NORTHROP GRUMMAN CORP /DE/
Form 10-Q
October 24, 2018
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

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x QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the Quarterly Period Ended September 30, 2018
or
o TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
Commission File Number 1-16411
NORTHROP GRUMMAN CORPORATION
(Exact name of registrant as specified in its charter)

DELAWARE	80-0640649
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
2980 Fairview Park Drive, Falls Church, Virginia	22042
(Address of principal executive offices)	(Zip Code)

(703) 280-2900
(Registrant’s telephone number, including area code)
Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.
Yes x No o
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).
Yes x No o
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of “large accelerated filer,” “accelerated filer,” “smaller reporting company” and “emerging growth company” in Rule 12b-2 of the Exchange Act:

Large accelerated filer x	Accelerated filer o
Non-accelerated filer o	Smaller reporting company o
Emerging growth company o	

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.o
Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).
Yes o No x

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.
As of October 19, 2018, 173,619,710 shares of common stock were outstanding.

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Item 1. Financial Statements
CONDENSED CONSOLIDATED STATEMENTS OF EARNINGS AND COMPREHENSIVE INCOME
(Unaudited)

	Three Months Ended September 30		Nine Months Ended September 30	
$ in millions, except per share amounts	2018	2017	2018	2017
Sales				
Product	$5,614	$4,183	$14,693	$12,217
Service	2,471	2,386	7,246	7,235
Total sales	8,085	6,569	21,939	19,452
Operating costs and expenses				
Product	4,229	3,189	11,188	9,209
Service	1,861	1,864	5,629	5,608
General and administrative expenses	817	679	2,267	2,063
Operating income	1,178	837	2,855	2,572
Other (expense) income				
Interest expense	(133)	(73)	(420)	(224)
Net FAS (non-service) pension benefit (expense)	135	2	380	(33)
Other, net	57	16	142	67
Earnings before income taxes	1,237	782	2,957	2,382
Federal and foreign income tax expense	93	139	385	534
Net earnings	$1,144	$643	$2,572	$1,848
Basic earnings per share	$6.57	$3.69	$14.76	$10.59
Weighted-average common shares outstanding, in millions	174.1	174.2	174.3	174.5
Diluted earnings per share	$6.54	$3.67	$14.68	$10.52
Weighted-average diluted shares outstanding, in millions	174.9	175.3	175.2	175.6
Net earnings (from above)	$1,144	$643	$2,572	$1,848
Other comprehensive income				
Change in unamortized benefit plan costs, net of tax	84	99	256	300
Change in cumulative translation adjustment	(2)	—	(4)	—
Other, net	(1)	—	(5)	3
Other comprehensive income, net of tax	81	99	247	303
Comprehensive income	$1,225	$742	$2,819	$2,151

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

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CONDENSED CONSOLIDATED STATEMENTS OF FINANCIAL POSITION
(Unaudited)

$ in millions	September 30, 2018	December 31, 2017
Assets		
Cash and cash equivalents	$ 1,228	$ 11,225
Accounts receivable, net	1,702	1,054
Unbilled receivables, net	5,600	3,465
Inventoried costs, net	719	398
Prepaid expenses and other current assets	883	445
Total current assets	10,132	16,587
Property, plant and equipment, net of accumulated depreciation of $5,307 for 2018 and $5,066 for 2017	6,025	4,225
Goodwill	18,642	12,455
Intangible assets, net	1,460	52
Deferred tax assets	69	447
Other non-current assets	1,615	1,362
Total assets	$ 37,943	$ 35,128
Liabilities		
Trade accounts payable	$ 1,939	$ 1,661
Accrued employee compensation	1,645	1,382
Advance payments and amounts in excess of costs incurred	1,686	1,761
Other current liabilities	2,769	2,288
Total current liabilities	8,039	7,092
Long-term debt, net of current portion of $517 for 2018 and $867 for 2017	13,889	14,399
Pension and other post-retirement benefit plan liabilities	5,394	5,511
Other non-current liabilities	1,518	994
Total liabilities	28,840	27,996
Commitments and contingencies (Note 8)		
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: 2018—173,727,400 and 2017—174,085,619	174	174
Paid-in capital	—	44
Retained earnings	14,464	11,632
Accumulated other comprehensive loss	(5,535)	(4,718)
Total shareholders’ equity	9,103	7,132
Total liabilities and shareholders’ equity	$ 37,943	$ 35,128

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

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CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

	Nine Months Ended September 30	
$ in millions	2018	2017
Operating activities		
Net earnings	$2,572	$1,848
Adjustments to reconcile to net cash provided by operating activities:		
Depreciation and amortization	534	323
Stock-based compensation	82	66
Deferred income taxes	176	86
Changes in assets and liabilities:		
Accounts receivable, net	(52)	(368)
Unbilled receivables, net	(898)	(1,049)
Inventoried costs, net	(102)	(20)
Prepaid expenses and other assets	(109)	(95)
Accounts payable and other liabilities	(125)	80
Income taxes payable, net	(114)	(58)
Retiree benefits	(447)	235
Other, net	(67)	(42)
Net cash provided by operating activities	1,450	1,006
Investing activities		
Acquisition of Orbital ATK, net of cash acquired	(7,657)	—
Capital expenditures	(786)	(650)
Other, net	23	21
Net cash used in investing activities	(8,420)	(629)
Financing activities		
Payments of long-term debt	(2,276)	—
Payments to credit facilities	(314)	—
Net borrowings on commercial paper	499	—
Common stock repurchases	(209)	(393)
Cash dividends paid	(616)	(515)
Payments of employee taxes withheld from share-based awards	(84)	(91)
Other, net	(27)	(41)
Net cash used in financing activities	(3,027)	(1,040)
Decrease in cash and cash equivalents	(9,997)	(663)
Cash and cash equivalents, beginning of year	11,225	2,541
Cash and cash equivalents, end of period	$1,228	$1,878

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

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CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
(Unaudited)

	Nine Months Ended September 30	
$ in millions, except per share amounts	2018	2017
Common stock		
Beginning of year	$174	$175
Common stock repurchased	(1)	(2)
Shares issued for employee stock awards and options	1	1
End of period	174	174
Paid-in capital		
Beginning of year	44	—
Common stock repurchased	(34)	—
Stock compensation	(10)	16
End of period	—	16
Retained earnings		
Beginning of year	11,632	10,734
Impact from adoption of ASU 2018-02 and ASU 2016-01 (See Note 1)	1,064	—
Common stock repurchased	(179)	(371)
Net earnings	2,572	1,848
Dividends declared	(616)	(511)
Stock compensation	(9)	(39)
End of period	14,464	11,661
Accumulated other comprehensive loss		
Beginning of year	(4,718)	(5,546)
Impact from adoption of ASU 2018-02 and ASU 2016-01 (See Note 1)	(1,064)	—
Other comprehensive income, net of tax	247	303
End of period	(5,535)	(5,243)
Total shareholders' equity	$9,103	$6,608
Cash dividends declared per share	$3.50	$2.90

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

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NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (Unaudited)

1. BASIS OF PRESENTATION

Principles of Consolidation and Reporting

These unaudited condensed consolidated financial statements (the "financial statements") include the accounts of Northrop Grumman Corporation and its subsidiaries and joint ventures or other investments for which we consolidate the financial results (herein referred to as "Northrop Grumman," the "company," "we," "us," or "our"). 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.

On June 6, 2018 (the "Merger date"), the company completed its previously announced acquisition of Orbital ATK, Inc. ("Orbital ATK") (the "Merger"). On the Merger date, Orbital ATK became a wholly-owned subsidiary of the company and its name was changed to Northrop Grumman Innovation Systems, Inc., which we established as a new, fourth business sector ("Innovation Systems"). The operating results of Innovation Systems subsequent to the Merger date have been included in the company's consolidated results of operations. See Note 2 to the financial statements for further information regarding the Merger.

The financial statements are prepared in conformity with accounting principles generally accepted in the United States of America ("GAAP" or "FAS") and in accordance with the rules of the Securities and Exchange Commission (SEC) for interim reporting. The financial statements include adjustments of a normal recurring nature considered necessary by management for a fair presentation of the company's unaudited condensed consolidated financial position, results of operations and cash flows.

The results reported in these financial statements are not necessarily indicative of results that may be expected for the entire year. These financial statements should be read in conjunction with the information contained in the company's Annual Report on Form 10-K for the year ended December 31, 2017 (2017 Annual Report on Form 10-K).

The quarterly information is labeled using a calendar convention; that is, first quarter is consistently labeled as ending on March 31, second quarter as ending on June 30 and third quarter as ending on September 30. It is legacy Northrop Grumman's long-standing practice to establish actual interim closing dates using a "fiscal" calendar, in which we close our books on a Friday near these quarter-end dates in order to normalize the potentially disruptive effects of quarterly closings on business processes. Similarly, Innovation Systems uses a "fiscal" calendar by closing its books on a Sunday near these quarter-end dates and will continue this practice until its business processes are aligned with legacy Northrop Grumman's. The Friday and Sunday closing dates noted herein are both labeled as September 30, consistent with our calendar convention described above. This practice is only used at interim periods within a reporting year.

As previously announced, effective January 1, 2018, we adopted Accounting Standards Codification (ASC) Topic 606, Revenue from Contracts with Customers, and Accounting Standards Update (ASU) No. 2017-07, Compensation Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost, using the full retrospective method. The adoption of these standards are reflected in the amounts and disclosures set forth in this Form 10-Q and the effect of these standards on the company's unaudited condensed consolidated statements of earnings and comprehensive income for the three and nine months ended September 30, 2017 and unaudited condensed consolidated statement of financial position as of December 31, 2017 is reflected in Note 12.

Accounting Estimates

Preparation of the financial statements 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.

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 a combination of both. The company classifies sales as product or service based on the predominant attributes of each contract.

Under ASC Topic 606, the company recognizes revenue for each separately identifiable performance obligation in a contract representing a promise to transfer a distinct good or service to a customer. In most cases, goods and services

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provided under the company's contracts are accounted for as single performance obligations due to the complex and integrated nature of our products and services. These contracts generally require significant integration of a group of goods and/or services to deliver a combined output. In some contracts, the company provides multiple distinct goods or services to a customer, most commonly when a contract covers multiple phases of the product lifecycle (development, production, maintenance and/or support). In those cases, the company accounts for the distinct contract deliverables as separate performance obligations and allocates the transaction price to each performance obligation based on its relative standalone selling price, which is generally estimated using the cost plus a reasonable margin approach of ASC Topic 606. Warranties are provided on certain contracts, but do not typically provide for services beyond standard assurances and are therefore not within the scope of ASC Topic 606. Likewise, our accounting for costs to obtain or fulfill a contract was not significantly impacted by the adoption of ASC Topic 606 as these costs are not material.

A contract modification exists when the parties to a contract approve a change in the scope or price of a contract. Contracts are often modified for changes in contract specifications or requirements. Most of the company's contract modifications are for goods or services that are not distinct in the context of the contract and are therefore accounted for as part of the original performance obligation through a cumulative estimate-at-completion (EAC) adjustment.

The company recognizes revenue as control is transferred to the customer, either over time or at a point in time. In general, our U.S. government contracts contain termination for convenience clauses that generally entitle the customer to goods produced and/or in-process. Similarly, our non-U.S. government contracts generally contain contractual termination clauses or entitle the company to payment for work performed to date for goods and services that do not have an alternative use. As control is effectively transferred while we perform on our contracts and we are typically entitled to cost plus a reasonable margin for work in process if the contract is terminated for convenience, we generally recognize revenue over time using the cost-to-cost method (cost incurred relative to total cost estimated at completion) as the company believes this represents the most appropriate measurement towards satisfaction of its performance obligations. Revenue for contracts in which the control of goods produced does not transfer until delivery to the customer is recognized at a point in time (i.e., typically upon delivery).

Contract Estimates

Use of the cost-to-cost method requires us to make reasonably dependable estimates regarding the revenue and cost associated with the design, manufacture and delivery of our products and services. The company estimates profit on these contracts as the difference between total estimated sales and total estimated cost at completion and recognizes that profit as costs are incurred. Significant judgment is used to estimate total revenue and cost at completion.

Contract sales may include estimates of variable consideration, including cost or performance incentives (such as award and incentive fees), contract claims and requests for equitable adjustment (REAs). Variable consideration is included in total estimated sales to the extent it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved. We estimate variable consideration as the most likely amount to which we expect to be entitled.

We recognize changes in estimated contract sales or costs and the resulting changes in contract profit on a cumulative basis. Cumulative EAC adjustments represent the cumulative effect of the changes on current and prior periods; sales and operating margins in future periods are recognized as if the revised estimates had been used since contract inception. If it is determined that a loss is expected to result on an individual performance obligation, the entire amount of the estimable future loss, including an allocation of general and administrative (G&A) costs, is charged against income in the period the loss is identified. Each loss provision is first offset against costs included in unbilled accounts receivable or inventoried costs; remaining amounts are reflected in other current liabilities.

Significant EAC adjustments on a single contract could have a material effect on the company's financial statements. When 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 financial statements during the three months ended September 30, 2018. During the three months ended September 30, 2017, the company recorded a $56 million favorable EAC adjustment at Aerospace Systems.

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

	Three Months Ended September 30		Nine Months Ended September 30	
$ in millions, except per share data	2018	2017	2018	2017
Operating Income	$149	$114	$408	$357
Net Earnings[(1)]	117	74	322	232
Diluted earnings per share[(1)]	0.67	0.42	1.84	1.32

[(1)] Based on statutory tax rates in effect for each period presented.

Revenue recognized from performance obligations satisfied in previous reporting periods was $149 million and $438 million for the three and nine months ended September 30, 2018, respectively, and $122 million and $368 million for the three and nine months ended September 30, 2017, respectively.

Backlog

Backlog represents the future sales we expect to recognize on firm orders received by the company and is equivalent to the company's remaining performance obligations at the end of each period. It comprises 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 an option or IDIQ task order is exercised or awarded.

Company backlog as of September 30, 2018 was $52.6 billion. We expect to recognize approximately 50 percent and 75 percent of our September 30, 2018 backlog as revenue over the next 12 and 24 months, respectively, with the remainder to be recognized thereafter.

Contract Assets and Liabilities

For each of the company's contracts, the timing of revenue recognition, customer billings, and cash collections results in a net contract asset or liability at the end of each reporting period. Fixed-price contracts are typically billed to the customer either using progress payments, whereby amounts are billed monthly as costs are incurred or work is completed, or performance based payments, which are based upon the achievement of specific, measurable events or accomplishments defined and valued at contract inception. Cost-type contracts are typically billed to the customer on a monthly or semi-monthly basis.

Contract assets consist of unbilled receivables, primarily related to long-term contracts where revenue recognized under the cost-to-cost method exceeds amounts billed to customers. Unbilled receivables are classified as current assets and, in accordance with industry practice, include amounts that may be billed and collected beyond one year due to the long-cycle nature of many of our contracts. Accumulated contract costs in unbilled receivables include costs such as direct production costs, factory and engineering overhead, production tooling costs, and allowable G&A. Unbilled receivables also include certain estimates of variable consideration described above. These contract assets are not considered a significant financing component of the company's contracts as the payment terms are intended to protect the customer in the event the company does not perform on its obligations under the contract.

Contract liabilities include advance payments and billings in excess of revenue recognized. Certain customers make advance payments prior to the company's satisfaction of its obligations on the contract. These amounts are recorded as contract liabilities until such obligations are satisfied, either over time as costs are incurred or at a point in time when deliveries are made. Contract liabilities are not a significant financing component as they are generally utilized to pay for contract costs within a one-year period or are used to ensure the customer meets contractual requirements.

Net contract assets (liabilities) are as follows:

$ in millions	September 30, 2018	December 31, 2017	$ Change	% Change
Unbilled receivables, net	$ 5,600	$ 3,465	$ 2,135	62 %

Advance payments and amounts in excess of costs incurred	(1,686)	(1,761)	75	(4)%
Net contract assets (liabilities)	$ 3,914	$ 1,704	$ 2,210	130 %

The change in the balances of the company's contract assets and liabilities primarily results from timing differences between revenue recognition and customer billings and/or payments. The increase in net contract assets during the nine months ended September 30, 2018, is principally due to the addition of $1.3 billion of net contract assets from

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Innovation Systems, higher volume on restricted programs at Aerospace Systems and higher volume on the F-35 program at Mission Systems.

The amount of revenue recognized that was included in the December 31, 2017 contract liability balance was $168 million and $1.2 billion for the three and nine months ended September 30, 2018, respectively. The amount of revenue recognized that was included in the December 31, 2016 contract liability balance was $162 million and $1.0 billion for the three and nine months ended September 30, 2017, respectively.

Disaggregation of Revenue

See Note 11 for information regarding the company's sales by customer type, contract type and geographic region for each of our segments. We believe those categories best depict how the nature, amount, timing and uncertainty of our revenue and cash flows are affected by economic factors.

Other Purchased Intangible Assets

Purchased intangible asset balances are included in the identifiable assets of their assigned business segment. Beginning in 2018, the company includes the amortization of purchased intangible assets in unallocated corporate expense within operating income as such amortization is no longer considered part of management's evaluation of segment operating performance. The company's customer-related intangible assets are generally amortized over their respective useful lives based on the pattern in which the future economic benefits of the intangible assets are expected to be consumed. Other purchased intangible assets are generally amortized on a straight-line basis over their estimated useful lives.

Property, Plant and Equipment

Property, plant and equipment are depreciated over the estimated useful lives of individual assets. Most assets are depreciated using declining-balance methods, with the remainder using the straight-line method. Depreciation expense is generally recorded in the same segment where the related assets are held. However, for assets acquired in the Merger, the additional depreciation expense related to the step-up in fair value of acquired property, plant and equipment is recorded in unallocated corporate expense within operating income as such depreciation is not considered part of management's evaluation of segment operating performance.

Accumulated Other Comprehensive Loss

The components of accumulated other comprehensive loss are as follows:

$ in millions	September 30, 2018	December 31, 2017
Unamortized benefit plan costs, net of tax benefit of $1,912 for 2018 and $3,056 for 2017	$ (5,390)	$ (4,586)
Cumulative translation adjustment	(140)	(136)
Other, net	(5)	4
Total accumulated other comprehensive loss	$ (5,535)	$ (4,718)

Unamortized benefit plan costs as of September 30, 2018 reflect a reclassification from accumulated other comprehensive loss to retained earnings of $1.1 billion of stranded tax effects resulting from the Tax Cuts and Jobs Act (the "2017 Tax Act"). This reclassification resulted from the company's early adoption of ASU 2018-02 on January 1, 2018. See "Accounting Standards Updates" below for more information.

Unamortized benefit plan costs consist primarily of net after-tax actuarial losses totaling $5.5 billion and $4.7 billion as of September 30, 2018 and December 31, 2017, respectively. Net actuarial gains or losses are redetermined 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 loss to net earnings related to the amortization of benefit plan costs were $86 million and $258 million, net of taxes, for the three and nine months ended September 30, 2018, respectively, and were $100 million and $299 million, net of taxes, for the three and nine months ended September 30, 2017, respectively. The reclassifications represent the amortization of net actuarial losses and prior service credits, and are included in the computation of net periodic pension cost. See Note 9 for further information.

Reclassifications from accumulated other comprehensive loss to net earnings relating to cumulative translation adjustments and effective cash flow hedges were not material for the three and nine months ended September 30, 2018 and 2017.

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Related Party Transactions

The company had no material related party transactions in any period presented.

Accounting Standards Updates

On February 14, 2018, the Financial Accounting Standards Board (FASB) issued ASU 2018-02, Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income. ASU 2018-02 allows companies to reclassify stranded tax effects resulting from the 2017 Tax Act from accumulated other comprehensive income to retained earnings. As described above, the company elected to early adopt ASU 2018-02 on January 1, 2018, which resulted in a reclassification of $1.1 billion of stranded tax effects, principally related to our unamortized benefit plan costs, from accumulated other comprehensive loss to retained earnings. This reclassification included $73 million of other income tax effects related to a reduction in the federal benefit associated with state taxes. Adoption of ASU 2018-02 did not have a material impact on the company's results of operations and/or cash flows.

On March 10, 2017, the FASB issued ASU No. 2017-07, Compensation Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost. ASU 2017-07 requires employers that sponsor defined benefit pension and/or other post-retirement benefit plans to report the service cost component of net benefit cost in the same line item as other compensation costs arising from services rendered by the pertinent employees during the period. Employers are required to present the other components of net benefit costs in the income statement separately from the service cost component and outside a subtotal of income from operations. Additionally, only the service cost component of net periodic pension cost is eligible for asset capitalization. We adopted ASU 2017-07 on January 1, 2018 using the retrospective method. See Note 12 for information regarding the effect of adopting ASU 2017-07 on our unaudited condensed consolidated statement of earnings and comprehensive income for the three and nine months ended September 30, 2017. Adoption of ASU 2017-07 did not have a material impact on our unaudited condensed consolidated statements of financial position or cash flows.

On February 25, 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842). ASU 2016-02 supersedes existing lease guidance, including ASC 840 - Leases. Among other things, ASU 2016-02 requires recognition of a right-of-use asset and liability for future lease payments for contracts that meet the definition of a lease and requires disclosure of certain information about leasing arrangements. ASU 2016-02 will be effective January 1, 2019, although early adoption is permitted. On July 30, 2018, the FASB issued ASU No. 2018-11, Leases (Topic 842): Targeted Improvements, which, among other things, allows companies to elect an optional transition method to apply the new lease standard through a cumulative-effect adjustment in the period of adoption. We expect to adopt the standard on January 1, 2019 using the optional transition method. The company has made substantial progress in executing our implementation plan. We have revised our controls and processes to address the lease standard and have completed the implementation and data input for our lease accounting software tool. We are currently evaluating the preliminary information produced by the system and expect to have an estimate of the impact of ASU 2016-02 on the company's consolidated financial position during the fourth quarter of 2018. Topic ASU 2016-02 also requires expanded disclosure regarding the amounts, timing and uncertainties of cash flows related to a company's lease portfolio. We are evaluating these disclosure requirements and are incorporating the collection of relevant data into our processes. We do not expect ASU 2016-02 to have a material impact on our annual results of operations and/or cash flows.

On January 5, 2016, the FASB issued ASU No. 2016-01, Financial Instruments (Topic 825): Recognition and Measurement of Financial Assets and Financial Liabilities. ASU 2016-01 requires equity investments that are not accounted for under the equity method of accounting or that do not result in consolidation of the investee to be measured at fair value with changes recognized in net earnings. ASU 2016-01 also eliminates the available-for-sale classification for equity investments that recognized changes in fair value as a component of other comprehensive income. We adopted ASU 2016-01 on January 1, 2018 using the modified retrospective method, which resulted in a $4 million (net of tax) cumulative-effect adjustment from accumulated other comprehensive loss to retained earnings. Adoption of ASU 2016-01 did not have a material impact on our results of operations and/or cash flows.

On May 28, 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606). Topic 606 supersedes previous revenue recognition guidance, including ASC 605-35, Revenue Recognition - Construction-Type and Production-Type Contracts, and 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. The primary impact of the adoption of ASC Topic 606 was that, in most cases, the accounting for those contracts where we previously recognized revenue as units were delivered changed under ASC Topic 606 such that we now recognize revenue as costs are incurred. In addition, for certain of our contracts, there is a change in the number of performance obligations under ASC Topic 606, which has altered the timing of revenue and margin recognition.

We adopted ASC Topic 606 on January 1, 2018 using the full retrospective method. We applied the transition practical expedient related to remaining performance obligations for reporting periods presented before the date of initial application. No other practical expedients were applied. The cumulative effect of adopting ASC Topic 606 was a $148 million increase to retained earnings at January 1, 2016. See Note 12 for information regarding the effect of adopting ASC Topic 606 on our unaudited condensed consolidated statement of earnings and comprehensive income for the three and nine months ended September 30, 2017 and unaudited condensed consolidated statement of financial position as of December 31, 2017.

Other accounting standards updates adopted and/or issued, but not effective until after September 30, 2018, are not expected to have a material effect on the company's unaudited condensed consolidated financial position, annual results of operations and/or cash flows.

2. ACQUISITION OF ORBITAL ATK

On June 6, 2018, the company completed its previously announced acquisition of Orbital ATK, a global leader in aerospace and defense technologies, by acquiring all of the outstanding shares of Orbital ATK for a purchase price of $7.7 billion in cash. On the Merger date, Orbital ATK became a wholly-owned subsidiary of the company and its name was changed to Northrop Grumman Innovation Systems, Inc. We established Innovation Systems as a new, fourth business sector, whose main products include launch vehicles and related propulsion systems; missile products, subsystems and defense electronics; precision weapons, armament systems and ammunition; satellites and associated space components and services; and advanced aerospace structures. The acquisition was financed with proceeds from the company's debt financing completed in October 2017 and cash on hand. We believe this acquisition will enable us to broaden our capabilities and offerings, provide additional innovative solutions to meet our customers' emerging requirements, create value for shareholders and provide expanded opportunities for our combined employees.

The operating results of Innovation Systems subsequent to the Merger date are included in the company's consolidated results of operations. Innovation Systems recognized sales of $1.4 billion and $1.8 billion, operating income of $161 million and $200 million and net earnings of $128 million and $158 million for the three and nine months ended September 30, 2018, respectively.

The company recognized $29 million of acquisition-related costs that were expensed as incurred during the nine months ended September 30, 2018. These costs are included in Product and Service cost in the unaudited condensed consolidated statement of earnings and comprehensive income.

Preliminary Purchase Price Allocation

The acquisition was accounted for as a purchase business combination. As such, the company recorded the assets acquired and liabilities assumed at fair value, with the excess of the purchase price over the fair value of assets acquired and liabilities assumed recorded as goodwill. Determining the fair value of assets acquired and liabilities assumed requires significant judgment, including the amount and timing of expected future cash flows, long-term growth rates and discount rates. In some cases, the company used discounted cash flow analyses, which were based on our best estimate of future sales, earnings and cash flows after considering such factors as general market conditions, customer budgets, existing firm and future orders, changes in working capital, long term business plans and recent operating performance. Use of different estimates and judgments could yield materially different results.

During the three months ended June 30, 2018, the company completed a preliminary analysis to determine the fair values of the assets acquired and liabilities assumed and the amounts recorded reflected management's initial assessment of fair value as of the Merger date. Based on additional information obtained during the three months ended September 30, 2018, the company refined its initial assessment of fair value and, as a result, recognized the following significant adjustments to our preliminary purchase price allocation: Intangible assets increased $220 million, Other current liabilities increased $94 million, Other current assets increased $67 million, Pension and other post-retirement benefit plan liabilities increased $50 million and Goodwill decreased $104 million. These adjustments did not result in a material impact on the financial results of prior periods.

The company expects to finalize its purchase price allocation within one year of the Merger date. We are continuing to analyze and assess relevant information in the following areas to determine the fair value of assets acquired and liabilities assumed as of the Merger Date: real estate; intangible assets; income tax; and certain existing or potential reserves, such as those for legal, environmental and contract-related matters. The final fair value determination could result in material adjustments to the values presented in the preliminary purchase price allocation table below.

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The Merger date fair value of the consideration transferred totaled $7.7 billion in cash, which was comprised of the following:

$ in millions, except per share amounts	Purchase price
Shares of Orbital ATK common stock outstanding as of the Merger date	57,562,152
Cash consideration per share of Orbital ATK common stock	$ 134.50
Total purchase price	$ 7,742

The following preliminary purchase price allocation table presents the company's refined estimate of the fair values of assets acquired and liabilities assumed at the Merger date:

$ in millions	As of June 6, 2018
Cash and cash equivalents	$85
Accounts receivable, net	596
Unbilled receivables, net	1,237
Inventoried costs, net	220
Other current assets	260
Property, plant and equipment	1,509
Goodwill	6,191
Intangible assets	1,525
Deferred tax assets	(264)
Other non-current assets	131
Total assets acquired	11,490
Trade accounts payable	(397)
Accrued employee compensation	(158)
Advance payments and amounts in excess of costs incurred	(222)
Below market contracts(1)	(151)
Other current liabilities	(392)
Long-term debt	(1,687)
Pension and other post-retirement benefit plan liabilities	(607)
Other non-current liabilities	(134)
Total liabilities assumed	(3,748)
Total purchase price	$7,742

(1) Included in Other current liabilities.

Below market contracts represent liabilities on certain acquired programs where the expected costs at completion exceed the expected sales under contract. We measured these liabilities based on the estimated price to transfer the obligations to a market participant at the Merger date plus a reasonable profit margin. These liabilities will be reduced as the company incurs costs to complete its performance obligations on the underlying programs. This reduction will be included in sales and is estimated as follows: $37 million in 2018, $66 million in 2019, $46 million in 2020 and $2 million in 2021.

The following table presents a summary of purchased intangible assets and their related estimated useful lives:

	Fair Value (in millions)	Estimated Useful Life in Years
Customer contracts	$ 1,245	9
Commercial customer relationships	280	13

Total customer-related intangible assets	$ 1,525

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The preliminary purchase price allocation resulted in the recognition of $6.2 billion of goodwill, a majority of which was allocated to the Innovation Systems sector (refer to Note 5). The goodwill recognized is attributable to expected revenue synergies generated by the integration of Aerospace Systems, Mission Systems and Technology Services products and technologies with those of legacy Orbital ATK, synergies resulting from the consolidation or elimination of certain costs, and intangible assets that do not qualify for separate recognition, such as the assembled workforce of Orbital ATK. None of the goodwill is expected to be deductible for tax purposes.

Supplemental Pro Forma Information

The following table presents unaudited pro forma financial information prepared in accordance with Article 11 of Regulation S-X and computed as if Orbital ATK had been included in our results as of January 1, 2017:

$ in millions, except per share amounts	Three Months Ended September 30 2017	Nine Months Ended September 30 2018	2017
Sales	$ 7,744	$24,163	$22,783
Net earnings	655	2,749	1,868
Basic earnings per share	3.76	15.77	10.70
Diluted earnings per share	3.74	15.69	10.64

The unaudited supplemental pro forma financial data has been calculated after applying our accounting policies and adjusting the historical results of Orbital ATK with pro forma adjustments, net of tax, that assume the acquisition occurred on January 1, 2017. Significant pro forma adjustments include the following:

1. The impact of the adoption of ASC Topic 606 on Orbital ATK's historical sales of $2 million and $23 million, and cost of sales of $9 million and $18 million, for the three and nine months ended September 30, 2017, respectively.
2. The elimination of intercompany sales and costs of sales between the company and Orbital ATK of $80 million for the nine months ended September 30, 2018 and $43 million and $108 million for the three and nine months ended September 30, 2017, respectively.
3. The elimination of nonrecurring transaction costs incurred by the company and Orbital ATK in connection with the Merger of $71 million for the nine months ended September 30, 2018.
4. The recognition of additional depreciation expense, net of removal of historical depreciation expense, of $10 million for the nine months ended September 30, 2018, and $7 million and $21 million for the three and nine months ended September 30, 2017, respectively, related to the step-up in fair value of acquired property, plant and equipment.
5. Additional interest expense related to the debt issued to finance the Merger, including amortization of the debt issuance costs associated with the newly issued debt, of $66 million and $199 million for the three and nine months ended September 30, 2017. Interest expense and amortization of debt issuance costs have been included in the company's historical financial statements since the date of issuance (October 12, 2017).
6. The recognition of additional amortization expense, net of removal of historical amortization expense, of $101 million for the nine months ended September 30, 2018, and $73 million and $217 million for the three and nine months ended September 30, 2017, respectively, related to the fair value of acquired intangible assets.
7. The elimination of Orbital ATK's historical amortization of net actuarial losses and prior service credits and impact of the revised pension and other post-retirement net periodic benefit cost as determined under the company's plan assumptions of $51 million for the nine months ended September 30, 2018 and $27 million and $81 million for the three and nine months ended September 30, 2017, respectively.
8. The income tax effect of the pro forma adjustments, which was calculated using the federal statutory tax rate in effect in each respective period, of $(2) million for the nine months ended September 30, 2018 and $42 million and $124 million for the three and nine months ended September 30, 2017, respectively.

The unaudited pro forma financial information does not reflect the potential realization of revenue synergies or cost savings, nor does it reflect other costs relating to the integration of the two companies. This pro forma financial information should not be considered indicative of the results that would have actually occurred if the acquisition had been consummated on January 1, 2017, nor are they indicative of future results.

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3. 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 primarily include the dilutive effect of awards granted to employees under stock-based compensation plans. The dilutive effect of these securities totaled 0.8 million shares and 0.9 million shares for the three and nine months ended September 30, 2018, respectively. The dilutive effect of these securities totaled 1.1 million shares for both the three and nine months ended September 30, 2017.

Share Repurchases

On September 16, 2015, the company's board of directors authorized a share repurchase program of up to $4.0 billion of the company's common stock (the "2015 Repurchase Program"). Repurchases under the 2015 Repurchase Program commenced in March 2016. As of September 30, 2018, repurchases under the 2015 Repurchase Program totaled $1.9 billion; $2.1 billion remained under this share repurchase authorization. By its terms, the 2015 Repurchase Program is set 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, in the periods presented, has not made any purchases of common stock other than in connection with these publicly announced repurchase programs.

The table below summarizes the company's share repurchases to date under the authorizations described above:

Repurchase Program Authorization Date	Amount Authorized (in millions)	Total Shares Retired (in millions)	Average Price Per Share[1]	Date Completed	Shares Repurchased (in millions) Nine Months Ended September 30	
					2018	2017
September 16, 2015	$ 4,000	8.1	$ 230.14		0.7	1.6

[1] Includes commissions paid.

Dividends on Common Stock

In May 2018, the company increased the quarterly common stock dividend 9 percent to $1.20 per share from the previous amount of $1.10 per share.

In January 2018, the company increased the quarterly common stock dividend 10 percent to $1.10 per share from the previous amount of $1.00 per share.

In May 2017, the company increased the quarterly common stock dividend 11 percent to $1.00 per share from the previous amount of $0.90 per share.

4. INCOME TAXES

	Three Months Ended September 30		Nine Months Ended September 30	
$ in millions	2018	2017	2018	2017
Federal and foreign income tax expense	$ 93	$ 139	$ 385	$ 534
Effective income tax rate	7.5 %	17.8 %	13.0 %	22.4 %

Current Quarter

The company's effective tax rate for the three months ended September 30, 2018 was lower as compared with the same period in 2017 principally due to the reduction of the U.S. corporate income tax rate from 35 percent to 21 percent as a result of the 2017 Tax Act. Both periods reflect comparable tax benefits associated with current year research credits. In addition, the company's effective rate for the three months ended September 30, 2018 includes a $70 million benefit recognized for additional research credits and manufacturing deductions related to prior years and a $35 million benefit for pension contributions recognized in connection with the filing of our 2017 tax return. These benefits were partially offset by a $20 million income tax expense associated with tax reform guidance on executive compensation. The company's effective tax rate for the three months ended September 30, 2017 included a $62 million benefit recognized for additional manufacturing deductions and research credits related to prior years and $27 million of tax benefits associated with manufacturing deductions.

Year to Date

The company's effective tax rate for the nine months ended September 30, 2018 was lower as compared with the same period in 2017 principally due to the reduction of the U.S. corporate income tax rate and current quarter items described above. In addition, the company's effective tax rate for the nine months ended September 30, 2018 includes $26 million of excess tax benefits related to employee share-based compensation. The company's effective tax rate for the nine months ended September 30, 2017 included $57 million of tax benefits associated with manufacturing deductions, $47 million of excess tax benefits related to employee share-based compensation and a $42 million benefit recognized in connection with the Congressional Joint Committee on Taxation's approval of the Internal Revenue Service (IRS) examination of the company's 2012-2013 tax returns.

The company recognized the income tax effects of the 2017 Tax Act in the financial statements included in its 2017 Annual Report on Form 10-K in accordance with Staff Accounting Bulletin No. 118, which provides SEC staff guidance for the application of ASC Topic 740, Income Taxes, in the reporting period in which the 2017 Tax Act was signed into law. During the three months ended September 30, 2018, the company finalized its accounting for the income tax effects of the 2017 Tax Act and recognized the following measurement period adjustments to the provisional amounts recorded in its 2017 Annual Report on Form 10-K in connection with the 2017 Tax Act:

Transition Tax on Foreign Earnings

The company recognized a measurement period increase to income tax expense of $5 million related to the one-time transition tax on certain foreign earnings. This resulted in a corresponding decrease in deferred tax assets due to the utilization of foreign tax credit carryforwards.

Acceleration of Depreciation

The company recognized a measurement period increase to income taxes payable of $17 million and a corresponding increase in deferred tax assets attributable to the accelerated depreciation for certain assets placed into service after September 27, 2017.

In connection with the Merger, the company has initially recognized an increase in unrecognized tax benefits of approximately $150 million for matters associated with legacy Orbital ATK, principally related to federal and state research credits. In addition, during the three and nine months ended September 30, 2018, we increased our unrecognized tax benefits related to our methods of accounting associated with the 2017 Tax Act by approximately $25 million and $75 million, respectively, and it is reasonably possible that within the next twelve months those unrecognized tax benefits may change by up to $100 million.

We file income tax returns in the U.S. federal jurisdiction and in various state and foreign jurisdictions. The Northrop Grumman 2014-2015 federal tax returns and refund claims related to its 2007-2011 federal tax returns are currently under IRS examination. In addition, legacy Orbital ATK federal tax returns for the year ended March 31, 2015 and nine-month transition period ended December 31, 2015 are currently under IRS examination. The company believes it is reasonably possible that within the next twelve months we may resolve certain matters related to the examination of the legacy Orbital ATK federal tax returns for these periods, which may result in reductions of our unrecognized tax benefits up to $35 million and income tax expense up to $30 million.

5. GOODWILL AND OTHER PURCHASED INTANGIBLE ASSETS

Goodwill

As discussed in Note 2, Innovation Systems was established as a new, fourth business sector of the company. The Merger resulted in the recognition of $6.2 billion of goodwill, a majority of which was allocated to the Innovation Systems sector. A portion of this goodwill was allocated to the company's other sectors based on expected revenue synergies generated by the integration of their products and technologies with those of Innovation Systems. The amount of goodwill recognized and allocated to the sectors is subject to change, pending the final determination of the fair value of assets acquired and liabilities assumed in connection with the Merger (see Note 2).

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Changes in the carrying amounts of goodwill were as follows:

$ in millions	Aerospace Systems	Innovation Systems	Mission Systems	Technology Services	Total
Balance as of December 31, 2017	$ 3,742	$ —	$ 6,696	$ 2,017	$ 12,455
Acquisition of Orbital ATK	418	5,225	469	79	6,191
Other[1]	—	—	(1)	(3)	(4)
Balance as of September 30, 2018	$ 4,160	$ 5,225	$ 7,164	$ 2,093	$ 18,642

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

Accumulated goodwill impairment losses at September 30, 2018 and December 31, 2017, totaled $570 million at the Aerospace Systems segment.

Other Purchased Intangible Assets

Net customer-related and other intangible assets, including the fair value of purchased intangible assets acquired in the Merger, are as follows:

$ in millions	September 30, 2018	December 31, 2017
Gross customer-related and other intangible assets	$ 3,358	$ 1,833
Less accumulated amortization	(1,898)	(1,781)
Net customer-related and other intangible assets	$ 1,460	$ 52

Amortization expense for the three and nine months ended September 30, 2018 was $89 million and $117 million, respectively, and was $3 million and $10 million for the three and nine months ended September 30, 2017, respectively. The company's customer-related intangible assets are generally amortized over their respective useful lives based on the pattern in which the future economic benefits of the intangible assets are expected to be consumed. Other purchased intangible assets are generally amortized on a straight-line basis over their estimated useful lives. The company's purchased intangible assets are being amortized over an aggregate weighted-average period of 12 years. As of September 30, 2018, the expected future amortization of purchased intangibles for each of the next five years is as follows:

$ in millions	
2018 (remainder of year)	$ 90
2019	331
2020	262
2021	204
2022	197

6. FAIR VALUE OF FINANCIAL INSTRUMENTS

The company holds a portfolio of marketable securities consisting of securities to partially fund non-qualified employee benefit plans. A portion of these securities are held in common/collective trust funds and are measured at fair value using net asset value (NAV) per share as a practical expedient; and therefore are not required to be categorized in the fair value hierarchy table below. Marketable securities are included in Other non-current assets in the unaudited condensed consolidated statements of financial position.

The company's derivative portfolio consists primarily of commodity forward contracts and foreign currency forward contracts. As a result of the Merger, the company assumed commodity forward contracts, which Innovation Systems periodically uses to hedge forecasted purchases of certain commodities. The contracts generally establish a fixed price for the underlying commodity and are designated and qualify as effective cash flow hedges of such commodity purchases. Commodity derivatives are valued based on prices of future exchanges and recently reported transactions in the marketplace. For foreign currency forward contracts, 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.

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The following table presents the financial assets and liabilities the company records at fair value on a recurring basis identified by the level of inputs used to determine fair value:

$ in millions	September 30, 2018 Level 1	Level 2	Total	December 31, 2017 Level 1	Level 2	Total
Financial Assets (Liabilities)						
Marketable securities	$360	$ —	$360	$352	$ 1	$353
Marketable securities valued using NAV	—	—	15	—	—	—
Total marketable securities	360	—	375	352	1	353
Derivatives	—	(7)	(7)	—	—	—

At September 30, 2018, the company had commodity forward contracts outstanding that hedge forecasted commodity purchases of 13 million pounds of copper and 4 million pounds of zinc. Gains or losses on the commodity forward contracts are recognized in cost of sales as the performance obligations on related contracts are satisfied.

The notional value of the company’s foreign currency forward contracts at September 30, 2018 and December 31, 2017 was $117 million and $89 million, respectively. The portion of notional value designated as a cash flow hedge at September 30, 2018 and December 31, 2017 was $2 million and $8 million, respectively.

The derivative fair values and related unrealized gains/losses at September 30, 2018 and December 31, 2017 were not material.

There were no transfers of financial instruments between the three levels of the fair value hierarchy during the nine months ended September 30, 2018.

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

Long-term Debt

The estimated fair value of long-term debt was $14.3 billion and $16.0 billion as of September 30, 2018 and December 31, 2017, respectively. We calculated the fair value of long-term debt using Level 2 inputs, based on interest rates available for debt with terms and maturities similar to the company’s existing debt arrangements. The carrying value of long-term debt was $14.4 billion and $15.3 billion as of September 30, 2018 and December 31, 2017, respectively. The current portion of long-term debt is recorded in Other current liabilities in the unaudited condensed consolidated statements of financial position.

In connection with the Merger, the company assumed $1.7 billion of long-term debt, all of which was repaid as of September 30, 2018.

7. 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

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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. On February 16, 2018, both the company and the United States filed motions to dismiss many of the claims and counterclaims in whole or in part. The United States also filed a motion seeking to amend its answer and counterclaim, including to reduce its counterclaim to approximately $193 million, which the court granted on June 11, 2018. Although the ultimate outcome of these matters ("the FSS matters," collectively), including any possible loss, cannot be predicted or reasonably 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 $27 million as of September 30, 2018), 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 $22 million as of September 30, 2018) in damages. In October 2013, ECT asserted an additional damage claim of R$22 million (the equivalent of approximately $5 million as of September 30, 2018). 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 $36 million as of September 30, 2018), 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 previously identified and disclosed to the U.S. government various issues relating primarily to time-charging practices of some employees working on a particular program with remote deployments. The Department of Justice is continuing to investigate this matter and the company is cooperating. Depending upon the ultimate outcome of this matter, the company could be subject to damages, civil and criminal fines, other costs or payments, reputational harm, penalties or other sanctions, and suspension or debarment actions. Although the U.S. government and the company are in discussions, they have not reached resolution and the ultimate outcome of this matter has not been determined at this time.

We are engaged in remediation activities relating to environmental conditions allegedly resulting from historic operations at the former United States Navy and Grumman facilities in Bethpage, New York. For over 20 years, we have worked closely with the United States Navy, the United States Environmental Protection Agency, the New York State Department of Environmental Conservation, the New York State Department of Health and other federal, state and local governmental authorities, to address legacy environmental conditions in Bethpage. We have incurred, and expect to continue to incur, as included in Note 8, substantial remediation costs related to these environmental conditions. The remediation standards or requirements to which we are subject may change and costs may increase materially. The State of New York has notified us that it intends to seek to impose additional remedial requirements and, among other things, is evaluating natural resource damages. In addition, we are and may become a party to various legal proceedings and disputes related to remediation and/or alleged environmental impacts in Bethpage, including with federal and state entities, local municipalities and water districts, insurance carriers and class action plaintiffs. These Bethpage matters could result in additional costs, fines, penalties, sanctions, compensatory or other damages (including natural resource damages), determinations on allocation, allowability and coverage, and non-monetary relief. We cannot at this time predict or reasonably estimate the potential cumulative outcomes or ranges of possible liability of these aggregate Bethpage matters.

On August 12, 2016, a putative class action complaint, naming Orbital ATK and two of its then-officers as defendants, Steven Knurr, et al. v. Orbital ATK, Inc., No. 16-cv-01031 (TSE-MSN), was filed in the United States

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District Court for the Eastern District of Virginia. The complaint asserts claims on behalf of purchasers of Orbital ATK securities for violations of Sections 10(b) and 20(a) of the Exchange Act and Rule 10b-5, allegedly arising out of false and misleading statements and the failure to disclose that: (i) Orbital ATK lacked effective control over financial reporting; and (ii) as a result, it failed to record an anticipated loss on a long-term contract with the U.S. Army to manufacture and supply small caliber ammunition at the U.S. Army's Lake City Army Ammunition Plant. On April 24, 2017 and October 10, 2017, the plaintiffs filed amended complaints naming additional defendants and asserting claims for alleged violations of additional sections of the Exchange Act and alleged false and misleading statements in Orbital ATK's Form S-4 filed in connection with the Orbital-ATK Merger. The complaint seeks damages, reasonable costs and expenses at trial, including counsel and expert fees, and such other relief as deemed appropriate by the Court. On August 8, 2018, plaintiffs sought leave to file an additional amended complaint; defendants filed an opposition. On August 29, 2018, the court stayed and administratively closed the case except for fact discovery, which is complete. The court subsequently extended the stay and closure until November 9, 2018. A mediation session is currently scheduled for November 6, 2018. The company intends vigorously to defend itself in connection with this matter, and we currently expect related contingencies will continue to be included in the company's measurement period adjustments of the fair value of assets acquired and liabilities assumed in the Merger (see Note 2).

The SEC is investigating Orbital ATK's historical accounting practices relating to the restatement of Orbital's unaudited condensed consolidated financial statements for the quarterly periods ended July 5, 2015 and October 4, 2015 described in the Transition Report on Form 10-K for the nine-month period ending December 31, 2015 previously filed on March 15, 2016. The SEC is also investigating matters relating to a voluntary disclosure Orbital ATK made concerning the restatement described in Orbital ATK's Form 10-K/A for the nine-month period ending December 31, 2015 filed on February 24, 2017. The ultimate outcome of these matters, including any possible loss, cannot be predicted or reasonably estimated at this time and the company intends to continue to cooperate with the SEC.

The company is a party to various other investigations, lawsuits, claims, enforcement actions 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, the company does not believe that the outcome of any of these other matters pending against the company is likely to have a material adverse effect on the company's unaudited condensed consolidated financial position as of September 30, 2018, or its annual results of operations and/or cash flows.

8. COMMITMENTS AND CONTINGENCIES

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 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 such potential disallowed costs. 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 reasonably estimable, and that the outcome of any such matters would not have a material adverse effect on its unaudited condensed consolidated financial position as of September 30, 2018, or its annual results of operations and/or cash flows.

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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 September 30, 2018 and December 31, 2017:

$ in millions	Range of Reasonably Possible Future Costs[1]	Accrued Costs[2]	Deferred Costs[3]
September 30, 2018	$455 - $835	$ 469	$ 348
December 31, 2017	405 - 792	410	207

(1) Estimated remediation costs are not discounted to present value. 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 September 30, 2018, $163 million is recorded in Other current liabilities and $306 million is recorded in Other non-current liabilities.

(3) As of September 30, 2018, $124 million is deferred in Prepaid expenses and other current assets and $224 million is deferred in Other non-current assets. These amounts reflect a $103 million increase during the third quarter of 2018 in our estimated recovery of certain environmental remediation costs and are evaluated for recoverability on a routine basis.

As a result of the Merger, we assumed certain environmental remediation liabilities that are included in the accrued costs above, along with the related deferred costs expected to be recoverable on U.S. government contracts.

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, except with respect to Bethpage, we do not anticipate that future remediation expenditures associated with our currently identified projects will have a material adverse effect on the company's unaudited condensed consolidated financial position as of September 30, 2018, or its annual results of operations and/or cash flows. With respect to Bethpage, as described in Note 7, we cannot at this time estimate the range of reasonably possible additional future costs that could result from potential changes to remediation standards or requirements to which we are subject.

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 September 30, 2018, there were $398 million of stand-by letters of credit and guarantees and $212 million of surety bonds outstanding.

Indemnifications

The company has provided indemnification for 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 unaudited condensed consolidated financial position as of September 30, 2018, or its annual results of operations and/or cash flows.

Operating Leases

Rental expense for operating leases for the three and nine months ended September 30, 2018 was $97 million and $270 million, respectively, and was $73 million and $227 million for the three and nine months ended September 30, 2017, respectively. These amounts are net of immaterial amounts of sublease rental income.

Commercial Paper

In May 2018, the company commenced a commercial paper program that serves as a source of short-term financing. In September 2018, the company amended its commercial paper program to increase its capacity to issue unsecured commercial paper notes from $750 million up to $2.0 billion. The commercial paper notes outstanding have original maturities of 90 days or less from the date of issuance. At September 30, 2018, there were $499 million of outstanding short-term commercial paper borrowings at a weighted-average interest rate of 2.43 percent. The outstanding balance of commercial paper borrowings is recorded in Other current liabilities in the unaudited condensed consolidated

statements of financial position.
Credit Facilities
In August 2018, the company entered into a new five-year senior unsecured credit facility in an aggregate principal amount of $2.0 billion (the “2018 Credit Agreement”). The 2018 Credit Agreement replaced the company’s prior five-year revolving credit facility in an aggregate amount of $1.6 billion entered into on July 8, 2015. The revolving

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credit facility established under the 2018 Credit Agreement is intended to support the company’s commercial paper program and other general corporate purposes.

The 2018 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 September 30, 2018, there was no balance outstanding under this facility; however, the outstanding balance of commercial paper borrowings reduces the amount available for borrowing under the 2018 Credit Agreement.

In December 2016, a subsidiary of the company entered into a two-year credit facility, with two additional one-year option periods, in an aggregate principal amount of £120 million (the equivalent of approximately $156 million as of September 30, 2018) (the “2016 Credit Agreement”). The company exercised the first option to extend the maturity to December 2019. The 2016 Credit Agreement is guaranteed by the company. At September 30, 2018, there was £90 million (the equivalent of approximately $117 million) outstanding under this facility, which bears interest at a rate of LIBOR plus 1.10 percent. All of the borrowings outstanding under this facility mature less than one year from the date of issuance, but may be renewed under the terms of the facility. Based on our intent and ability to refinance the obligations on a long-term basis, substantially all of the borrowings are classified as non-current.

At September 30, 2018, the company was in compliance with all covenants under its credit agreements.

9. RETIREMENT BENEFITS

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

	Three Months Ended September 30				Nine Months Ended September 30			
	Pension Benefits		Medical and Life Benefits		Pension Benefits		Medical and Life Benefits	
$ in millions	2018	2017	2018	2017	2018	2017	2018	2017
Components of net periodic benefit cost								
Service cost	$ 102	$ 97	$ 5	$ 5	$ 301	$ 291	$ 15	$ 16
Interest cost	316	312	20	21	906	937	58	63
Expected return on plan assets	(571)	(471)	(26)	(22)	(1,644)	(1,414)	(75)	(67)
Amortization of:								
Prior service credit	(15)	(14)	(5)	Apollo International Management GP, LLC				

its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

AAA MIP LIMITED

By: Apollo Alternative Assets, L.P.
its investment manager

By: Apollo International Management, L.P.
its managing general partner

By: Apollo International Management GP, LLC,
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO ALTERNATIVE ASSETS, L.P.

By: Apollo International Management, L.P.
its managing general partner

By: Apollo International Management GP, LLC
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO INTERNATIONAL MANAGEMENT, L.P.

By: Apollo International Management GP, LLC
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO INTERNATIONAL MANAGEMENT GP, LLC

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

AIF VI NCL (AIV), L.P.

By: Apollo Advisors VI (EH), L.P.
its general partner

By: Apollo Advisors VI (EH-GP), Ltd.
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

AIF VI NCL (AIV II), L.P.

By: Apollo Advisors VI (EH), L.P.
its general partner

By: Apollo Advisors VI (EH-GP), Ltd.
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

AIF VI NCL (AIV III), L.P.

By: Apollo Advisors VI (EH), L.P.
its general partner

By: Apollo Advisors VI (EH-GP), Ltd.
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

AIF VI NCL (AIV IV), L.P.

By: Apollo Advisors VI (EH), L.P.
its general partner

By: Apollo Advisors VI (EH-GP), Ltd.
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

AIF VI EURO HOLDINGS, L.P.

By: Apollo Advisors VI (EH), L.P.
its general partner

By: Apollo Advisors VI (EH-GP), Ltd.
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO ADVISORS VI (EH), L.P.

By: Apollo Advisors VI (EH-GP), Ltd.
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO ADVISORS VI (EH-GP), LTD.

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

AIF VII EURO HOLDINGS, L.P.

By: Apollo Advisors VII (EH), L.P.
its general partner

By: Apollo Advisors VII (EH-GP), Ltd.
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO ADVISORS VII (EH), L.P.

By: Apollo Advisors VII (EH-GP), Ltd.
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO ADVISORS VII (EH-GP), LTD.

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO PRINCIPAL HOLDINGS III, L.P.

By: Apollo Principal Holdings III GP, Ltd.
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO PRINCIPAL HOLDINGS III GP, LTD.

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO OVERSEAS PARTNERS VI, L.P.

By: Apollo Advisors VI, L.P.,
its managing general partner

By: Apollo Capital Management VI, LLC,
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO OVERSEAS PARTNERS (DELAWARE) VI, L.P.

By: Apollo Advisors VI, L.P.,
its general partner

By: Apollo Capital Management VI, LLC,
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO OVERSEAS PARTNERS (DELAWARE 892) VI, L.P.

By: Apollo Advisors VI, L.P.,
its general partner

By: Apollo Capital Management VI, LLC,
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO OVERSEAS PARTNERS (GERMANY) VI, L.P.

By: Apollo Advisors VI, L.P.,
its managing general partner

By: Apollo Capital Management VI, LLC,
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO ADVISORS VI, L.P.

By: Apollo Capital Management VI, LLC,
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO CAPITAL MANAGEMENT VI, LLC

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO PRINCIPAL HOLDINGS I, L.P.

By: Apollo Principal Holdings I GP, LLC,
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO PRINCIPAL HOLDINGS I GP, LLC

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO MANAGEMENT VI, L.P.

By: AIF VI Management, LLC
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

AIF VI MANAGEMENT, LLC

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO MANAGEMENT VII, L.P.

By: AIF VII Management, LLC
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

AIF VII MANAGEMENT, LLC

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO MANAGEMENT, L.P.

By: Apollo Management GP, LLC
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO MANAGEMENT GP, LLC

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO MANAGEMENT HOLDINGS, L.P.

By: Apollo Management Holdings GP, LLC
its general partner

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President

APOLLO MANAGEMENT HOLDINGS GP, LLC

By: /s/ Laurie D. Medley
Laurie D. Medley
Vice President