Global Hawk due to lower production activity and $111 million on Fire Scout as a result of lower development activity. These declines were partially offset by $135 million of higher volume on the NATO AGS program. The decrease in Space programs is mainly due to lower volume on the James Webb Space Telescope and AEHF programs. The increase in Manned Aircraft sales reflects higher volume on restricted programs and an $87 million increase on the E-2D Advanced Hawkeye program, partially offset by lower volume on the JSTARS, F-35 and B-2 programs.

Operating income for 2014 increased $71 million, or 6 percent, and operating margin rate increased to 13.0 percent, from 12.1 percent. Higher operating income and margin rate in 2014 were primarily due to the settlements described above and improved performance.

**Mission Systems**

| | Year Ended December 31 | | | % Change in | |
|---|---|---|---|---|---|
| *$ in millions* | **2015** | 2014 | 2013 | **2015** | 2014 |
| Sales | **$ 10,674** | $ 11,001 | $ 11,468 | **(3)%** | (4)% |
| Operating income | **1,410** | 1,557 | 1,619 | **(9)%** | (4)% |
| *Operating margin rate* | ***13.2%*** | *14.2%* | *14.1%* | | |

*2015* - Mission Systems sales for 2015 decreased $327 million, or 3 percent, as compared with 2014. The decrease was due to lower volume across the sector. Advanced Capabilities sales decreased primarily due to the impact of in-theater force reductions, lower volume on the Consolidated Afloat Network and Enterprise Services program and completion of the Ground Combat Vehicle contract. These decreases were partially offset by higher volume on marine systems and missile defense programs. The decrease in Cyber and ISR sales is primarily due to lower volume on restricted programs, partially offset by higher volume on cyber solutions programs. Sensors and Processing sales decreased primarily due to ramp-down on an international program and lower volume on the LITENING program. These decreases were partially offset by ramp-up on the G/ATOR program and higher volume on fixed wing avionics and C4ISR programs.

Operating income for 2015 decreased $147 million, or 9 percent, and operating margin rate decreased to 13.2 percent from 14.2 percent. Operating income and margin rate for 2015 decreased primarily due to business mix changes, which resulted in lower volume for mature fixed price production programs and higher volume for cost-type development programs, as well as less favorable performance on Sensors and Processing and Advanced Capabilities programs.

*2014* - Mission Systems sales for 2014 decreased $467 million, or 4 percent, as compared with 2013. The decrease was primarily due to lower volume on Sensors and Processing and Advanced Capabilities programs, partially offset by higher volume on Cyber and ISR programs. Sensors and Processing sales decreased primarily due to lower volume on fixed wing avionics & C4ISR programs, including fewer deliveries on infrared countermeasures (IRCM) programs; lower deliveries on combat avionics programs; and lower volume on communications programs due to in-theater force reductions, reduced funding levels and the wind-down of various programs. The decrease in Advanced Capabilities sales is primarily due to the impact of in-theater force reductions and lower volume on navigation and positioning systems programs. Cyber and ISR sales increased principally due to higher volume on a restricted program.

Operating income for 2014 decreased $62 million, or 4 percent, and operating margin rate was comparable to the prior year. Operating income for 2014 declined primarily due to a reduction in net EAC adjustments, lower volume and the absence in 2014 of the benefit from the reversal of a $26 million non-programmatic risk reserve in 2013.

**Technology Services**

| *$ in millions* | Year Ended December 31 **2015** | 2014 | 2013 | % Change in **2015** | 2014 |
|---|---|---|---|---|---|
| Sales | **$ 4,819** | $ 4,902 | $ 4,992 | **(2)%** | (2)% |
| Operating income | **514** | 461 | 464 | **11 %** | (1)% |
| *Operating margin rate* | ***10.7%*** | *9.4%* | *9.3%* | | |

*2015* - Technology Services sales for 2015 decreased $83 million, or 2 percent, as compared with 2014. The decrease is principally due to lower volume on Global Logistics and Modernization (GLM) and System Modernization and Services (SMS) programs. The decrease in GLM is mainly due to ramp-down activities on the InterContinental Ballistic Missile (ICBM) program, partially offset by higher volume on intercompany restricted work. SMS sales reflect lower volume across a number of programs, partially offset by higher volume on the Total Information Processing Support Services and Social Security Administration IT Support Services programs.

Operating income for 2015 increased $53 million, or 11 percent, and operating margin rate increased to 10.7 percent from 9.4 percent. The increase in operating income and margin rate in 2015 reflects improved performance, partially offset by the decline in sales volume described above and lower income from an unconsolidated joint venture than in the prior year period.

*2014* - Technology Services sales for 2014 decreased $90 million, or 2 percent, as compared with 2013. The decrease is principally due to lower volume on Advanced Defense Services (ADS) and GLM programs, partially offset by higher volume on SMS programs. ADS sales reflect lower volume across a number of programs, partially offset by higher volume on the Saudi Arabian Ministry of National Guard Training Support (MNG TSC) program. GLM sales decreased primarily due to lower volume on the ICBM and Hunter programs, partially offset by growth in international sales, principally as a result of the acquisition of Qantas Defence Services Pty Limited (QDS) in the first quarter of 2014. The increase in SMS is mainly due to higher volume in postal automation programs.

Operating income for 2014 decreased $3 million, or 1 percent, and operating margin rate was comparable to the prior year. Lower operating income in 2014 was primarily due to the decline in sales volume described above.

**PRODUCT AND SERVICE ANALYSIS**

The following table presents product and service sales and operating costs and expenses by segment:

| *$ in millions* | Year Ended December 31 **2015** | | 2014 | | 2013 | |
|---|---|---|---|---|---|---|
| **Segment Information:** | **Sales** | **Operating Costs and Expenses** | Sales | Operating Costs and Expenses | Sales | Operating Costs and Expenses |
| **Aerospace Systems** | | | | | | |
| Product | **$ 7,976** | **$ 7,025** | $ 7,970 | $ 6,906 | $ 8,270 | $ 7,248 |
| Service | **1,964** | **1,710** | 1,940 | 1,719 | 1,729 | 1,537 |
| **Mission Systems** | | | | | | |
| Product | **6,448** | **5,532** | 6,505 | 5,478 | 6,207 | 5,184 |
| Service | **4,226** | **3,732** | 4,496 | 3,966 | 5,261 | 4,665 |
| **Technology Services** | | | | | | |
| Product | **358** | **339** | 329 | 356 | 297 | 295 |
| Service | **4,461** | **3,966** | 4,573 | 4,085 | 4,695 | 4,233 |
| **Segment Totals** | | | | | | |
| Total Product | **$ 14,782** | **$ 12,896** | $ 14,804 | $ 12,740 | $ 14,774 | $ 12,727 |
| Total Service | **10,651** | **9,408** | 11,009 | 9,770 | 11,685 | 10,435 |
| Intersegment eliminations | **(1,907)** | **(1,698)** | (1,834) | (1,630) | (1,798) | (1,581) |
| Total Segment[(1)] | **$ 23,526** | **$ 20,606** | $ 23,979 | $ 20,880 | $ 24,661 | $ 21,581 |

(1) The reconciliation of segment operating income to total operating income, as well as a discussion of the reconciling items, is included in the Segment Operating Results section above.

**Product Sales and Product Costs**
*2015* - Product sales for 2015 were comparable to 2014. Sales in 2014 included the $75 million in settlements at Aerospace Systems as described above and sales in 2015 reflect lower product sales at Mission Systems and higher product sales at Technology Services. The decrease at Mission Systems was primarily due to ramp-down on an international program and lower product sales on certain Cyber and ISR programs, partially offset by higher F-35 volume. The increase at Technology Services was primarily due to higher volume on intercompany restricted work.

Product costs for 2015 increased $156 million, or 1 percent, as compared to 2014. The increase was primarily due to higher product costs at Aerospace Systems and Mission Systems due to lower performance and changes in business mix.

*2014* - Product sales for 2014 were slightly higher than 2013, primarily due to higher product sales at Mission Systems, offset by lower product sales at Aerospace Systems. The increase at Mission Systems was primarily due to higher product sales on certain restricted programs. The decrease at Aerospace Systems was primarily driven by lower product volume on Autonomous Systems and Space programs, partially offset by the settlements described in the Segment Operating Results section above.

Product costs for 2014 were slightly higher than 2013, consistent with the changes in product sales described above.

**Service Sales and Service Costs**
*2015* - Service sales for 2015 decreased $358 million, or 3 percent, as compared with 2014. The decrease was primarily due to lower service sales at Mission Systems and Technology Services. The decrease at Mission Systems was primarily due to lower volume on certain Advanced Capabilities and unmanned aircraft systems programs, including the impact of in-theater force reductions. The decrease at Technology Services was primarily due to lower service sales on certain SMS programs.

Service costs for 2015 decreased $362 million, or 4 percent, as compared with 2014, consistent with the change in service sales described above.

*2014* - Service sales for 2014 decreased $676 million, or 6 percent, as compared with 2013. The decrease was primarily driven by lower service sales at Mission Systems, principally from reduced volume on restricted work and the impacts of in-theater force reductions.

Service costs for 2014 decreased $665 million, or 6 percent, as compared with 2013, consistent with the change in service sales described above.

## BACKLOG

Total backlog includes both funded backlog (firm orders for which funding is authorized and appropriated) and unfunded backlog. Unexercised contract options and indefinite delivery indefinite quantity (IDIQ) contracts are not included in backlog until the time the option or IDIQ task order is exercised or awarded. For multi-year service contracts with non-U.S. Government customers having no stated contract values, backlog includes only the amounts committed by the customer. Backlog is converted into sales as costs are incurred or deliveries are made.

Backlog consisted of the following at December 31, 2015 and 2014:

| | **2015** | | | 2014 | |
|---|---|---|---|---|---|
| *$ in millions* | **Funded** | **Unfunded** | **Total Backlog** | Total Backlog | % Change in 2015 |
| Aerospace Systems | **$ 8,257** | **$ 9,757** | **$ 18,014** | $ 20,599 | **(13)%** |
| Mission Systems | **9,146** | **4,108** | **13,254** | 13,027 | **2 %** |
| Technology Services | **3,350** | **1,305** | **4,655** | 4,573 | **2 %** |
| Total backlog | **$ 20,753** | **$ 15,170** | **$ 35,923** | $ 38,199 | **(6)%** |

The percentage of total backlog from the U.S. Government, International, and Other Customers at December 31, 2015 totaled 81 percent, 16 percent, and 3 percent, respectively.

**New Awards**
*2015* - The estimated value of contract awards recorded during 2015 was $21.3 billion. Significant new awards during 2015 include $1.8 billion for the F-35 program, $1.1 billion for the E-2D Advanced Hawkeye program, $947 million for the Saudi Arabian Ministry of National Guard Training Support program (through our interest in a joint venture for which we consolidate the financial results), $597 million for the B-2 program and $504 million for the F/A-18 program.

On October 27, 2015, the U.S. Air Force announced it was awarding us a contract for Engineering and Manufacturing Development and early production for the Long Range Strike Bomber (LRS-B). In November 2015, the unsuccessful offeror filed a protest asking the U.S. Government Accountability Office (GAO) to review the decision to award the company the LRS-B contract, triggering an automatic stay of performance of the contract. As a result, the LRS-B award is not included in 2015 new awards or backlog.

*2014* - The estimated value of contract awards recorded during 2014 was $25.0 billion. Significant new awards during 2014 include $4.1 billion for the E-2D Advanced Hawkeye program, $1.4 billion for the Global Hawk program, $1.3 billion for the F-35 program, $727 million for the B-2 program, and $560 million for the Virginia Class Submarine program.

## LIQUIDITY AND CAPITAL RESOURCES

We endeavor to ensure the most efficient conversion of operating income into cash for deployment in our business and to maximize shareholder value. In addition to our cash position, we use various financial measures to assist in capital deployment decision-making, including cash provided by operating activities, free cash flow, and net debt-to-equity and net debt-to-capital ratios. We believe these measures are useful to investors in assessing our financial performance and condition.

Cash balances and cash generated from operating activities, supplemented by borrowings under credit facilities and/or in the capital markets, if needed, are expected to be sufficient to fund our operations for at least the next 12 months.

**Operating Cash Flow**
The table below summarizes the key components of cash flow provided by operating activities:

| | Year Ended December 31 | | |
|---|---|---|---|
| *$ in millions* | **2015** | 2014 | 2013 |
| Net earnings | **$ 1,990** | $ 2,069 | $ 1,952 |
| Non-cash items[1] | **1,035** | 731 | 724 |
| Changes in assets and liabilities: | | | |
| Trade working capital | **(564)** | (121) | 54 |
| Retiree benefits | **(263)** | (17) | (281) |
| Other, net | **(36)** | (69) | 34 |
| Net cash provided by operating activities | **$ 2,162** | $ 2,593 | $ 2,483 |

[1] Includes depreciation and amortization, stock based compensation expense (including related excess tax benefits) and deferred income taxes

*2015* – Net cash provided by operating activities for 2015 decreased by $431 million, or 17 percent, as compared with 2014, principally due to changes in trade working capital and a $500 million voluntary pre-tax pension contribution made in March 2015, partially offset by lower net tax payments.

*2014* – Net cash provided by operating activities for 2014 increased by $110 million, or 4 percent, as compared with 2013, principally due to a $500 million voluntary pre-tax pension contribution made in April 2013, partially offset by changes in trade working capital during 2014.

As of December 31, 2015, the amount of cash, cash equivalents and marketable securities held outside of the U.S. by foreign subsidiaries was $551 million. We intend to permanently reinvest these balances and expect future U.S. cash generation will be sufficient to meet future U.S. cash needs. Capital expenditure commitments were $393 million at December 31, 2015, and are expected to be paid with cash on hand.

**Free Cash Flow**
We define free cash flow as cash provided by operating activities less capital expenditures. We believe free cash flow is a useful measure for investors to consider as it represents cash flow the company has available after capital spending to invest for future growth, strengthen the balance sheet and/or return to shareholders through dividends and share repurchases. Free cash flow is a key factor in our planning for and consideration of strategic acquisitions, payment of dividends and stock repurchases.

Free cash flow is not a measure of financial performance under GAAP, and may not be defined and calculated by other companies in the same manner. This measure should not be considered in isolation, as a measure of residual cash flow available for discretionary purposes, or as an alternative to operating results presented in accordance with GAAP as indicators of performance.

The table below reconciles cash provided by operating activities to free cash flow:

| | Year Ended December 31 | | | % Change in | |
|---|---|---|---|---|---|
| *$ in millions* | **2015** | 2014 | 2013 | **2015** | 2014 |
| Net cash provided by operating activities | **$ 2,162** | $ 2,593 | $ 2,483 | **(17)%** | 4 % |
| Less: Capital expenditures | **(471)** | (561) | (364) | **(16)%** | 54 % |
| Free cash flow | **$ 1,691** | $ 2,032 | $ 2,119 | **(17)%** | (4)% |

*2015* – Free cash flow for 2015 decreased $341 million, or 17 percent, as compared with 2014. The decrease was principally driven by the lower net cash provided by operating activities described above, partially offset by a reduction in capital expenditures.

*2014* – Free cash flow for 2014 decreased $87 million, or 4 percent, as compared with 2013. The decrease was principally driven by higher capital expenditures associated with our Aerospace Systems' Centers of Excellence, partially offset by an increase in net cash provided by operating activities, as described above.

**Investing Cash Flow**
*2015* - Cash used in investing activities for 2015 decreased $214 million, or 33 percent, as compared with 2014. The decrease was principally due to lower capital expenditures and the 2014 acquisition of QDS.

*2014* - Cash used in investing activities for 2014 increased $299 million, or 86 percent, as compared with 2013. The increase was principally due to higher capital expenditures associated with our Aerospace Systems' Centers of Excellence, as well as the acquisition of QDS.

**Financing Cash Flow**
*2015* - Net cash used in financing activities during 2015 was comparable with the prior year period and reflects an increase in share repurchases and dividends offset by $600 million of net proceeds from our issuance of unsecured senior notes in 2015.

*2014* - Cash used in financing activities for 2014 increased $2.4 billion, or 281 percent, as compared with 2013. The increase was primarily due to the absence in 2014 of $2.8 billion of net proceeds from our issuance of unsecured senior notes, of which $850 million was used for the redemption of existing debt in 2013, as well as increased share repurchases in 2014.

*Credit Facility and Unsecured Senior Notes* - See Note 9 to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K for further information on our credit facility and unsecured senior notes.

*Financial Arrangements* - See Note 11 to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K for further information on our use of standby letters of credit and guarantees.

*Other Sources of Capital* - We believe we can obtain additional capital, if necessary for long-term liquidity, from such sources as the public or private capital markets, the sale of assets, sale and leaseback of operating assets, and leasing rather than purchasing new assets. We have an effective shelf registration statement on file with the SEC, which allows us to access capital in a timely manner.

*Share Repurchases* - In October 2015, the company completed its previously announced goal of repurchasing 60 million shares of common stock by the end of 2015. See Note 2 of the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K for further information on our share repurchase programs.

**Contractual Obligations**
The following table presents our contractual obligations as of December 31, 2015, and the estimated timing of future cash payments:

| *$ in millions* | Total | 2016 | 2017- 2018 | 2019- 2020 | 2021 and beyond |
|---|---|---|---|---|---|
| Long-term debt | $ 6,523 | $ 110 | $ 1,056 | $ 535 | $ 4,822 |
| Interest payments on long-term debt | 4,114 | 298 | 573 | 503 | 2,740 |
| Operating leases | 839 | 251 | 336 | 160 | 92 |
| Purchase obligations(1) | 8,318 | 4,495 | 2,231 | 1,507 | 85 |
| Other long-term liabilities(2) | 1,044 | 269 | 327 | 143 | 305 |
| Total contractual obligations | $ 20,838 | $ 5,423 | $ 4,523 | $ 2,848 | $ 8,044 |

(1) A "purchase obligation" is defined as an agreement to purchase goods or services that is enforceable and legally binding on us and that specifies all significant terms, including: fixed or minimum quantities to be purchased; fixed, minimum, or variable price provisions; and the approximate timing of the transaction. These amounts are primarily comprised of open purchase order commitments to suppliers and subcontractors pertaining to funded contracts.

(2) Other long-term liabilities, including their current portions, primarily consist of total accrued environmental reserves, deferred compensation and other miscellaneous liabilities, of which $113 million is related to environmental reserves recorded in other current liabilities. It excludes obligations for uncertain tax positions of $246 million, as the timing of such payments, if any, cannot be reasonably estimated.

The table above excludes estimated minimum funding requirements for retirement and other post-retirement benefit plans, as set forth by the Employee Retirement Income Security Act, as amended (ERISA). For further information about future minimum contributions for these plans, see Note 12 to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K. Further details regarding long-term debt and operating leases can be found in Notes 9 and 11, respectively, to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K.

## CRITICAL ACCOUNTING POLICIES, ESTIMATES, AND JUDGMENTS

Our consolidated financial statements are based on the application of U.S. GAAP, which require us to make estimates and assumptions about future events that affect the amounts reported in our consolidated financial statements and the accompanying notes. We employ judgment in making our estimates in consideration of historical experience, currently available information and various other assumptions that we believe to be reasonable under the circumstances. Actual results could differ from our estimates and assumptions, and any such differences could be material to our consolidated financial statements. We believe the following accounting policies are critical to the understanding of our consolidated financial statements and require the use of significant management judgment in their application. For a summary of our significant accounting policies, see Note 1 to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K.

**Revenue Recognition**
Due to the long-term nature of our contracts, we generally recognize revenue using the percentage-of-completion method of accounting as work on our contracts progresses, which requires us to make reasonably dependable estimates for the design, manufacture and delivery of our products and services. In accounting for these contracts, we utilize either the cost-to-cost or the units-of-delivery method of percentage-of-completion accounting, with cost-to-cost being the predominant method.

Sales may include estimated amounts not contractually agreed to by the customer, including cost or performance incentives (such as award and incentive fees), un-priced change orders, claims and requests for equitable adjustment.

Amounts pertaining to cost and/or performance incentives are included in estimated contract sales when they are reasonably estimable.

Our cost estimation process is based on the professional knowledge of our engineering, program management and financial professionals, and draws on their significant experience and judgment. We prepare EACs for our contracts and calculate an estimated contract operating margin based on estimated contract sales and cost. Since contract costs are typically incurred over a period of several years, estimation of these costs requires the use of judgment. Factors considered in estimating the cost of the work to be completed include the availability, productivity and cost of labor, the nature and complexity of work to be performed, the effect of change orders, availability and cost of materials, components and subcontracts, the effect of any delays in performance and the level of indirect cost allocations.

We generally review and reassess our sales, cost and profit estimates for each significant contract at least annually or more frequently as determined by the occurrence of events, changes in circumstances and evaluations of contract performance to reflect the latest reliable information available. Changes in estimates of contract sales and cost are frequent. The company performs on a broad portfolio of long-term contracts, including the development of complex and customized military platforms and systems, as well as advanced electronic equipment and software, that often include technology at the forefront of science. Changes in estimates occur for a variety of reasons, including changes in contract scope, the resolution of risk at lower or higher cost than anticipated, unanticipated risks affecting contract costs, performance issues with our subcontractors or suppliers, changes in indirect cost allocations, such as overhead and general and administrative expenses, and changes in estimated award and incentive fees. EACs are also adjusted to reflect estimated risks related to contract performance. These risks typically include technical, schedule and performance risk based on our evaluation of the contract effort. Similarly, the changes in estimates may include identified opportunities for operating margin improvement.

For the impacts of changes in estimates on our consolidated statement of earnings and comprehensive income (loss), see the Consolidating Operating Results section above and Note 1 to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K.

**Retirement Benefits**

*Overview* – The determination of projected benefit obligations and the fair value of plan assets for our pension and other post-retirement plans requires the use of several actuarial assumptions. We perform an annual review of these assumptions in consultation with our outside actuaries. As we determine changes in the assumptions are warranted, or as a result of plan amendments, future pension and other post-retirement benefit expense and our projected benefit obligation could increase or decrease. The principal assumptions that have a significant effect on our consolidated financial position and annual results of operations are the discount rate, cash balance crediting rate, expected long-term rate of return on plan assets, estimated fair market value of plan assets, and mortality rate of those covered by our pension and other post-retirement benefit plans.

*Discount Rate* – The discount rate represents the interest rate that is used to determine the present value of future cash flows currently expected to be required to settle our pension and other post-retirement benefit obligations. The discount rate is generally based on the yield of high-quality corporate fixed-income investments. At the end of each year, we determine the discount rate using a portfolio of bonds matching the notional cash outflows related to projected benefit payments for each significant benefit plan. Taking into consideration the factors noted above, our weighted-average composite pension discount rate was 4.53 percent at December 31, 2015, and 4.12 percent at December 31, 2014.

The effects of a hypothetical change in the discount rate may be nonlinear and asymmetrical for future years as the discount rate changes and the accounting corridor is applied. The accounting corridor is a defined range within which amortization of net gains and losses is not required and is equal to 10 percent of the greater of plan assets or benefit obligations. Holding all other assumptions constant, an increase or decrease of 25 basis points in the December 31, 2015 discount rate assumption would have the following estimated effects on 2015 pension and other post-retirement benefit obligations and 2016 expected pension and other post-retirement expense:

| *$ increase/(decrease) in millions* | 25 Basis Point Decrease in Rate | 25 Basis Point Increase in Rate |
|---|---|---|
| Pension expense | $ 97 | $ (93) |
| Other post-retirement benefit expense | 1 | (1) |
| Pension obligation | 982 | (931) |
| Other post-retirement benefit obligation | 58 | (56) |

*Cash Balance Crediting Rate* - A portion of the company's pension obligation and resulting pension expense is based on a cash balance formula, where participants' hypothetical account balances are accumulated over time with pay-based credits and interest. Interest is credited monthly using the 30-Year Treasury bond rate. The interest crediting rate is part of the cash balance formula and independent of actual pension investment earnings. The cash balance crediting rate tends to move in concert with the discount rate but has an offsetting effect on pension benefit obligations and pension expense in comparison to the discount rate. Although current 30-Year Treasury bond rates are near historically low levels, we expect such bond rates to rise in the future. The cash balance crediting rate assumption has been set to its current level of 3.0 percent as of December 31, 2015, growing to 3.75 percent by 2021. Holding all other assumptions constant, an increase or decrease of 25 basis points in the December 31, 2015 cash balance crediting rate assumption would have the following estimated effects on 2015 pension benefit obligations and 2016 expected pension expense:

| *$ increase/(decrease) in millions* | 25 Basis Point Decrease in Rate | 25 Basis Point Increase in Rate |
|---|---|---|
| Pension expense | $ (25) | $ 27 |
| Pension obligation | (122) | 128 |

*Expected Long-Term Rate of Return on Plan Assets* – The expected long-term rate of return on plan assets represents the average rate of earnings expected on funds invested. Through consultation with our investment management team and outside investment advisers, management develops expected long-term returns for each of the plans' strategic asset classes. In addition to our historical investment performance, we consider several factors, including current market data such as yields/price-earnings ratios, historical market returns over long periods and periodic surveys of investment managers' expectations. Using policy target allocation percentages and the asset class expected returns, we calculate a weighted-average expected return.

The assumptions used for pension benefits are consistent with those used for other post-retirement benefits. The long-term rate of return on plan assets used for medical and life benefits is reduced to allow for the impact of tax on expected returns as the earnings of certain Voluntary Employee Beneficiary Association (VEBA) trusts are taxable, unlike the pension trust.

For 2015 and 2014, we assumed an expected long-term rate of return on pension plan assets of 8.0 percent and assumed an expected long-term rate of return on other post-retirement benefit plan assets of 7.58 percent and 7.45 percent, respectively. For 2016, we have assumed an expected long-term rate of return on plan assets of 8.0 percent on pension plans and 7.70 percent on other post-retirement benefit plans. Holding all other assumptions constant, an increase or decrease of 25 basis points in the December 31, 2015 expected long-term rate of return on plan asset assumption would have the following estimated effects on 2016 pension and other post-retirement benefit expense:

| *$ increase/(decrease) in millions* | 25 Basis Point Decrease | 25 Basis Point Increase |
|---|---|---|
| Pension expense | $ 58 | $ (58) |
| Other post-retirement benefit expense | 3 | (3) |

*Estimated Fair Market Value of Plan Assets* – For certain plan assets where the fair market value is not readily determinable, such as real estate, private equity and hedge funds, estimates of fair value are determined using the best information available. Estimated fair values on these plan assets are based on redemption values and net asset values, as well as valuation methodologies that include third party appraisals, comparable transactions, discounted cash flow valuation models and public market data.

*Mortality Rate* – Mortality assumptions are used to estimate life expectancies of plan participants. In October 2014, the Society of Actuaries issued updated mortality tables and a mortality improvement scale, which reflect longer life expectancies than previously projected. In October 2015, the SOA issued an updated mortality improvement scale which further refined the previous scale based on additional data and which generally contained lower mortality improvement projections. In consideration of this information, we studied our historical mortality experience and developed an expectation for continued future mortality improvements. Based on this data, we updated the mortality assumptions used in calculating our pension and post-retirement benefit obligations recognized at December 31, 2015, and the amounts estimated for our 2016 pension and post-retirement benefit expense.

For further information regarding our pension and post-retirement benefits, see Risk Factors in Part I, Item 1A of the 2015 Form 10-K and Note 12 to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K.

**Litigation, Commitments and Contingencies**

We are subject to a range of claims, investigations, lawsuits, overhead cost claims, environmental matters, income tax matters and administrative proceedings that arise in the ordinary course of business. Estimating liabilities and costs associated with these matters requires judgment based upon the professional knowledge and experience of management and counsel. We determine whether to record a reserve and, if so, what amount based on consideration of the facts and circumstances of each matter as then known to us. Determinations regarding whether to record a reserve and, if so, of what amount, reflect management's assessment regarding what is likely to occur; they do not necessarily reflect what management believes should occur. The ultimate resolution of any such exposure to us may vary materially from earlier estimates as further facts and circumstances develop or become known to us.

*Environmental Matters* - We are subject to environmental laws and regulations in the jurisdictions in which we do or have done business. Factors that could result in changes to the assessment of probability, range of estimated costs and environmental accruals include: modification of planned remedial actions, changes in the estimated time required to conduct remedial actions, discovery of more or less extensive (or different) contamination than anticipated, information regarding the potential causes of contamination, results of efforts to involve other responsible parties, financial capabilities of other responsible parties, changes in laws and regulations or contractual obligations affecting remediation requirements or other obligations, and improvements in remediation technology.

For further information on litigation, commitments and contingencies, see Risk Factors in Part I, Item 1A of the 2015 Form 10-K, and Note 1, Note 10 and Note 11 to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K.

**Goodwill**

*Overview* – We allocate the purchase price of acquired businesses to the underlying tangible and intangible assets acquired and liabilities assumed based upon their respective fair values, with the excess recorded as goodwill. Such fair value assessments require judgments and estimates that can be affected by contract performance and other factors over time, which may cause final amounts to differ materially from original estimates. Adjustments to the fair value of purchased assets and liabilities after the initial measurement period are recognized in net earnings.

*Impairment Testing* – We test for impairment of goodwill annually at each of our reporting units, which comprise our operating segments. The results of our annual goodwill impairment tests as of December 31, 2015 and 2014, respectively, indicated that the estimated fair value of each reporting unit substantially exceeded its respective carrying value. There were no impairment charges recorded in the years ended December 31, 2015, 2014 and 2013.

In addition to performing an annual goodwill impairment test, we may perform an interim impairment test if events occur or circumstances change that suggest goodwill in any of our reporting units may be impaired during an interim period. Such indicators may include, but are not limited to, the loss of significant business, significant reductions in federal government appropriations or other significant adverse changes in industry or market conditions.

When testing goodwill for impairment, we compare the fair values of each of our reporting units to their respective carrying values. To determine the fair value of our reporting units, we primarily use the income approach based on the cash flows that the reporting unit expects to generate in the future, consistent with our operating plans. This income valuation method requires management to project sales, operating expenses, working capital, capital spending and cash flows for the reporting units over a multi-year period, as well as to determine the weighted-average cost of capital (WACC) used as a discount rate and terminal value assumptions. The WACC takes into account the relative weights of each component of our consolidated capital structure (equity and debt) and represents the expected cost of new capital adjusted as appropriate to consider lower risk profiles associated with longer-term contracts and barriers to market entry. The terminal value assumptions are applied to the final year of the discounted cash flow model. We use industry multiples (including relevant control premiums) of operating earnings to corroborate the fair values of our reporting units determined under the market valuation method of the income approach.

Impairment assessment inherently involves management judgments as to assumptions about expected future cash flows and the impact of market conditions on those assumptions. Due to the many variables inherent in the estimation of a business' fair value and the relative size of our recorded goodwill, differences in assumptions may have a material effect on the results of our impairment analysis.

## OTHER MATTERS

### Off-Balance Sheet Arrangements

As of December 31, 2015, we had no significant off-balance sheet arrangements other than operating leases. For a description of our operating leases, see Note 11 to the consolidated financial statements in Part II, Item 8 of Exhibit 99.4 of this Form 8-K.

**EXHIBIT 99.4**

**PART II**

**Item 8. Financial Statements and Supplementary Data**

**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

To the Board of Directors and Shareholders of
Northrop Grumman Corporation
Falls Church, Virginia

We have audited the accompanying consolidated statements of financial position of Northrop Grumman Corporation and subsidiaries (the “Company”) as of December 31, 2015 and 2014, and the related consolidated statements of earnings and comprehensive income (loss), changes in shareholders’ equity, and cash flows for each of the three years in the period ended December 31, 2015. These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of Northrop Grumman Corporation and subsidiaries at December 31, 2015 and 2014, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2015, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company’s internal control over financial reporting as of December 31, 2015, based on the criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 1, 2016, not presented herein, expressed an unqualified opinion on the Company’s internal control over financial reporting.

/s/ Deloitte & Touche LLP
McLean, Virginia
February 1, 2016
(April 26, 2016 as to the reclassification of segment information as described in Notes 1, 3 and 7)

## CONSOLIDATED STATEMENTS OF EARNINGS AND COMPREHENSIVE INCOME (LOSS)

| *$ in millions, except per share amounts* | Year Ended December 31 2015 | 2014 | 2013 |
|---|---|---|---|
| **Sales** | | | |
| Product | **$ 13,966** | $ 14,015 | $ 14,033 |
| Service | **9,560** | 9,964 | 10,628 |
| Total sales | **23,526** | 23,979 | 24,661 |
| **Operating costs and expenses** | | | |
| Product | **10,333** | 10,431 | 10,623 |
| Service | **7,551** | 7,947 | 8,659 |
| General and administrative expenses | **2,566** | 2,405 | 2,256 |
| **Operating income** | **3,076** | 3,196 | 3,123 |
| Other (expense) income | | | |
| Interest expense | **(301)** | (282) | (257) |
| Other, net | **15** | 23 | (3) |
| Earnings before income taxes | **2,790** | 2,937 | 2,863 |
| Federal and foreign income tax expense | **800** | 868 | 911 |
| **Net earnings** | **$ 1,990** | $ 2,069 | $ 1,952 |
| | | | |
| **Basic earnings per share** | **$ 10.51** | $ 9.91 | $ 8.50 |
| Weighted-average common shares outstanding, in millions | **189.4** | 208.8 | 229.6 |
| **Diluted earnings per share** | **$ 10.39** | $ 9.75 | $ 8.35 |
| Weighted-average diluted shares outstanding, in millions | **191.6** | 212.1 | 233.9 |
| | | | |
| Net earnings (from above) | **$ 1,990** | $ 2,069 | $ 1,952 |
| Other comprehensive income (loss) | | | |
| Change in unamortized benefit plan costs, net of tax (expense) benefit of ($45) in 2015, $1,423 in 2014 and ($1,177) in 2013 | **75** | (2,316) | 1,790 |
| Change in cumulative translation adjustment | **(41)** | (59) | 14 |
| Other, net | **2** | 3 | (1) |
| Other comprehensive income (loss), net of tax | **36** | (2,372) | 1,803 |
| **Comprehensive income (loss)** | **$ 2,026** | $ (303) | $ 3,755 |

*The accompanying notes are an integral part of these consolidated financial statements.*

## CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

| | December 31 | |
|---|---|---|
| *$ in millions* | **2015** | 2014 |
| **Assets** | | |
| Cash and cash equivalents | **$ 2,319** | $ 3,863 |
| Accounts receivable, net | **2,841** | 2,806 |
| Inventoried costs, net | **807** | 742 |
| Prepaid expenses and other current assets | **367** | 369 |
| Total current assets | **6,334** | 7,780 |
| Property, plant and equipment, net of accumulated depreciation of $4,849 in 2015 and $4,611 in 2014 | **3,064** | 2,991 |
| Goodwill | **12,460** | 12,466 |
| Deferred tax assets | **1,409** | 2,026 |
| Other non-current assets | **1,187** | 1,309 |
| **Total assets** | **$ 24,454** | $ 26,572 |
| | | |
| **Liabilities** | | |
| Trade accounts payable | **$ 1,282** | $ 1,305 |
| Accrued employee compensation | **1,195** | 1,441 |
| Advance payments and amounts in excess of costs incurred | **1,537** | 1,713 |
| Other current liabilities | **1,443** | 1,433 |
| Total current liabilities | **5,457** | 5,892 |
| Long-term debt, net of current portion of $110 in 2015 and $3 in 2014 | **6,416** | 5,925 |
| Pension and other post-retirement benefit plan liabilities | **6,172** | 6,555 |
| Other non-current liabilities | **887** | 965 |
| Total liabilities | **18,932** | 19,337 |
| | | |
| **Commitments and contingencies (Note 11)** | | |
| | | |
| **Shareholders' equity** | | |
| Preferred stock, $1 par value; 10,000,000 shares authorized; no shares issued and outstanding | **—** | — |
| Common stock, $1 par value; 800,000,000 shares authorized; issued and outstanding: 2015—181,303,083 and 2014—198,930,240 | **181** | 199 |
| Paid-in capital | **—** | — |
| Retained earnings | **10,661** | 12,392 |
| Accumulated other comprehensive loss | **(5,320)** | (5,356) |
| Total shareholders' equity | **5,522** | 7,235 |
| **Total liabilities and shareholders' equity** | **$ 24,454** | $ 26,572 |

*The accompanying notes are an integral part of these consolidated financial statements.*

**CONSOLIDATED STATEMENTS OF CASH FLOWS**

| | Year Ended December 31 | | |
|---|---|---|---|
| *$ in millions* | **2015** | 2014 | 2013 |
| **Operating activities** | | | |
| Net earnings | **$ 1,990** | $ 2,069 | $ 1,952 |
| Adjustments to reconcile to net cash provided by operating activities: | | | |
| Depreciation and amortization | **467** | 462 | 495 |
| Stock-based compensation | **99** | 134 | 144 |
| Excess tax benefits from stock-based compensation | **(103)** | (81) | (43) |
| Deferred income taxes | **572** | 216 | 128 |
| Changes in assets and liabilities: | | | |
| Accounts receivable, net | **(30)** | (105) | 171 |
| Inventoried costs, net | **(80)** | (24) | 101 |
| Prepaid expenses and other assets | **43** | 13 | (51) |
| Accounts payable and other liabilities | **(632)** | (89) | (169) |
| Income taxes payable | **135** | 84 | 2 |
| Retiree benefits | **(263)** | (17) | (281) |
| Other, net | **(36)** | (69) | 34 |
| Net cash provided by operating activities | **2,162** | 2,593 | 2,483 |
| **Investing activities** | | | |
| Capital expenditures | **(471)** | (561) | (364) |
| Other investing activities, net | **40** | (84) | 18 |
| Net cash used in investing activities | **(431)** | (645) | (346) |
| **Financing activities** | | | |
| Common stock repurchases | **(3,182)** | (2,668) | (2,371) |
| Net proceeds from issuance of long-term debt | **600** | — | 2,841 |
| Cash dividends paid | **(603)** | (563) | (545) |
| Payments of long-term debt | **—** | — | (877) |
| Other financing activities, net | **(90)** | (4) | 103 |
| Net cash used in financing activities | **(3,275)** | (3,235) | (849) |
| (Decrease) increase in cash and cash equivalents | **(1,544)** | (1,287) | 1,288 |
| Cash and cash equivalents, beginning of year | **3,863** | 5,150 | 3,862 |
| Cash and cash equivalents, end of year | **$ 2,319** | $ 3,863 | $ 5,150 |

*The accompanying notes are an integral part of these consolidated financial statements.*

## CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY

| | Year Ended December 31 | | |
|---|---|---|---|
| *$ in millions, except per share amounts* | **2015** | 2014 | 2013 |
| **Common stock** | | | |
| Beginning of year | **$ 199** | $ 218 | $ 239 |
| Common stock repurchased | **(19)** | (21) | (27) |
| Shares issued for employee stock awards and options | **1** | 2 | 6 |
| End of year | **181** | 199 | 218 |
| **Paid-in capital** | | | |
| Beginning of year | **—** | 848 | 2,924 |
| Common stock repurchased | **—** | (999) | (2,345) |
| Stock compensation | **—** | 139 | 274 |
| Other | **—** | 12 | (5) |
| End of year | **—** | — | 848 |
| **Retained earnings** | | | |
| Beginning of year | **12,392** | 12,538 | 11,138 |
| Common stock repurchased | **(3,154)** | (1,637) | — |
| Net earnings | **1,990** | 2,069 | 1,952 |
| Dividends declared | **(596)** | (578) | (552) |
| Stock compensation | **29** | — | — |
| End of year | **10,661** | 12,392 | 12,538 |
| **Accumulated other comprehensive loss** | | | |
| Beginning of year | **(5,356)** | (2,984) | (4,787) |
| Other comprehensive income (loss), net of tax | **36** | (2,372) | 1,803 |
| End of year | **(5,320)** | (5,356) | (2,984) |
| Total shareholders' equity | **$ 5,522** | $ 7,235 | $ 10,620 |
| Cash dividends declared per share | **$ 3.10** | $ 2.71 | $ 2.38 |

*The accompanying notes are an integral part of these consolidated financial statements.*

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

### 1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

**Nature of Operations**

Northrop Grumman Corporation (herein referred to as “Northrop Grumman,” the “company,” “we,” “us,” or “our”) is a leading global security company. We offer a broad portfolio of capabilities and technologies that enable us to deliver innovative products, systems and solutions for applications that range from undersea to outer space and into cyberspace. We provide products, systems and solutions in unmanned systems; cyber; command, control, communications and computers (C4), intelligence, surveillance, and reconnaissance (C4ISR); strike aircraft; and logistics and modernization to government and commercial customers worldwide. We participate in many high-priority defense and government programs in the United States (U.S.) and abroad. We conduct most of our business with the U.S. Government, principally the Department of Defense (DoD) and intelligence community. We also conduct business with foreign, state and local governments and commercial customers.

**Principles of Consolidation**

The consolidated financial statements include the accounts of Northrop Grumman and its subsidiaries. Material intercompany accounts, transactions and profits are eliminated in consolidation. Investments in equity securities and joint ventures where the company has significant influence, but not control, are accounted for using the equity method.

**Accounting Estimates**

The company’s financial statements are prepared in conformity with accounting principles generally accepted in the United States of America (GAAP). The preparation thereof requires management to make estimates and judgments that affect the reported amounts of assets and liabilities and the disclosure of contingencies at the date of the financial statements, as well as the reported amounts of sales and expenses during the reporting period. Estimates have been prepared using the most current and best available information; however, actual results could differ materially from those estimates.

**Related Party Transactions**

For all periods presented, the company had no material related party transactions.

**Revenue Recognition**

The majority of our sales are derived from long-term contracts with the U.S. Government for the production of goods, the provision of services, or in some cases, a combination of both. In accounting for these contracts, we utilize either the cost-to-cost method or the units-of-delivery method of percentage-of-completion accounting, with cost-to-cost being the predominant method. Generally, sales under cost-reimbursement contracts and construction-type contracts that provide for deliveries at lower volume rates per year or a small number of units are accounted for using the cost-to-cost method. Under this method, sales, including estimated profits, are recorded as costs are incurred. Generally, sales under contracts that provide for deliveries at higher volume rates per year or a large number of units are accounted for using the units-of-delivery method. Under this method, cost and sales are recognized as units are delivered to the customer. The company estimates profit on contracts as the difference between total estimated sales and total estimated cost at completion and recognizes that profit either as costs are incurred (cost-to-cost) or as units are delivered (units-of-delivery). The company classifies sales as product or service depending upon the predominant attributes of the contract.

Contract sales may include estimated amounts not contractually agreed to by the customer, including cost or performance incentives (such as award and incentive fees), un-priced change orders, claims and requests for equitable adjustment (REAs). Further, as contracts are performed, change orders can be a regular occurrence and may be un-priced until negotiated with the customer. Un-priced change orders are included in estimated contract sales when management believes it is probable they will be recovered through a change in contract price. Amounts representing claims (including change orders unapproved as to both scope and price) and REAs are included in estimated contract sales when management believes it is probable the claim and/or REA will result in additional contract revenue and the amount can be reliably estimated based on the facts and circumstances known to us at the time. As of December 31, 2015, the company has initiated REAs with the U.S. government and an international customer seeking recovery of approximately $300 million under contracts related to two Aerospace Systems programs. A substantial portion of the REAs was initiated during the fourth quarter of 2015. The REAs relate to what we believe is work performed by the company at the direction of our customers that is beyond the scope of the related contracts as well as costs incurred by the company as a result of customer-caused delays and disruption. The total amount of additional contract sales we have assumed as of December 31, 2015 is approximately $225 million.

We are currently negotiating the REAs and the terms of the contracts with our customers. Recognized amounts related to claims and REAs as of December 31, 2014 were not material individually or in aggregate.

The company's U.S. Government contracts generally contain provisions that enable the customer to terminate a contract for default, or for the convenience of the government. If a contract is terminated for default, we may not be entitled to recover any of our costs on partially completed work and may be liable to the government for re-procurement costs of acquiring similar products or services from another contractor, and for certain other damages. Termination of a contract for the convenience of the government may occur when the government concludes it is in the best interests of the government that the contract be terminated. Under a termination for convenience, the contractor is typically entitled to be paid in accordance with the contract’s terms for costs incurred prior to the effective date of termination, plus a reasonable profit and settlement expenses. At December 31, 2015, the company did not have any contract terminations in process that we anticipate would have a material effect on our consolidated financial position, annual results of operations and/or cash flows.

*Net Estimate-At-Completion (EAC) Adjustments* - We recognize changes in estimated contract sales, costs or profits using the cumulative catch-up method of accounting. This method recognizes, in the current period, the cumulative effect of the changes on current and prior periods as net EAC adjustments; sales and profit in future periods of contract performance are recognized as if the revised estimates had been used since contract inception. If it is determined that a loss will result from the performance of a contract, the entire amount of the estimable future loss is charged against income in the period the loss is identified. Loss provisions are first offset against any costs that are included in unbilled accounts receivable or inventoried costs, and any remaining amount is reflected in liabilities.

Significant EAC adjustments on a single contract could have a material effect on the company's consolidated financial position or annual results of operations. Where such adjustments occur, we generally disclose the nature, underlying conditions and financial impact of the adjustments. No discrete event or adjustments to an individual contract were material to the accompanying consolidated statements of earnings and comprehensive income (loss) for each of the three years ended December 31, 2015, 2014, and 2013.

The following table presents the effect of aggregate net EAC adjustments:

| | Year Ended December 31 | | |
|---|---|---|---|
| *$ in millions, except per share data* | **2015** | 2014 | 2013 |
| Operating Income | **$ 580** | $ 664 | $ 753 |
| Net Earnings[(1)] | **377** | 432 | 489 |
| Diluted earnings per share[(1)] | **1.97** | 2.04 | 2.09 |

[(1)] Based on statutory tax rates

*Sales by Customer Category* - The following table presents sales by customer category:

| | Year Ended December 31 | | | | | |
|---|---|---|---|---|---|---|
| | **2015** | | 2014 | | 2013 | |
| *$ in millions* | **$** | **%[(1)]** | $ | %[(1)] | $ | %[(1)] |
| U.S. Government[(2)] | **$ 19,458** | 83% | $ 20,085 | 84% | $ 21,278 | 86% |
| International[(3)] | **3,339** | 14% | 3,045 | 13% | 2,493 | 10% |
| Other Customers[(4)] | **729** | 3% | 849 | 3% | 890 | 4% |
| Total Sales | **$ 23,526** | | $ 23,979 | | $ 24,661 | |

[(1)] Percentage of total sales.

[(2)] Sales to the U.S. Government include sales from contracts for which Northrop Grumman is the prime contractor, as well as those for which the company is a subcontractor and the ultimate customer is the U.S. Government. Each of the company's segments derives substantial revenue from the U.S. Government.

[(3)] International sales include foreign military sales contracted through the U.S. Government, direct commercial sales with governments outside the U.S. and commercial sales outside the U.S.

[(4)] Sales to Other Customers include sales to U.S. state and local governments and U.S. commercial customers.

**General and Administrative Expenses**
In accordance with industry practice and the regulations that govern cost accounting requirements for government contracts, most general management and corporate expenses incurred at the segment and corporate locations are considered allowable and allocable costs. Allowable and allocable general and administrative costs, including independent research and development (IR&D) and certain bid and proposal (B&P) costs, are allocated on a systematic basis to contracts in progress and are included as a component of total estimated contract costs, including any provision for loss contracts.

**Research and Development**
Company-sponsored research and development activities primarily include IR&D efforts related to government programs. Company-sponsored IR&D expenses totaled $712 million, $569 million and $507 million in 2015, 2014 and 2013, respectively. Customer-funded research and development activities are charged directly to the related contracts.

**Environmental Costs**
We accrue for environmental liabilities when management determines that, based on the facts and circumstances known to the company, it is probable the company will incur costs to address environmental impacts and the costs are reasonably estimable. When only a range of amounts is established and no amount within the range is more probable than another, we record the low end of the range. The company typically projects environmental costs for up to 30 years, records environmental liabilities on an undiscounted basis, and excludes asset retirement obligations and certain legal costs. At sites involving multiple parties, we accrue environmental liabilities based upon our expected share of liability, taking into account the financial viability of other liable parties. As a portion of environmental remediation costs is expected to be recoverable through overhead charges on government contracts, such amounts are deferred in inventoried costs (current portion) and other non-current assets. The portion of environmental costs not expected to be recoverable is expensed.

**Fair Value of Financial Instruments**
The company measures the fair value of its financial instruments using observable and unobservable inputs. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect internal market assumptions.

These two types of inputs create the following fair value hierarchy:

Level 1 - Quoted prices for identical instruments in active markets.

Level 2 - Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations whose inputs are observable or whose significant value drivers are observable.

Level 3 - Significant inputs to the valuation model are unobservable.

Marketable securities accounted for as trading and available-for-sale are recorded at fair value on a recurring basis. For available-for-sale securities, changes in unrealized gains and losses are reported as a component of other comprehensive income. Changes in unrealized gains and losses on trading securities are included in other, net in the consolidated statements of earnings and comprehensive income (loss). Investments in held-to-maturity instruments with original maturities greater than three months are recorded at amortized cost.

Derivative financial instruments are recognized as assets or liabilities in the financial statements and measured at fair value on a recurring basis. Changes in the fair value of derivative financial instruments that are designated as fair value hedges are recorded in net earnings, while the effective portion of the changes in the fair value of derivative financial instruments that are designated as cash flow hedges are recorded as a component of other comprehensive income until settlement. For derivative financial instruments not designated as hedging instruments, gains or losses resulting from changes in the fair value are reported in other, net in the consolidated statements of earnings and comprehensive income (loss).

The company may use derivative financial instruments to manage its exposure to interest rate risk for its long-term fixed-rate debt portfolio and foreign currency exchange risk related to receipts from customers and payments to suppliers denominated in foreign currencies. The company does not use derivative financial instruments for trading or speculative purposes, nor does it use leveraged financial instruments. Credit risk related to derivative financial instruments is considered minimal and is managed through the use of multiple counterparties with high credit standards and periodic settlements of positions, as well as by entering into master netting agreements with most of our counterparties.

**Income Taxes**
Provisions for federal and foreign income taxes are calculated on reported earnings before income taxes based on current tax law and include the cumulative effect of any changes in tax rates from those used previously in determining deferred tax assets and liabilities. Such provisions differ from the amounts currently payable because certain items of income and expense are recognized in different periods for financial reporting purposes than for income tax purposes. The company recognizes federal and foreign interest accrued related to unrecognized tax benefits in income tax expense. Federal tax penalties are recognized as a component of income tax expense.

In accordance with industry practice and regulations that govern the cost accounting requirements for government contracts, current state and local income and franchise taxes are generally considered allowable and allocable costs and are therefore recorded in operating costs and expenses. The company recognizes changes in deferred state taxes and unrecognized state tax benefits in unallocated corporate expenses.

Uncertain tax positions reflect the company's expected treatment of tax positions taken in a filed tax return, or planned to be taken in a future tax return or claim, which have not been reflected in measuring income tax expense for financial reporting purposes. Until these positions are sustained by the taxing authorities or the statute of limitations concerning such issues lapses, the company does not recognize the tax benefits resulting from such positions and reports the tax effects as a liability for uncertain tax positions in its consolidated statements of financial position.

**Cash and Cash Equivalents**
Cash and cash equivalents are comprised of cash in banks and highly liquid instruments with original maturities of three months or less, primarily consisting of bank time deposits and investments in institutional money market funds. The company does not invest in high yield or high risk securities. Cash in bank accounts at times may exceed federally insured limits.

**Accounts Receivable and Inventoried Costs**
Accounts receivable include amounts billed and currently due from customers, as well as amounts currently due but unbilled (primarily related to costs incurred on contracts accounted for under the cost-to-cost method of percentage-of-completion accounting). Accounts receivable also include certain estimated contract change amounts, claims or REAs in negotiation that are probable of recovery and amounts retained by the customer pending contract completion.

Inventoried costs primarily relate to work in process on contracts accounted for under the units-of-delivery method of percentage-of-completion accounting. These costs represent accumulated contract costs less the portion of such costs allocated to delivered items. Product inventory primarily consists of raw materials and is stated at the lower of cost or market, generally using the average cost method.

Accumulated contract costs in unbilled accounts receivable and inventoried costs include direct production costs, factory and engineering overhead, production tooling costs, and, for government contracts, allowable general and administrative expenses. According to the provisions of U.S. Government contracts, the customer asserts title to, or a security interest in, inventories related to such contracts as a result of contract advances, performance-based payments, and progress payments. In accordance with industry practice, unbilled accounts receivable and inventoried costs are classified as current assets and include amounts related to contracts having production cycles longer than one year. Payments received in excess of inventoried costs and unbilled accounts receivable amounts on a contract by contract basis are recorded as advance payments and amounts in excess of costs incurred in the consolidated statements of financial position.

**Property, Plant and Equipment**
Property, plant and equipment are depreciated over the estimated useful lives of individual assets. Most of these assets are depreciated using declining-balance methods, with the remainder using the straight-line method. Major classes of property, plant and equipment and their useful lives are as follows:

| | | December 31 | |
|---|---|---|---|
| *Useful life in years, $ in millions* | Useful Life | **2015** | 2014 |
| Land and land improvements | Up to 40[1] | **$ 381** | $ 373 |
| Buildings and improvements | Up to 45 | **1,618** | 1,589 |
| Machinery and other equipment | Up to 20 | **4,610** | 4,401 |
| Capitalized software costs | 3-5 | **406** | 428 |
| Leasehold improvements | Length of Lease[2] | **898** | 811 |
| Property, plant and equipment, at cost | | **7,913** | 7,602 |
| Accumulated depreciation | | **(4,849)** | (4,611) |
| Property, plant and equipment, net | | **$ 3,064** | $ 2,991 |

[1] Land is not a depreciable asset.

[2] Leasehold improvements are depreciated over the shorter of the useful life of the asset or the length of the lease.

**Leases**
The company uses its incremental borrowing rate in the assessment of lease classification as capital or operating and defines the initial lease term to include renewal options determined to be reasonably assured. The majority of our leases are operating leases.

Many of the company's real property lease agreements contain incentives for tenant improvements, rent holidays, or rent escalation clauses. For tenant improvement incentives, the company records a deferred rent liability and amortizes the deferred rent over the term of the lease as a reduction to rent expense. For rent holidays and rent escalation clauses during the lease term, the company records rental expenses on a straight-line basis over the term of the lease. For purposes of recognizing lease incentives, the company uses the date of initial possession as the commencement date, which is generally when the company is given the right of access to the space and begins to make improvements in preparation of intended use.

**Goodwill and Other Purchased Intangible Assets**
The company tests for impairment of goodwill annually as of December 31, or when we believe a potential impairment exists. When performing the goodwill impairment test, the company uses a discounted cash flow approach corroborated by comparative market multiples, where appropriate, to determine the fair value of its reporting units.

Goodwill and other purchased intangible asset balances are included in the identifiable assets of their assigned business segment. The company charges goodwill impairment, as well as the amortization of other purchased intangible assets, against the respective segment's operating income. Purchased intangible assets are amortized on a straight-line basis over their estimated useful lives.

**Cash Surrender Value of Life Insurance Policies**
The company maintains whole life insurance policies on a group of executives, which are recorded at their cash surrender value as determined by the insurance carrier. The company also has split-dollar life insurance policies on former officers and executives from acquired businesses, which are recorded at the lesser of their cash surrender value or premiums paid. These policies are utilized as a partial funding source for deferred compensation and other non-qualified employee retirement plans. As of December 31, 2015 and 2014, the carrying values associated with these policies were $284 million and $290 million, respectively, and are recorded in other non-current assets in the consolidated statements of financial position.

**Litigation, Commitments and Contingencies**
Amounts associated with litigation, commitments and contingencies are recorded as reserves when management, after considering the facts and circumstances of each matter as then known to management, has determined it is probable a liability will be found to have been incurred and the amount of the loss can be reasonably estimated. When only a range of amounts is established and no amount within the range is more likely than another, the low

end of the range is recorded. Legal fees are expensed as incurred. Due to the inherent uncertainties surrounding gain contingencies, we generally do not recognize potential gains until realized.

**Retirement Benefits**

The company sponsors various defined benefit pension plans and defined contribution retirement plans covering substantially all of its employees. In most cases, our defined contribution plans provide for up to a 50 percent match of employee contributions up to eight percent of compensation. The company also provides post-retirement benefits other than pensions, consisting principally of health care and life insurance benefits, to eligible retirees and qualifying dependents.

The liabilities, unamortized benefit plan costs and annual income or expense of the company's defined benefit pension and other post-retirement benefit plans are determined using methodologies that involve several actuarial assumptions. Unamortized benefit plan costs consist primarily of accumulated net after-tax actuarial losses.

Because U.S. Government regulations require that the costs of pension and other post-retirement plans be charged to our contracts in accordance with the Federal Acquisition Regulation (FAR) and the related U.S. Government Cost Accounting Standards (CAS) that govern such plans, we calculate retiree benefit plan costs under both CAS and FAS (GAAP Financial Accounting Standards) methods. While both FAS and CAS recognize a normal service cost component in measuring periodic pension cost, there are differences in the way the components of annual pension costs are calculated under each method. Measuring plan obligations under FAS and CAS includes different assumptions and models, such as in estimating earnings on plan assets and calculating interest expense. In addition, the periods over which gains/losses related to pension assets and actuarial changes are amortized are different under FAS and CAS. As a result, annual retiree benefit plan expense amounts for FAS are different from the amounts for CAS even though the ultimate cost of providing benefits over the life of the plans is the same under either method. CAS retiree benefit plan costs are charged to contracts and are included in segment operating income, and the difference between CAS and FAS expense is recorded in operating income at the consolidated company level.

Net actuarial gains or losses are amortized to expense on a plan-by-plan basis when they exceed the accounting corridor. The accounting corridor is a defined range within which amortization of net gains and losses is not required and is equal to 10 percent of the greater of plan assets or benefit obligations. Gains or losses outside of the corridor are subject to amortization over our average employee future service period of approximately nine years. Not all net periodic pension expense is recognized in net earnings in the year incurred because it is allocated as production costs and a portion remains in inventory at the end of a reporting period. The company's funding policy for the qualified pension plans is to contribute, at a minimum, the statutorily required amount to an irrevocable trust.

**Stock Compensation**

The company's stock compensation plans are classified as equity plans and compensation expense is generally recognized over the vesting period (typically three years), net of estimated forfeitures. The company issues stock awards in the form of restricted performance stock rights and restricted stock rights under its existing plans. The fair value of stock awards is determined based on the closing market price of the company's common stock on the grant date. At each reporting date, the number of shares is adjusted to equal the number ultimately expected to vest.

**Accounting Standards Updates**

On May 28, 2014, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU)No. 2014-09, *Revenue from Contracts with Customers*. ASU 2014-09 supersedes existing revenue recognition guidance, including Accounting Standards Codification No. 605-35, *Revenue Recognition - Construction-Type and Production-Type Contracts.* ASU 2014-09 outlines a single set of comprehensive principles for recognizing revenue under U.S. GAAP. Among other things, it requires companies to identify contractual performance obligations and determine whether revenue should be recognized at a point in time or over time. These concepts, as well as other aspects of ASU 2014-09, may change the method and/or timing of revenue recognition for certain of our contracts. On July 9, 2015, the FASB approved a one year deferral of the effective date of ASU 2014-09 to annual reporting periods beginning after December 15, 2017. ASU 2014-09 may be applied either retrospectively or through the use of a modified-retrospective method. We are currently evaluating both methods of adoption as well as the effect ASU 2014-09 will have on the company's consolidated financial position, annual results of operations and cash flows.

On November 20, 2015, the FASB issued ASU 2015-17, *Balance Sheet Classification of Deferred Taxes.* ASU 2015-17 simplifies the presentation of deferred income taxes and requires that deferred tax assets and liabilities, as well as any related valuation allowance, be classified as noncurrent in a classified statement of financial position. The company adopted ASU 2015-17 during the fourth quarter of 2015 and applied it retrospectively to all periods presented.

Other accounting standards updates effective after December 31, 2015, are not expected to have a material effect on the company's consolidated financial position, annual results of operations and/or cash flows.

**Reclassifications**

As a result of the company's adoption of ASU 2015-17, we now present deferred tax assets and liabilities as non-current. This change resulted in a reclassification of $404 million of net current deferred tax assets reported in our 2014 consolidated statement of financial position to non-current deferred tax assets. This reclassification reduced our current assets as of December 31, 2014, but had no impact on total assets.

As a result of the company's realignment, certain amounts in these financial statements have been reclassified to reflect the new organizational structure and segment realignments (see Notes 3 and 7 below).

**Shareholders' Equity**

The company records the difference between the cost of shares repurchased and their par value as well as tax withholding in excess of related stock compensation expense as a reduction of paid-in capital to the extent available and then as a reduction of retained earnings.

**Accumulated Other Comprehensive Loss**

The components of accumulated other comprehensive loss are as follows:

| | December 31 | |
|---|---|---|
| *$ in millions* | **2015** | 2014 |
| Unamortized benefit plan costs, net of tax benefit of $3,350 in 2015 and $3,395 in 2014 | **$ (5,241)** | $ (5,316) |
| Cumulative translation adjustment | **(82)** | (41) |
| Net unrealized gain on marketable securities and cash flow hedges, net of tax | **3** | 1 |
| Total accumulated other comprehensive loss | **$ (5,320)** | $ (5,356) |

Unamortized benefit plan costs consist primarily of net after-tax actuarial losses totaling $5.5 billion and $5.6 billion as of December 31, 2015 and 2014, respectively. Net actuarial gains or losses are re-determined annually or upon remeasurement events and principally arise from changes in the interest rate used to discount our benefit obligations and differences between expected and actual returns on plan assets.

Reclassifications from accumulated other comprehensive income to net earnings related to the amortization of benefit plan costs were $388 million, $145 million and $319 million, net of taxes, for the years ended December 31, 2015, 2014 and 2013, respectively. The reclassifications represent the amortization of net actuarial losses and prior service credits for the company's retirement benefit plans, and are included in the computation of net periodic pension cost (see Note 12 below for further information).

Reclassifications from accumulated other comprehensive income to net earnings, relating to cumulative translation adjustments, marketable securities and effective cash flow hedges for the years ended December 31, 2015, 2014 and 2013, respectively, were not material. Reclassifications for cumulative translation adjustments and marketable securities are recorded in other income, and reclassifications for effective cash flow hedges are recorded in operating income.

## 2. EARNINGS PER SHARE, SHARE REPURCHASES AND DIVIDENDS ON COMMON STOCK

**Basic Earnings Per Share**

We calculate basic earnings per share by dividing net earnings by the weighted-average number of shares of common stock outstanding during each period.

**Diluted Earnings Per Share**

Diluted earnings per share includes the dilutive effect of awards granted to employees under stock-based compensation plans. The dilutive effect of these securities totaled 2.2 million, 3.3 million and 4.3 million shares for the years ended December 31, 2015, 2014 and 2013, respectively. We had no anti-dilutive stock options outstanding for the years ended December 31, 2015, 2014 and 2013, respectively.

**Share Repurchases**

On May 15, 2013, the company's board of directors authorized a share repurchase program of up to $4.0 billion of the company's common stock (2013 Repurchase Program). Repurchases under the 2013 Repurchase Program commenced in September 2013 and were completed in March 2015.

On December 4, 2014, the company's board of directors authorized a new share repurchase program of up to $3.0 billion of the company's common stock (2014 Repurchase Program). Repurchases under the 2014 Repurchase Program commenced in March 2015 upon the completion of the company's 2013 Repurchase Program. As of December 31, 2015, repurchases under the 2014 Repurchase Program totaled $2.7 billion; $0.3 billion remained under this share repurchase authorization. By its terms, the 2014 Repurchase Program is set to expire when we have used all authorized funds for repurchases.

On September 16, 2015, the company's board of directors authorized a new share repurchase program of up to $4.0 billion of the company's common stock (2015 Repurchase Program). By its terms, repurchases under the 2015 Repurchase Program are set to commence upon completion of the 2014 Repurchase Program and to expire when we have used all authorized funds for repurchases.

Share repurchases take place from time to time, subject to market conditions and management's discretion, in the open market or in privately negotiated transactions. The company retires its common stock upon repurchase and has not made any purchases of common stock other than in connection with these publicly announced repurchase programs in the periods presented.

The table below summarizes the company’s share repurchases:

| Repurchase Program Authorization Date | Amount Authorized (in millions) | Total Shares Retired (in millions) | Average Price Per Share[1] | Date Completed | Shares Repurchased (in millions) Year Ended December 31 2015 | 2014 | 2013 |
|---|---|---|---|---|---|---|---|
| June 16, 2010 | $ 5,350 | 83.7 | $ 63.86 | September 2013 | — | — | 18.6 |
| May 15, 2013 | $ 4,000 | 32.8 | $ 121.97 | March 2015 | **2.7** | 21.4 | 8.7 |
| December 4, 2014 | $ 3,000 | 16.6 | $ 164.72 | | **16.6** | — | — |
| September 16, 2015 | $ 4,000 | — | $ — | | **—** | — | — |
| | | | | | **19.3** | 21.4 | 27.3 |

[1] Includes commissions paid.

**Dividends on Common Stock**

In May 2015, the company increased the quarterly common stock dividend 14 percent to $0.80 per share from the previous amount of $0.70 per share.

In May 2014, the company increased the quarterly common stock dividend 15 percent to $0.70 per share from the previous amount of $0.61 per share.

In May 2013, the company increased the quarterly common stock dividend 11 percent to $0.61 per share from the previous amount of $0.55 per share.

### 3. SEGMENT INFORMATION

At December 31, 2015, the company was aligned in four segments: Aerospace Systems, Electronic Systems, Information Systems and Technical Services. Effective January 1, 2016, the company realigned our segments from four to three: Aerospace Systems, Mission Systems and Technology Services. This realignment is reflected in the recast financial information for each of the periods presented below.

The following table presents sales and operating income by segment:

| | Year Ended December 31 | | |
|---|---|---|---|
| *$ in millions* | **2015** | 2014 | 2013 |
| **Sales** | | | |
| Aerospace Systems | **$ 9,940** | $ 9,910 | $ 9,999 |
| Mission Systems | **10,674** | 11,001 | 11,468 |
| Technology Services | **4,819** | 4,902 | 4,992 |
| Intersegment eliminations | **(1,907)** | (1,834) | (1,798) |
| Total sales | **23,526** | 23,979 | 24,661 |
| **Operating income** | | | |
| Aerospace Systems | **1,205** | 1,285 | 1,214 |
| Mission Systems | **1,410** | 1,557 | 1,619 |
| Technology Services | **514** | 461 | 464 |
| Intersegment eliminations | **(209)** | (204) | (217) |
| **Total segment operating income** | **2,920** | 3,099 | 3,080 |
| Reconciliation to operating income: | | | |
| Net FAS/CAS pension adjustment | **348** | 269 | 168 |
| Unallocated corporate expenses | **(190)** | (169) | (119) |
| Other | **(2)** | (3) | (6) |
| Total operating income | **$ 3,076** | $ 3,196 | $ 3,123 |

**Net FAS/CAS Pension Adjustment**
For financial statement purposes, we account for our employee pension plans in accordance with GAAP under FAS. However, the cost of these plans is charged to our contracts in accordance with the FAR and the related CAS that govern such plans. The net FAS/CAS pension adjustment reflects the difference between CAS pension expense included as cost in segment operating income and FAS pension expense determined in accordance with GAAP.

*2015* - The increase in net FAS/CAS pension adjustment is principally due to higher 2015 CAS expense resulting from changes in mortality assumptions and demographic experience, partially offset by an increase in 2015 FAS expense as a result of changes in our FAS discount rate and mortality assumptions as of December 31, 2014.

*2014* - The increase in net FAS/CAS pension adjustment is principally due to a reduction in FAS expense, largely due to the increase in our FAS discount rate assumptions as of December 31, 2013. The reduction in FAS expense was partially offset by lower CAS expense due to the passage of the Highway and Transportation Funding Act of 2014 (HATFA), which included provisions that reduce the amount of CAS expense charged to our contracts.

**Unallocated Corporate Expenses**
Unallocated corporate expenses include the portion of corporate expenses not considered allowable or allocable under applicable CAS or the FAR, and are therefore not allocated to the segments. Such costs consist of a portion of management and administration, legal, environmental, compensation costs, retiree benefits and certain unallowable costs such as lobbying activities, among others.

*2015* - The increase in unallocated corporate expenses for 2015, as compared to 2014, is principally due to a $21 million increase in unallocated state income taxes due in part to a change in accounting methods approved by the Internal Revenue Service (IRS) during the fourth quarter of 2015.

*2014* - The increase in unallocated corporate expenses for 2014, as compared to 2013, is primarily due to increases in year-over-year provisions for environmental matters.

**Intersegment Sales and Operating Income**
Sales between segments are recorded at values that include intercompany operating income for the performing segment based on that segment's estimated operating margin rate for external sales. Such intercompany operating income is eliminated in consolidation.

The following table presents intersegment sales and operating income before eliminations:

| | Year Ended December 31 | | | | | |
|---|---|---|---|---|---|---|
| *$ in millions* | **2015** | | 2014 | | 2013 | |
| | **Sales** | **Operating Income** | Sales | Operating Income | Sales | Operating Income |
| **Intersegment sales and operating income** | | | | | | |
| Aerospace Systems | **$ 221** | **$ 27** | $ 166 | $ 21 | $ 138 | $ 17 |
| Mission Systems | **781** | **97** | 842 | 115 | 834 | 133 |
| Technology Services | **905** | **85** | 826 | 68 | 826 | 67 |
| Total | **$ 1,907** | **$ 209** | $ 1,834 | $ 204 | $ 1,798 | $ 217 |

**Assets**
Substantially all of the company's operating assets are located in the U.S. The following table presents assets by segment:

.

| | December 31 | |
|---|---|---|
| *$ in millions* | **2015** | 2014 |
| **Assets** | | |
| Aerospace Systems | **$ 7,049** | $ 6,828 |
| Mission Systems | **9,475** | 9,509 |
| Technology Services | **3,047** | 3,137 |
| Segment assets | **19,571** | 19,474 |
| Corporate assets[1] | **4,883** | 7,098 |
| Total assets | **$ 24,454** | $ 26,572 |

[1] Corporate assets principally consist of cash and cash equivalents and deferred tax assets.

**Capital Expenditures and Depreciation and Amortization**
The following table presents capital expenditures and depreciation and amortization by segment:

| | Capital Expenditures | | | Depreciation and Amortization[1] | | |
|---|---|---|---|---|---|---|
| *$ in millions* | **2015** | 2014 | 2013 | **2015** | 2014 | 2013 |
| Aerospace Systems | **$ 237** | $ 376 | $ 190 | **$ 215** | $ 208 | $ 213 |
| Mission Systems | **141** | 131 | 107 | **153** | 158 | 181 |
| Technology Services | **3** | 3 | 7 | **36** | 36 | 35 |
| Corporate | **90** | 51 | 60 | **63** | 60 | 66 |
| Total | **$ 471** | $ 561 | $ 364 | **$ 467** | $ 462 | $ 495 |

[1] Depreciation and amortization expense includes amortization of purchased intangible assets, as well as amortization of deferred and other outsourcing costs.

## 4. ACCOUNTS RECEIVABLE, NET

Unbilled amounts represent sales for which billings have not been presented to customers by period-end. These amounts are usually billed and collected within one year. Substantially all accounts receivable at December 31, 2015 are expected to be collected in 2016. The company does not believe it has significant exposure to credit risk, as accounts receivable and the related unbilled amounts are primarily from contracts where the U.S. Government is the primary customer.

Accounts receivable consisted of the following:

| $ in millions | December 31 2015 | 2014 |
|---|---|---|
| **Due from U.S. Government** | | |
| Billed | **$ 506** | $ 536 |
| Unbilled | **7,699** | 6,806 |
| Progress and performance-based payments received | **(6,140)** | (5,150) |
| | **2,065** | 2,192 |
| **Due from International and Other Customers[1]** | | |
| Billed | **223** | 283 |
| Unbilled | **3,713** | 3,461 |
| Progress and performance-based payments received | **(3,101)** | (3,062) |
| | **835** | 682 |
| Total accounts receivable | **2,900** | 2,874 |
| Allowance for doubtful accounts | **(59)** | (68) |
| Total accounts receivable, net | **$ 2,841** | $ 2,806 |

[1] Includes receivables due from the U.S. Government associated with foreign military sales.

## 5. INVENTORIED COSTS, NET

Inventoried costs consisted of the following:

| $ in millions | December 31 2015 | 2014 |
|---|---|---|
| Production costs of contracts in process | **$ 1,218** | $ 1,257 |
| General and administrative expenses | **293** | 252 |
| | **1,511** | 1,509 |
| Progress and performance-based payments received | **(807)** | (873) |
| | **704** | 636 |
| Product inventory | **103** | 106 |
| Total inventoried costs, net | **$ 807** | $ 742 |

## 6. INCOME TAXES

Federal and foreign income tax expense consisted of the following:

| $ in millions | Year Ended December 31 2015 | 2014 | 2013 |
|---|---|---|---|
| Federal income tax expense: | | | |
| Current | **$ 310** | $ 701 | $ 803 |
| Deferred | **472** | 155 | 84 |
| Total federal income tax expense | **782** | 856 | 887 |
| Foreign income tax expense: | | | |
| Current | **21** | 10 | 28 |
| Deferred | **(3)** | 2 | (4) |
| Total foreign income tax expense | **18** | 12 | 24 |
| Total federal and foreign income tax expense | **$ 800** | $ 868 | $ 911 |

Earnings from foreign operations before income taxes are not material for all periods presented.

Income tax expense differs from the amount computed by multiplying the statutory federal income tax rate times earnings before income taxes due to the following:

| | Year Ended December 31 | | |
|---|---|---|---|
| *$ in millions* | **2015** | 2014 | 2013 |
| Income tax expense at statutory rate | **$ 976** | $ 1,028 | $ 1,002 |
| Research tax credit | **(119)** | (43) | (37) |
| Manufacturing deduction | **(31)** | (48) | (63) |
| Settlements with taxing authorities | **—** | (51) | — |
| Other, net | **(26)** | (18) | 9 |
| Total federal and foreign income taxes | **$ 800** | $ 868 | $ 911 |

*2015* – The effective tax rate for 2015 was 28.7 percent, as compared with 29.6 percent in 2014. This reduction was driven by a $76 million increase in research credits primarily resulting from additional credits claimed on our prior year tax returns, partially offset by a $51 million benefit recorded in 2014 for the partial resolution of the IRS examination of our 2007-2009 tax returns.

*2014* – The effective tax rate for 2014 was 29.6 percent, as compared with 31.8 percent in 2013. The decline in the company's lower effective tax rate for 2014 reflects a $51 million benefit for the partial resolution of our 2007-2009 IRS examination.

Income tax payments, net of refunds received, were $118 million, $727 million and $880 million for the years ended December 31, 2015, 2014 and 2013, respectively.

**Uncertain Tax Positions**

The company files income tax returns in the U.S. federal jurisdiction and in various state and foreign jurisdictions. The company's 2007-2013 tax returns are currently either under IRS examination or appeals. In the first quarter of 2014, the U.S. Congressional Joint Committee on Taxation approved a partial resolution of the IRS examination of the company's 2007-2009 tax returns. As a result, the company recorded a reduction of income tax expense of $51 million. The company also reduced its unrecognized tax benefits by $59 million and related accrued interest by $12 million. During 2014, the company filed appeals with the IRS for the unresolved 2007-2009 tax return matters and for unresolved 2010-2011 examination matters.

The company believes it is reasonably possible that within the next twelve months, we may resolve certain matters on the years under examination or appeals, resulting in a reduction of our unrecognized tax benefits up to $175 million and a reduction of our income tax expense up to $45 million.

Open tax years related to state and foreign jurisdictions remain subject to examination, but are not considered material.

The change in unrecognized tax benefits during 2015, 2014 and 2013, excluding interest, is as follows:

| | December 31 | | |
|---|---|---|---|
| *$ in millions* | **2015** | 2014 | 2013 |
| Unrecognized tax benefits at beginning of the year | **$ 210** | $ 241 | $ 156 |
| Additions based on tax positions related to the current year | **52** | 62 | 56 |
| Additions for tax positions of prior years | **17** | 9 | 44 |
| Settlements with taxing authorities | **(10)** | (61) | (1) |
| Other, net | **(46)** | (41) | (14) |
| Net change in unrecognized tax benefits | **13** | (31) | 85 |
| Unrecognized tax benefits at end of the year | **$ 223** | $ 210 | $ 241 |

These liabilities, along with $23 million of accrued interest and penalties, are included in other current and non-current liabilities in the consolidated statements of financial position. If the income tax benefits from these tax positions are ultimately realized, $173 million of federal and foreign tax benefits would reduce the company’s effective tax rate.

Net interest expense within the company's federal, foreign and state income tax provisions was not material for all years presented.

**Deferred Income Taxes**
Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and tax purposes. Net deferred tax assets and liabilities are classified as non-current in the consolidated statements of financial position.

The tax effects of significant temporary differences and carryforwards that gave rise to year-end deferred federal, state and foreign tax balances, as presented in the consolidated statements of financial position, are as follows:

| | December 31 | |
|---|---|---|
| *$ in millions* | **2015** | 2014 |
| **Deferred Tax Assets** | | |
| Retiree benefits | **$ 2,549** | $ 2,745 |
| Accrued employee compensation | **316** | 311 |
| Provisions for accrued liabilities | **347** | 392 |
| Inventory | **227** | — |
| Stock-based compensation | **76** | 91 |
| Other | **68** | 104 |
| Gross deferred tax assets | **3,583** | 3,643 |
| Less valuation allowance | **(34)** | (53) |
| Net deferred tax assets | **3,549** | 3,590 |
| **Deferred Tax Liabilities** | | |
| Goodwill | **788** | 787 |
| Property, plant and equipment, net | **297** | 315 |
| Contract accounting differences | **976** | 332 |
| Other | **79** | 130 |
| Deferred tax liabilities | **2,140** | 1,564 |
| Total net deferred tax assets | **$ 1,409** | $ 2,026 |

Realization of deferred tax assets is primarily dependent on generating sufficient taxable income in future periods. The company believes it is more-likely-than-not all deferred tax assets will be realized, net of valuation allowances currently established.

At December 31, 2015, the company has available unused net operating losses of $198 million that may be applied against future taxable income, primarily in the United Kingdom, that may be used indefinitely. A valuation allowance of $34 million has been recorded against certain deferred tax assets due to the uncertainty of the realization of these net operating losses and other deferred tax assets, principally in foreign jurisdictions.

**Undistributed Foreign Earnings**
As of December 31, 2015, the company has accumulated undistributed earnings generated by its foreign subsidiaries of approximately $560 million. No deferred tax liability has been recorded on these earnings since the company intends to permanently reinvest these earnings and expects future U.S. cash generation will be sufficient to meet future U.S. cash needs. Should these earnings be distributed in the form of dividends or otherwise, the distributions would result in tax of approximately $45 million, representing U.S. federal income tax, less foreign tax credits available to offset such distributions.

## 7. GOODWILL AND OTHER PURCHASED INTANGIBLE ASSETS

**Goodwill**
Goodwill and other purchased intangible assets are included in the identifiable assets of the segment to which the operations of the acquired entity have been assigned. Accumulated goodwill impairment losses at December 31, 2015 and 2014, totaled $570 million at the Aerospace Systems segment.

Changes in the carrying amounts of goodwill for the years ended December 31, 2015 and 2014, were as follows:

| $ in millions | Aerospace Systems | Mission Systems | Technology Services | Total |
|---|---|---|---|---|
| **Balance as of December 31, 2013** | $ 3,742 | $ 6,714 | $ 1,982 | $ 12,438 |
| Businesses acquired and other[1] | — | (8) | 36 | 28 |
| **Balance as of December 31, 2014** | $ 3,742 | $ 6,706 | $ 2,018 | $ 12,466 |
| Businesses acquired and other[1] | **—** | **(2)** | **(4)** | **(6)** |
| **Balance as of December 31, 2015** | **$ 3,742** | **$ 6,704** | **$ 2,014** | **$ 12,460** |

[1] Other consists primarily of adjustments for foreign currency translation.

**Purchased Intangible Assets**
Net contract, program, and other intangible assets comprise the following:

| | December 31 | |
|---|---|---|
| *$ in millions* | **2015** | 2014 |
| Gross contract, program and other intangible assets | **$ 1,828** | $ 1,831 |
| Less accumulated amortization | **(1,751)** | (1,730) |
| Net contract, program and other intangible assets | **$ 77** | $ 101 |

Amortization expense for 2015, 2014 and 2013, was $22 million, $22 million and $26 million, respectively. The company's purchased intangible assets are being amortized on a straight-line basis over an aggregate weighted-average period of 21 years and are included in other non-current assets in the consolidated statements of financial position. As of December 31, 2015, the expected future amortization of purchased intangibles for each of the next five years is as follows:

| *$ in millions* | |
|---|---|
| Year Ending December 31 | |
| 2016 | $ 16 |
| 2017 | 14 |
| 2018 | 12 |
| 2019 | 10 |
| 2020 | 6 |

## 8. FAIR VALUE OF FINANCIAL INSTRUMENTS

The following table presents comparative carrying value and fair value information for our financial assets and liabilities:

| | **December 31, 2015** | | December 31, 2014 | |
|---|---|---|---|---|
| *$ in millions* | **Carrying Value** | **Fair Value** | Carrying Value | Fair Value |
| **Financial Assets (Liabilities)** | | | | |
| Marketable securities | | | | |
| Trading | **$ 303** | **$ 303** | $ 331 | $ 331 |
| Available-for-sale | **7** | **7** | 5 | 5 |
| Derivatives | **5** | **5** | 1 | 1 |
| Long-term debt, including current portion | **(6,526)** | **(6,907)** | (5,928) | (6,726) |

There were no transfers of financial instruments between the three levels of the fair value hierarchy during the years ended December 31, 2015 and 2014

The carrying value of cash and cash equivalents approximates fair value.

**Investments in Marketable Securities**
The company holds a portfolio of marketable securities consisting of securities that are classified as either trading or available-for-sale to partially fund non-qualified employee benefit plans. These assets are recorded at fair value on a recurring basis and substantially all of these instruments are valued using Level 1 inputs, with an immaterial amount valued using Level 2 inputs. As of December 31, 2015 and 2014, marketable securities of $310 million and $336 million, respectively, were included in other non-current assets in the consolidated statements of financial position.

**Derivative Financial Instruments and Hedging Activities**
The company's derivative portfolio consists primarily of foreign currency forward contracts. The notional value of the company's derivative portfolio at December 31, 2015 and 2014 was $141 million and $146 million, respectively. The portion of the notional value designated as cash flow hedges at December 31, 2015 and 2014, was $10 million and $34 million, respectively. Substantially all of these instruments are valued using Level 2 inputs. Where model-derived valuations are appropriate, the company utilizes the income approach to determine the fair value and uses the applicable London Interbank Offered Rate (LIBOR) swap rates. The derivative fair values and related unrealized gains/losses at December 31, 2015 and 2014, were not material.

**Long-Term Debt**
The fair value of long-term debt is calculated using Level 2 inputs, based on interest rates available for debt with terms and maturities similar to the company’s existing debt arrangements.

## 9. LONG-TERM DEBT

**Credit Facility**
In the third quarter of 2015, the Company amended its $1.8 billion five-year credit facility dated August 29, 2013 by reducing the aggregate principal amount available under the facility to $1.6 billion and extending the maturity to July 2020 (the “2015 Credit Agreement”).

The 2015 Credit Agreement contains generally customary terms and conditions, including covenants restricting the company's ability to sell all or substantially all of its assets, merge or consolidate with another entity or undertake other fundamental changes and incur liens. The company also cannot permit the ratio of its debt to capitalization (as set forth in the Credit Agreement) to exceed 65 percent. At December 31, 2015, the company was in compliance with all covenants under the Credit Agreement and there was no balance outstanding under this facility.

**Unsecured Senior Notes**
In February 2015, the company issued $600 million of unsecured senior notes due April 15, 2045 with a fixed interest rate of 3.85 percent (the Notes). Interest on the Notes is payable semi-annually in arrears. The Notes are subject to redemption, in whole or in part, at the company's discretion at any time, or from time to time, prior to maturity at a redemption price equal to the greater of the principal amount of the Notes or an applicable “make-whole” amount, plus accrued and unpaid interest. We are using the net proceeds from this offering for general corporate purposes, including the funding of a $500 million voluntary contribution to our pension plans in the first quarter of 2015 and a debt repayment due in 2016.

Long-term debt consists of the following:

| $ in millions | | December 31 2015 | 2014 |
|---|---|---|---|
| **Fixed-rate notes and debentures, maturing in** | **Interest rate** | | |
| 2016 | 7.75% | **$ 107** | $ 107 |
| 2018 | 1.75% - 6.75% | **1,050** | 1,050 |
| 2019 | 5.05% | **500** | 500 |
| 2021 | 3.50% | **700** | 700 |
| 2023 | 3.25% | **1,050** | 1,050 |
| 2026 | 7.75% - 7.88% | **527** | 527 |
| 2031 | 7.75% | **466** | 466 |
| 2040 | 5.05% | **300** | 300 |
| 2043 | 4.75% | **950** | 950 |
| 2045 | 3.85% | **600** | — |
| Capital leases | Various | **31** | 33 |
| Other | Various | **245** | 245 |
| Total long-term debt | | **6,526** | 5,928 |
| Less: current portion | | **110** | 3 |
| Long-term debt, net of current portion | | **$ 6,416** | $ 5,925 |

Indentures underlying long-term debt issued by the company or its subsidiaries contain various restrictions with respect to the issuer, including one or more restrictions relating to limitations on liens, sale-leaseback arrangements and funded debt of subsidiaries. The majority of these fixed rate notes and debentures are subject to redemption at the company's discretion at any time prior to maturity in whole or in part at the principal amount plus any make-whole premium and accrued and unpaid interest. Interest on these fixed rate notes and debentures are payable semi-annually in arrears.

Total interest payments, net of interest received, were $291 million, $281 million, and $234 million for the years ended December 31, 2015, 2014 and 2013, respectively.

Maturities of long-term debt as of December 31, 2015, are as follows:

| $ in millions | |
|---|---|
| Year Ending December 31 | |
| 2016 | $ 110 |
| 2017 | 3 |
| 2018 | 1,053 |
| 2019 | 504 |
| 2020 | 31 |
| Thereafter | 4,822 |
| Total principal payments | 6,523 |
| Unamortized premium on long-term debt, net of discount | 3 |
| Total long-term debt | $ 6,526 |

## 10. INVESTIGATIONS, CLAIMS AND LITIGATION

### Litigation

On May 4, 2012, the company commenced an action, *Northrop Grumman Systems Corp. v. United States*, in the U.S. Court of Federal Claims. This lawsuit relates to an approximately $875 million firm fixed price contract awarded to the company in 2007 by the U.S. Postal Service (USPS) for the construction and delivery of flats sequencing systems (FSS) as part of the postal automation program. The FSS have been delivered. The company's lawsuit is based on various theories of liability. The complaint seeks approximately $63 million for unpaid portions of the contract price, and approximately $115 million based on the company's assertions that, through various acts and omissions over the life of the contract, the USPS adversely affected the cost and schedule of performance and materially altered the company's obligations under the contract. The United States responded to the company's complaint with an answer, denying most of the company's claims, and counterclaims seeking approximately $410 million, less certain amounts outstanding under the contract. The principal counterclaim alleges that the company delayed its performance and caused damages to the USPS because USPS did not realize certain costs savings as early as it had expected. On April 2, 2013, the U.S. Department of Justice informed the company of a False Claims Act complaint relating to the FSS contract that was filed under seal by a relator in June 2011 in the U.S. District Court for the Eastern District of Virginia. On June 3, 2013, the United States filed a Notice informing the Court that the United States had decided not to intervene in this case. The relator alleged that the company violated the False Claims Act in a number of ways with respect to the FSS contract, alleged damage to the USPS in an amount of at least approximately $179 million annually, alleged that he was improperly discharged in retaliation, and sought an unspecified partial refund of the contract purchase price, penalties, attorney's fees and other costs of suit. The relator later voluntarily dismissed his retaliation claim and reasserted it in a separate arbitration, which he also ultimately voluntarily dismissed. On September 5, 2014, the court granted the company's motion for summary judgment and ordered the relator's False Claims Act case be dismissed with prejudice. On December 19, 2014, the company filed a motion for partial summary judgment asking the court to dismiss the principal counterclaim referenced above. On June 29, 2015, the Court heard argument and denied that motion without prejudice to filing a later motion to dismiss. Although the ultimate outcome of these matters ("the FSS matters," collectively), including any possible loss, cannot be predicted or estimated at this time, the company intends vigorously to pursue and defend the FSS matters.

On August 8, 2013, the company received a court-appointed expert's report in litigation pending in the Second Federal Court of the Federal District in Brazil brought by the Brazilian Post and Telegraph Corporation (ECT), a Brazilian state-owned entity, against Solystic SAS (Solystic), a French subsidiary of the company, and two of its consortium partners. In this suit, commenced on December 17, 2004, and relatively inactive for some period of time, ECT alleges the consortium breached its contract with ECT and seeks damages of approximately R$111 million (the equivalent of approximately $28 million as of December 31, 2015), plus interest, inflation adjustments and attorneys' fees, as authorized by Brazilian law, which amounts could be significant over time. The original suit sought R$89 million (the equivalent of approximately $23 million as of December 31, 2015) in damages. In October 2013, ECT asserted an additional damage claim of R$22 million (the equivalent of approximately $6 million as of December 31, 2015). In its counterclaim, Solystic alleges ECT breached the contract by wrongfully refusing to accept the equipment Solystic had designed and built and seeks damages of approximately €31 million (the equivalent of approximately $34 million as of December 31, 2015), plus interest, inflation adjustments and attorneys' fees, as authorized by Brazilian law. The Brazilian court retained an expert to consider certain issues pending before it. On August 8, 2013 and September 10, 2014, the company received reports from the expert, which contain some recommended findings relating to liability and the damages calculations put forth by ECT. Some of the expert's recommended findings were favorable to the company and others were favorable to ECT. In November 2014, the parties submitted comments on the expert's most recent report. On June 16, 2015, the court published a decision denying the parties' request to present oral testimony. At some future point, the court is expected to issue a decision on the parties' claims and counterclaims that could accept or reject, in whole or in part, the expert's recommended findings.

The company is one of several defendants in litigation brought by the Orange County Water District in Orange County Superior Court in California on December 17, 2004, for alleged contribution to volatile organic chemical contamination of the County's shallow groundwater. The lawsuit includes counts against the defendants for violation of the Orange County Water District Act, the California Super Fund Act, negligence, nuisance, trespass and declaratory relief. Among other things, the lawsuit seeks unspecified damages for the cost of remediation, payment of attorney fees and costs, and punitive damages. Trial on the statutory claims (those based on the Orange County Water District Act, the California Super Fund Act and declaratory relief) concluded on September 25, 2012. On October 29, 2013, the court issued its decision in favor of the defendants on the statutory claims. On May 9, 2014, the court granted defendants' dispositive motions on the remaining tort causes of action. Notice of entry of judgment was filed on July 1, 2014. The Orange County Water District filed a notice of appeal on August 28, 2014. The Orange County Water District filed its opening brief on October 14, 2015. The company is preparing its response.

The company is a party to various investigations, lawsuits, claims and other legal proceedings, including government investigations and claims, that arise in the ordinary course of our business. The nature of legal proceedings is such that we cannot assure the outcome of any particular matter. However, based on information available to the company to date, and other than with respect to the FSS matters discussed separately above, the company does not believe that the outcome of any matter pending against the company is likely to have a material adverse effect on the company's consolidated financial position as of December 31, 2015, or its annual results of operations or cash flows.

## 11. COMMITMENTS AND CONTINGENCIES

**Guarantees of Subsidiary Performance Obligations**
From time to time in the ordinary course of business, the company guarantees obligations of its subsidiaries under certain contracts. Generally, the company is liable under such an arrangement only if its subsidiary is unable to perform under its contract. Historically, the company has not incurred any substantial liabilities resulting from these guarantees.

In addition, the company's subsidiaries may enter into joint ventures, teaming and other business arrangements (collectively, Business Arrangements) to support our products and services in U.S. and international markets. The company generally strives to limit its exposure under these arrangements to its subsidiary's investment in the Business Arrangements or to the extent of such subsidiary's obligations under the applicable contract. In some cases, however, the company may be required to guarantee performance by the Business Arrangements and, in such cases, the company generally strives to obtain cross-indemnification from the other members of the Business Arrangements.

At December 31, 2015, the company is not aware of any existing event of default that would require it to satisfy any of these guarantees.

**U.S. Government Cost Claims**
From time to time, the company is advised of claims by the U.S. Government concerning certain potential disallowed costs, plus, at times, penalties and interest. When such findings are presented, the company and the U.S. Government representatives engage in discussions to enable the company to evaluate the merits of these claims, as well as to assess the amounts being claimed. Where appropriate, provisions are made to reflect the company's estimated exposure for matters raised by the U.S. Government. Such provisions are reviewed periodically using the most recent information available. The company believes it has adequately reserved for disputed amounts that are probable and estimable, and the outcome of any such matters would not have a material adverse effect on its consolidated financial position as of December 31, 2015, or its annual results of operations and/or cash flows.

**Environmental Matters**
The table below summarizes management's estimate of the range of reasonably possible future costs for environmental remediation, the amount accrued within that range, and the deferred costs expected to be recoverable through overhead charges on U.S. Government contracts as of December 31, 2015 and 2014:

| *$ in millions* | Range of Reasonably Possible Future Costs(1) | Accrued Costs(2) | Deferred Costs(3) |
|---|---|---|---|
| **December 31, 2015** | **$353 - $812** | **$ 370** | **$ 186** |
| December 31, 2014 | 363 - 809 | 381 | 193 |

(1) The range of reasonably possible future costs does not take into consideration amounts expected to be recoverable through overhead charges on U.S. Government contracts.

(2) As of December 31, 2015, $113 million is recorded in other current liabilities and $257 million is recorded in other non-current liabilities.

(3) As of December 31, 2015, $57 million is deferred in inventoried costs and $129 million is deferred in other non-current assets. These amounts are evaluated for recoverability on a routine basis.

Although management cannot predict whether new information gained as our environmental remediation projects progress, or as changes in facts and circumstances occur, will materially affect the estimated liability accrued, we do not anticipate future remediation expenditures associated with our currently identified projects will have a material adverse effect on the company's consolidated financial position as of December 31, 2015, or its annual results of operations and/or cash flows.

**Financial Arrangements**
In the ordinary course of business, the company uses standby letters of credit and guarantees issued by commercial banks, and surety bonds issued principally by insurance companies to guarantee the performance on certain obligations. At December 31, 2015, there were $235 million of stand-by letters of credit and guarantees, and $151 million of surety bonds outstanding.

**Indemnifications**
The company has retained certain environmental, income tax and other potential liabilities in connection with certain of its divestitures. The settlement of these liabilities is not expected to have a material adverse effect on the company's consolidated financial position as of December 31, 2015, or its annual results of operations and/or cash flows.

**Operating Leases**
Rental expense for operating leases was $302 million in 2015, $304 million in 2014, and $298 million in 2013. These amounts are net of immaterial amounts of sublease rental income. Minimum rental commitments under long-term non-cancelable operating leases as of December 31, 2015 are payable as follows:

*$ in millions*

| Year Ending December 31 | |
|---|---|
| 2016 | $ 251 |
| 2017 | 201 |
| 2018 | 135 |
| 2019 | 99 |
| 2020 | 61 |
| Thereafter | 92 |
| Total minimum lease payments | $ 839 |

*Subsequent Event* - Included in the amounts listed in the table above are annual rental expenses of approximately $17 million for a facility currently under lease through December 31, 2021. On January 4, 2016, we exercised an option to purchase the facility for approximately $150 million. The purchase is expected to close in the first quarter of 2016.

**12. RETIREMENT BENEFITS**

**Plan Descriptions**
*Defined Benefit Pension Plans* – The company sponsors several defined benefit pension plans in the U.S. covering the majority of its employees. Pension benefits for most employees are based on the employee's years of service, age and compensation. It is our policy to fund at least the minimum amount required for all qualified plans, using actuarial cost methods and assumptions acceptable under U.S. Government regulations, by making payments into benefit trusts separate from the company.

*Defined Contribution Plans* – The company also sponsors 401(k) defined contribution plans in which most employees are eligible to participate, including certain employees covered under collective bargaining agreements. Company contributions for most plans are based on employer matching of up to 50 percent of employee contributions up to eight percent of compensation. In addition to the 401(k) defined contribution benefit, certain employees hired after June 30, 2008, are eligible to participate in a defined contribution program in lieu of a defined benefit pension plan. The company's contributions to these defined contribution plans for the years ended December 31, 2015, 2014 and 2013, were $291 million, $282 million and $285 million, respectively.

*Non-U.S. Benefit Plans* – The company sponsors several benefit plans for non-U.S. employees. These plans are designed to provide benefits appropriate to local practice and in accordance with local regulations. Some of these plans are funded using benefit trusts that are separate from the company.

*Medical and Life Benefits* – The company provides a portion of the costs for certain health care and life insurance benefits for a substantial number of its active and retired employees. Certain covered employees achieve eligibility to participate in these plans upon retirement from active service if they meet specified age and years of service requirements. Qualifying dependents are also eligible for plan benefits in certain circumstances. The company reserves the right to amend or terminate the plans at any time. The company has capped the amount of its contributions to substantially all of its remaining post retirement medical and life benefit plans.

In addition to a company and employee cost-sharing feature, the health plans also have provisions for deductibles, co-payments, coinsurance percentages, out-of-pocket limits, conformance to a schedule of reasonable fees, the use of managed care providers and coordination of benefits with other plans. The plans also provide for a Medicare carve-out. Subsequent to January 1, 2005 (or earlier at some segments), newly hired employees are not eligible for subsidized post retirement medical and life benefits.

In the first quarter of 2014, we communicated an amendment to most of our Medicare-eligible retirees, that beginning in the third quarter of 2014, in lieu of the benefits previously provided under the plans, the company will provide subsidies to reimburse retirees for a portion of the cost of individual Medicare-supplemental coverage purchased directly by the retiree through a private insurance exchange. The amendment did not affect Pre-Medicare retirees. We expect that the cost of retiree medical coverage in 2016 will be comparable to 2015.

**Summary Plan Results**

The cost to the company of its retirement benefit plans is shown in the following table:

| | Year Ended December 31 | | | | | |
|---|---|---|---|---|---|---|
| | Pension Benefits | | | Medical and Life Benefits | | |
| *$ in millions* | **2015** | 2014 | 2013 | **2015** | 2014 | 2013 |
| **Components of net periodic benefit cost** | | | | | | |
| Service cost | **$ 484** | $ 457 | $ 516 | **$ 35** | $ 34 | $ 36 |
| Interest cost | **1,224** | 1,260 | 1,117 | **94** | 99 | 96 |
| Expected return on plan assets | **(1,975)** | (1,871) | (1,809) | **(89)** | (83) | (75) |
| Amortization of: | | | | | | |
| Prior service credit | **(60)** | (59) | (58) | **(28)** | (45) | (51) |
| Net loss from previous years | **682** | 327 | 608 | **27** | 13 | 30 |
| Other | **—** | 1 | — | **—** | — | — |
| **Net periodic benefit cost** | **$ 355** | $ 115 | $ 374 | **$ 39** | $ 18 | $ 36 |

The table below summarizes the components of changes in unamortized benefit plan costs for the years ended December 31, 2015, 2014 and 2013:

| *$ in millions* | Pension Benefits | Medical and Life Benefits | Total |
|---|---|---|---|
| **Changes in unamortized benefit plan costs** | | | |
| Change in net actuarial loss | $ (2,158) | $ (280) | $ (2,438) |
| Amortization of: | | | |
| Prior service credit | 58 | 51 | 109 |
| Net loss from previous years | (608) | (30) | (638) |
| Tax expense related to above items | 1,075 | 102 | 1,177 |
| Change in unamortized benefit plan costs – 2013 | (1,633) | (157) | (1,790) |
| Change in net actuarial loss | 3,833 | 234 | 4,067 |
| Change in prior service cost | — | (92) | (92) |
| Amortization of: | | | |
| Prior service credit | 59 | 45 | 104 |
| Net loss from previous years | (327) | (13) | (340) |
| Tax benefit related to above items | (1,357) | (66) | (1,423) |
| Change in unamortized benefit plan costs – 2014 | 2,208 | 108 | 2,316 |
| Change in net actuarial loss | **626** | **(125)** | **501** |
| Change in prior service cost | **—** | **—** | **—** |
| Amortization of: | | | |
| Prior service credit | **60** | **28** | **88** |
| Net loss from previous years | **(682)** | **(27)** | **(709)** |
| Tax (benefit) expense related to above items | **(1)** | **46** | **45** |
| Change in unamortized benefit plan costs – 2015 | **$ 3** | **$ (78)** | **$ (75)** |

The table below presents the components of accumulated other comprehensive loss related to the company's retirement benefit plans:

| | Pension Benefits | | Medical and Life Benefits | |
|---|---|---|---|---|
| *$ in millions* | **2015** | 2014 | **2015** | 2014 |
| **Amounts recorded in accumulated other comprehensive loss** | | | | |
| Net actuarial loss | **$ (8,741)** | $ (8,797) | **$ (220)** | $ (372) |
| Prior service credit | **304** | 364 | **66** | 94 |
| Income tax benefits related to above items | **3,286** | 3,285 | **64** | 110 |
| Unamortized benefit plan costs | **$ (5,151)** | $ (5,148) | **$ (90)** | $ (168) |

The following table sets forth the funded status and amounts recognized in the consolidated statements of financial position for the company's retirement benefit plans. Pension benefits data includes the qualified plans, foreign plans and U.S. unfunded non-qualified plans for benefits provided to directors, officers and certain employees. The company uses a December 31 measurement date for its plans.

| | Pension Benefits | | Medical and Life Benefits | |
|---|---|---|---|---|
| *$ in millions* | **2015** | 2014 | **2015** | 2014 |
| **Change in plan assets** | | | | |
| Fair value of plan assets at beginning of year | **$ 25,063** | $ 24,098 | **$ 1,216** | $ 1,175 |
| Net gain on plan assets | **(258)** | 2,298 | **(5)** | 108 |
| Employer contributions | **578** | 78 | **68** | 57 |
| Participant contributions | **10** | 19 | **22** | 50 |
| Benefits paid | **(1,428)** | (1,409) | **(151)** | (186) |
| Other | **(15)** | (21) | **3** | 12 |
| Fair value of plan assets at end of year | **23,950** | 25,063 | **1,153** | 1,216 |
| **Change in projected benefit obligation** | | | | |
| Projected benefit obligation at beginning of year | **30,525** | 25,972 | **2,398** | 2,224 |
| Service cost | **484** | 457 | **35** | 34 |
| Interest cost | **1,224** | 1,260 | **94** | 99 |
| Participant contributions | **10** | 19 | **22** | 50 |
| Plan amendments | **—** | — | **—** | (92) |
| Actuarial (gain) loss | **(1,602)** | 4,273 | **(219)** | 258 |
| Benefits paid | **(1,428)** | (1,409) | **(151)** | (186) |
| Other | **(31)** | (47) | **2** | 11 |
| Projected benefit obligation at end of year | **29,182** | 30,525 | **2,181** | 2,398 |
| **Funded status** | **$ (5,232)** | $ (5,462) | **$ (1,028)** | $ (1,182) |
| | | | | |
| **Classification of amounts recognized in the consolidated statements of financial position** | | | | |
| Non-current assets | **$ 18** | $ 3 | **$ 79** | $ 80 |
| Current liability | **(142)** | (133) | **(43)** | (39) |
| Non-current liability | **(5,108)** | (5,332) | **(1,064)** | (1,223) |

The following table shows those amounts expected to be recognized in net periodic benefit cost in 2016:

| *$ in millions* | Pension Benefits | Medical and Life Benefits | Total |
|---|---|---|---|
| **Amounts expected to be recognized in 2016 net periodic benefit cost** | | | |
| Net actuarial loss | $ 714 | $ 16 | $ 730 |
| Prior service credit | (60) | (22) | (82) |

The accumulated benefit obligation for all defined benefit pension plans was $29.0 billion and $30.3 billion at December 31, 2015 and 2014, respectively. Amounts for pension plans with accumulated benefit obligations in excess of fair value of plan assets are as follows:

| | December 31 | |
|---|---|---|
| *$ in millions* | **2015** | 2014 |
| Projected benefit obligation | **$ 29,131** | $ 30,405 |
| Accumulated benefit obligation | **28,923** | 30,172 |
| Fair value of plan assets | **23,882** | 24,940 |

**Plan Assumptions**

On a weighted-average basis, the following assumptions were used to determine benefit obligations and net periodic benefit cost:

| | Pension Benefits | | Medical and Life Benefits | |
|---|---|---|---|---|
| | **2015** | 2014 | **2015** | 2014 |
| **Assumptions used to determine benefit obligation at December 31** | | | | |
| Discount rate | **4.53%** | 4.12% | **4.47%** | 4.04% |
| Initial cash balance crediting rate assumed for the next year | **3.00%** | 2.75% | | |
| Rate to which the cash balance crediting rate is assumed to increase (the ultimate rate) | **3.75%** | 3.50% | | |
| Year that the cash balance crediting rate reaches the ultimate rate | **2021** | 2020 | | |
| Rate of compensation increase | **3.00%** | 3.00% | | |
| Initial health care cost trend rate assumed for the next year | | | **7.00%** | 6.50% |
| Rate to which the health care cost trend rate is assumed to decline (the ultimate trend rate) | | | **5.00%** | 5.00% |
| Year that the health care cost trend rate reaches the ultimate trend rate | | | **2020** | 2019 |
| **Assumptions used to determine benefit cost for the year ended December 31** | | | | |
| Discount rate | **4.12%** | 4.99% | **4.04%** | 4.90% |
| Initial cash balance crediting rate assumed for the next year | **2.75%** | 3.90% | | |
| Rate to which the cash balance crediting rate is assumed to increase (the ultimate rate) | **3.50%** | 4.70% | | |
| Year that the cash balance crediting rate reaches the ultimate rate | **2020** | 2019 | | |
| Expected long-term return on plan assets | **8.00%** | 8.00% | **7.58%** | 7.45% |
| Rate of compensation increase | **3.00%** | 3.00% | | |
| Initial health care cost trend rate assumed for the next year | | | **6.50%** | 6.50% |
| Rate to which the health care cost trend rate is assumed to decline (the ultimate trend rate) | | | **5.00%** | 5.00% |
| Year that the health care cost trend rate reaches the ultimate trend rate | | | **2019** | 2017 |

**Plan Assets and Investment Policy**

Plan assets are invested in various asset classes that are expected to produce a sufficient level of diversification and investment return over the long term. The investment goal is to exceed the assumed rate of return over the long term within reasonable and prudent levels of risk. Through consultation with our investment management team and outside investment advisers, management develops expected long-term returns for each of the plans' strategic asset classes. In addition to our historical investment performance, we consider several factors, including current market data such as yields/price-earnings ratios, historical market returns over long periods and periodic surveys of investment managers' expectations. Using policy target allocation percentages and the asset class expected returns, we calculate a weighted-average expected return. Liability studies are conducted on a regular basis to provide guidance in setting investment goals with an objective to balance risk. Risk targets are established and monitored against acceptable ranges.

Our investment policies and procedures are designed to ensure the plans' investments are in compliance with ERISA (Employee Retirement Income Security Act). Guidelines are established defining permitted investments within each asset class. Derivatives are used for transitioning assets, asset class rebalancing, managing currency risk and for management of fixed income and alternative investments.

For the majority of the plans' assets, the investment policies require that the asset allocation be maintained within the following ranges as of December 31, 2015:

| | Asset Allocation Ranges |
|---|---|
| U.S. equities | 15% - 35% |
| International equities | 10% - 30% |
| Fixed income securities | 20% - 55% |
| Alternative investments | 10% - 30% |

The table below provides the fair values of the company's pension and VEBA trust plan assets at December 31, 2015 and 2014, by asset category. The table also identifies the level of inputs used to determine the fair value of assets in each category (see Note 1 for definition of levels). The significant amount of Level 2 investments in the table results from including in this category investments in pooled funds that contain investments with values based on quoted market prices, but for which the funds are not valued on a quoted market basis, and fixed income securities valued using model-based pricing services.

| | Level 1 | | Level 2 | | Level 3 | | Total | |
|---|---|---|---|---|---|---|---|---|
| *$ in millions* | **2015** | 2014 | **2015** | 2014 | **2015** | 2014 | **2015** | 2014 |
| **Asset category** | | | | | | | | |
| Cash and cash equivalents[1] | **$ 37** | $ 38 | **$ 1,471** | $ 1,737 | | | **$ 1,508** | $ 1,775 |
| U.S. equities[2] | **4,043** | 4,729 | **593** | 147 | **$ 2** | $ 2 | **4,638** | 4,878 |
| International equities[2] | **2,300** | 2,675 | **2,551** | 2,062 | | | **4,851** | 4,737 |
| Fixed income securities | | | | | | | | |
| U.S. Treasuries | | | **530** | 957 | | | **530** | 957 |
| U.S. Government Agency | | | **717** | 909 | | | **717** | 909 |
| Non-U.S. Government | | | **309** | 440 | | | **309** | 440 |
| Corporate debt | | | **4,919** | 5,710 | | | **4,919** | 5,710 |
| Asset backed | | | **392** | 604 | **1** | 4 | **393** | 608 |
| High yield debt | | | **1,719** | 586 | | | **1,719** | 586 |
| Bank loans | | | **261** | 228 | | | **261** | 228 |
| Alternative Investments | | | | | | | | |
| Hedge funds | | | | | **497** | 632 | **497** | 632 |
| Private equities | | | | | **1,850** | 2,030 | **1,850** | 2,030 |
| Real estate | | | | | **2,886** | 2,759 | **2,886** | 2,759 |
| Other[3] | **20** | 32 | **5** | (2) | | | **25** | 30 |
| Fair value of plan assets at the end of the year | **$ 6,400** | $ 7,474 | **$ 13,467** | $ 13,378 | **$ 5,236** | $ 5,427 | **$ 25,103** | $ 26,279 |

(1) Cash and cash equivalents are predominantly held in money market or short-term investment funds.

(2) U.S. and international equities represent private investment funds that primarily hold diversified investments in underlying equity securities. These funds are structured as limited partnerships, one of which has an unfunded commitment of $25 million. Redemption periods are monthly with a notice requirement less than 30 days.

(3) Other assets include derivative assets with a fair value of $40 million and $84 million, derivative liabilities with a fair value of $25 million and $59 million, and net notional amounts of $3.2 billion and $3.0 billion, as of December 31, 2015 and 2014, respectively. Derivative instruments may include exchange traded futures contracts, interest rate swaps, options on futures and swaps, currency contracts, total return swaps and credit default swaps. Notional amounts do not quantify risk or represent assets or liabilities of the pension and VEBA trusts, but are used in the calculation of cash settlement under the contracts. The volume of derivative activity is commensurate with the amounts disclosed at year-end. Certain derivative financial instruments within the pension trust are subject to master netting agreements with certain counterparties.

The changes in the fair value of the pension and VEBA plan trust assets measured using Level 3 significant unobservable inputs during 2015 and 2014, are as follows:

| *$ in millions* | Hedge funds and High-yield debt | Private equities | Real Estate | Other | **Total** |
|---|---|---|---|---|---|
| **Balance as of December 31, 2013** | $ 822 | $ 2,075 | $ 2,767 | $ 6 | $ 5,670 |
| Actual return on plan assets: | | | | | |
| Unrealized (losses) gains, net | (46) | (60) | 173 | — | 67 |
| Realized gains, net | 89 | 10 | 71 | — | 170 |
| Purchases | 21 | 431 | 61 | — | 513 |
| Sales | (254) | (426) | (313) | — | (993) |
| **Balance as of December 31, 2014** | 632 | 2,030 | 2,759 | 6 | 5,427 |
| Actual return on plan assets: | | | | | |
| Unrealized gains (losses), net | **(55)** | **(193)** | **235** | **—** | **(13)** |
| Realized gains (losses), net | **50** | **(2)** | **(7)** | **—** | **41** |
| Purchases | **87** | **225** | **52** | **—** | **364** |
| Sales | **(217)** | **(210)** | **(153)** | **(3)** | **(583)** |
| **Balance as of December 31, 2015** | **$ 497** | **$ 1,850** | **$ 2,886** | **$ 3** | **$ 5,236** |
| The amount of total gains and (losses) for the period attributable to the change in unrealized gains or (losses) related to assets held at year-end | **$ (55)** | **$ (172)** | **$ 310** | **$ —** | **$ 83** |

There were no transfers of plan assets between the three levels of the fair value hierarchy during the years ended December 31, 2015 and 2014.

Generally, investments are valued based on information in financial publications of general circulation, statistical and valuation services, records of security exchanges, appraisal by qualified persons, transactions and bona fide offers. U.S. and international equities consist primarily of common stocks and institutional common trust funds. Investments in common and preferred shares are valued at the last reported sales price of the stock on the last business day of the reporting period. Units in common trust funds and hedge funds are valued based on the redemption price of units owned by the trusts at year-end. Fair value for real estate and private equity partnerships is primarily based on valuation methodologies that include third party appraisals, comparable transactions, discounted cash flow valuation models and public market data.

Non-government fixed income securities are invested across various industry sectors and credit quality ratings. Generally, investment guidelines are written to limit securities, for example, to no more than five percent of each trust account, and to exclude the purchase of securities issued by the company. The number of real estate, hedge fund and private equity partnerships is 167 and the unfunded commitments are $1.5 billion and $833 million as of December 31, 2015 and 2014, respectively. For alternative investments that cannot be redeemed, the typical investment term is ten years. For alternative investments that permit redemptions, such redemptions are generally made quarterly and require a 90-day notice. The company is generally unable to determine the final redemption date and amount until the request is processed by the investment fund and therefore categorizes such alternative investments as Level 3 assets.

For the years ended December 31, 2015 and 2014, the defined benefit pension and VEBA trusts did not hold any Northrop Grumman common stock.

**Benefit Payments**

The following table reflects estimated future benefit payments for the next ten years, based upon the same assumptions used to measure the benefit obligation, and includes expected future employee service, as of December 31, 2015:

| *$ in millions* | Pension Plans | Medical and Life Plans | Total |
|---|---|---|---|
| Year Ending December 31 | | | |
| 2016 | $ 1,469 | $ 151 | $ 1,620 |
| 2017 | 1,513 | 155 | 1,668 |
| 2018 | 1,563 | 158 | 1,721 |
| 2019 | 1,614 | 160 | 1,774 |
| 2020 | 1,664 | 161 | 1,825 |
| 2021 through 2025 | 9,065 | 788 | 9,853 |

In 2016, the company expects to contribute the required minimum funding of approximately $79 million to its pension plans and approximately $75 million to its other post-retirement benefit plans. During the year ended December 31, 2015, the company made a voluntary pension contribution of $500 million.

## 13. STOCK COMPENSATION PLANS AND OTHER COMPENSATION ARRANGEMENTS

**Stock Compensation Plans**

At December 31, 2015, Northrop Grumman had stock-based compensation awards outstanding under the following plans: the 2001 Long-Term Incentive Stock Plan (2001 Plan) and the 2011 Long-Term Incentive Stock Plan (2011 Plan), both applicable to employees, and the 1993 Stock Plan for Non-Employee Directors (1993 SPND). All of these plans were approved by the company's shareholders. The company has historically issued new shares to satisfy award grants.

*Employee Plans* – In 2011, the shareholders of the company approved the company's 2011 Plan, which replaced the expired 2001 Plan. The 2011 Plan permits grants to key employees of three general types of stock incentive awards: stock options, stock appreciation rights (SARs) and stock awards. Outstanding stock options granted after January 1, 2008, vest in equal increments over three years from the grant date, and grants outstanding expire seven years after the grant date. No SARs have been granted under either plan. Stock awards in the form of restricted performance stock rights (RPSR) and restricted stock rights (RSR) are granted to key employees without payment to the company. The 2011 Plan also provides equity-based award grants to non-employee directors.

Under the 2011 Plan, the company is authorized to issue or transfer shares of common stock pursuant to the types of awards mentioned above. The 2011 Plan authorized 39.1 million new shares plus 6.9 million shares from the 2001 Plan that were previously authorized and available to be issued at the date the 2001 Plan expired. In May 2015, the shareholders of the company approved amendments to the 2011 Plan (Amended 2011 Plan). The Amended 2011 Plan, among other things, removed the prior requirement to count 4.5 shares for every one stock award share issued against the aggregate share limit. Shares issued under the Amended 2011 Plan are counted against the aggregate share limit on a one-for-one basis. Based on a one-for-one share count, the amended shares available for grant are 5.1 million shares, plus 2.4 million of newly authorized shares. Under the terms of the Amended 2011 Plan, in the event awards issued under the 2001 Plan and 2011 Plan and outstanding on March 10, 2015 expire or terminate without being exercised or paid, such shares will become available for award under the Amended 2011 Plan.

Recipients of RPSRs earn shares of stock, based on achievement of financial objectives determined by the board of directors in accordance with the plan. Depending on actual performance against these objectives, recipients earn between 0 and 200 percent of the original grant (between 0 and 150 percent for the company's Corporate Policy Council), as well as dividend equivalents on the ultimate number of shares issued. Termination of employment can result in forfeiture of some or all of the benefits extended.

As of December 31, 2015, 7.5 million shares are available for grant under the Amended 2011 Plan.

*Non-Employee Director Plans* – Under the 2011 Plan, each non-employee director must defer a portion of their compensation into a stock unit account (Automatic Stock Units). The Automatic Stock Units accrued under the 2011 Plan and the 1993 SPND are paid out in the form of common stock at the conclusion of the director's board service, or earlier, as specified by the director, if he or she has five or more years of service. In addition, each director may elect to defer payment of all or a portion of his or her remaining cash retainer or committee retainer fees into a stock unit account (Elective Stock Units) or in alternative investment options. The Elective Stock Units are paid at the conclusion of board service or earlier as specified by the director, regardless of years of service. Directors are credited with dividend equivalents in connection with the Automatic and Elective Stock Units until shares of common stock related to such stock units are issued. Since all directors are eligible to receive awards under the 2011 Plan, shares from this plan are available for future director awards following the same share counting limits as described for the employee plans. Awards under the 2011 Plan are made pursuant to the Northrop Grumman Corporation Equity Grant Program for Non-Employee Directors under the 2011 Plan (the Director Program), which sets forth the terms and conditions for the awards of stock units as described above.

The Director Program was amended and restated effective January 1, 2016 (the Amended Director Program). In 2016, directors will receive two stock unit grants - a one-time transitional grant on January 1, 2016 (the Transition Stock Units) and an annual grant of Automatic Stock Units on May 18, 2016. The Transition Stock Units will vest on May 18, 2016, and the Automatic Stock Units will vest on the one year anniversary of the grant date. Under the Amended Director Program, directors may elect to have all or any portion of their Transition Stock Units and Automatic Stock Units paid on (A) the earlier of (i) the beginning of a specified calendar year after the vesting date or (ii) their separation from service as a member of the Board, or (B) on the vesting date. Directors may elect to defer to a later year all or a portion of their remaining cash retainer or committee retainer fees into a stock unit account as Elective Stock Units or in alternative investment options. Elective Stock Units are awarded on a calendar quarterly basis. Directors may elect to have all or a portion of their Elective Stock Units paid on the earlier of (i) the beginning of a specified calendar year or (ii) their separation from service as a member of the Board. Stock units awarded under the Amended Director Program will be paid out in an equivalent number of shares of Northrop Grumman common stock.

**Compensation Expense**

Stock-based compensation expense and the related tax benefits for the years ended December 31, 2015, 2014 and 2013, are as follows:

| | Year Ended December 31 | | |
|---|---|---|---|
| *$ in millions* | **2015** | 2014 | 2013 |
| **Stock-based compensation expense:** | | | |
| Stock options | **$ —** | $ — | $ 4 |
| Stock awards | **99** | 134 | 140 |
| Total stock-based compensation expense | **99** | 134 | 144 |
| Tax benefits from the exercise of stock options | **6** | 29 | 25 |
| Tax benefits from the issuance of stock awards | **97** | 52 | 16 |
| Total tax benefits recognized for stock-based compensation | **$ 103** | $ 81 | $ 41 |

At December 31, 2015, there was $88 million of unrecognized compensation expense related to unvested stock awards granted under the company's stock-based compensation plans. These amounts are expected to be charged to expense over a weighted-average period of 1.3 years.

**Stock Options**

There were no stock options issued in 2015 or 2014. As of December 31, 2015 and 2014, there were 0.1 million and 0.3 million stock options outstanding, respectively. There were 0.2 million stock options exercised during the year ended December 31, 2015. All stock options outstanding were fully vested and exercisable at December 31, 2015.

The total intrinsic value of exercised stock options for the years ended December 31, 2015, 2014 and 2013, was $18 million, $94 million and $118 million, respectively. The total intrinsic value for options outstanding for the years ended December 31, 2015, 2014 and 2013, was $20 million, $28 million and $101 million, respectively. Intrinsic value is measured using the fair market value at the date of exercise (for options exercised), or at December 31, 2015 (for options outstanding), less the applicable exercise price.

**Stock Awards**

Compensation expense for stock awards is measured at the grant date based on the fair value of the award and is recognized over the vesting period (generally three years). The fair value of stock awards and performance stock awards is determined based on the closing market price of the company's common stock on the grant date. The fair value of market-based stock awards is determined at the grant date using a Monte Carlo simulation model. For purposes of measuring compensation expense for performance awards, the number of shares ultimately expected to vest is estimated at each reporting date based on management's expectations regarding the relevant performance criteria.

Stock award activity for the years ended December 31, 2015, 2014 and 2013, is presented in the table below. Vested awards do not include any adjustments to reflect the final performance measure for issued shares.

| | Stock Awards (in thousands) | Weighted-Average Grant Date Fair Value | Weighted-Average Remaining Contractual Term (in years) |
|---|---|---|---|
| **Outstanding at January 1, 2013** | 3,478 | $ 61 | 1.6 |
| Granted | 1,577 | 64 | |
| Vested | (1,323) | 60 | |
| Forfeited | (312) | 62 | |
| **Outstanding at December 31, 2013** | 3,420 | $ 61 | 1.5 |
| Granted | 763 | 118 | |
| Vested | (1,217) | 58 | |
| Forfeited | (158) | 70 | |
| **Outstanding at December 31, 2014** | 2,808 | $ 77 | 1.1 |
| Granted | **539** | **166** | |
| Vested | **(1,691)** | **62** | |
| Forfeited | **(70)** | **108** | |
| **Outstanding at December 31, 2015** | **1,586** | **$ 122** | **1.2** |

The following table presents the number of RSRs and RPSRs granted to employees under the company's long-term incentive stock plan and the grant date aggregate fair value of those stock awards for the periods presented:

| | Year Ended December 31 | | |
|---|---|---|---|
| *in millions* | **2015** | 2014 | 2013 |
| RSRs granted | **0.2** | 0.2 | 0.5 |
| RPSRs granted | **0.4** | 0.6 | 1.1 |
| Grant date aggregate fair value | **$ 89** | $ 90 | $ 101 |

The majority of our stock awards are granted annually during the first quarter. RSRs typically vest on the third anniversary of the grant date, while RPSRs generally vest and pay out based on the achievement of financial metrics for the three-year period ending on December 31 of the third year subsequent to grant.

The following table presents the gross number of shares issued to employees in settlement of fully vested stock awards and the total fair value at issuance and on the grant date for the periods presented:

| | Year Ended December 31 | | |
|---|---|---|---|
| *in millions* | **2015** | 2014 | 2013 |
| Gross number of shares issued(1) | **2.6** | 2.6 | 3.4 |
| Fair value at issuance(2) | **$ 434** | $ 305 | $ 226 |
| Grant date fair value(2) | **143** | 80 | 105 |

(1) The gross number of shares issued includes the effect of performance adjustments. Actual shares issued to employees are net of shares withheld for taxes.

(2) The difference between the fair value at issuance and the grant date fair value reflects changes in the fair market value of the company's common stock.

In 2016, the company expects to issue to employees approximately 1.7 million shares of common stock with a grant date fair value of $96 million, principally related to the 2013 RPSR awards that vested as of December 31, 2015.

The ultimate amount of shares to be paid out is subject to approval by the Compensation Committee of the Board of Directors and may vary from this estimate.

**Cash Awards**

The company grants certain employees cash units (CUs) and cash performance units (CPUs). Depending on actual performance against financial objectives, recipients of CPUs earn between 0 and 200 percent of the original grant. The following table presents the minimum and maximum aggregate payout amounts related to those cash awards granted for the periods presented:

| | Year Ended December 31 | | |
|---|---|---|---|
| *$ in millions* | **2015** | 2014 | 2013 |
| Minimum aggregate payout amount | **$ 37** | $ 32 | $ 32 |
| Maximum aggregate payout amount | **194** | 179 | 173 |

The following table presents unrecognized compensation expense associated with the company's cash awards:

| | December 31 | | |
|---|---|---|---|
| *$ in millions* | **2015** | 2014 | 2013 |
| Unrecognized compensation expense | **$ 128** | $ 122 | $ 108 |

The majority of our cash awards are granted annually during the first quarter. CUs typically vest and settle in cash on the third anniversary of the grant date, while CPUs generally vest and pay out in cash based on the achievement of financial metrics for a three-year period ending on December 31 of the third year subsequent to grant.

## 14. UNAUDITED SELECTED QUARTERLY DATA

Unaudited quarterly financial results are set forth in the following tables. It is the company's long-standing practice to establish actual interim closing dates using a "fiscal" calendar in which we close our books on a Friday near each quarter-end date, in order to normalize the potentially disruptive effects of quarterly closings on business processes. This practice is only used at interim periods within a reporting year.

**2015**

| *In millions, except per share amounts* | 1st Qtr | 2nd Qtr | 3rd Qtr | 4th Qtr |
|---|---|---|---|---|
| Sales | **$ 5,957** | **$ 5,896** | **$ 5,979** | **$ 5,694** |
| Operating income | **780** | **813** | **794** | **689** |
| Net earnings | **484** | **531** | **516** | **459** |
| | | | | |
| Basic earnings per share | **2.45** | **2.77** | **2.78** | **2.52** |
| Diluted earnings per share | **2.41** | **2.74** | **2.75** | **2.49** |
| | | | | |
| Weighted-average common shares outstanding | **197.7** | **191.8** | **185.8** | **182.1** |
| Weighted-average diluted shares outstanding | **200.5** | **193.7** | **187.9** | **184.2** |

**2014**

| *In millions, except per share amounts* | 1st Qtr | 2nd Qtr | 3rd Qtr | 4th Qtr |
|---|---|---|---|---|
| Sales | $ 5,848 | $ 6,039 | $ 5,984 | $ 6,108 |
| Operating income | 845 | 820 | 769 | 762 |
| Net earnings | 579 | 511 | 473 | 506 |
| | | | | |
| Basic earnings per share | 2.68 | 2.41 | 2.29 | 2.52 |
| Diluted earnings per share | 2.63 | 2.37 | 2.26 | 2.48 |
| | | | | |
| Weighted-average common shares outstanding | 216.3 | 212.4 | 206.2 | 200.8 |
| Weighted-average diluted shares outstanding | 220.4 | 215.2 | 209.2 | 204.2 |