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

FORM 10-Q

☒ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the Quarterly Period Ended September 30, 2020

or

☐ 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)

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

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

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes ☒ No ☐

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

Large Accelerated Filer ☒ Accelerated Filer ☐

Non-accelerated Filer ☐ Smaller Reporting Company ☐

Emerging Growth Company ☐

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes ☐ No ☒

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, 2020, 166,715,982 shares of common stock were outstanding.

NORTHROP GRUMMAN CORPORATION

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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	**2020**	2019	**2020**	2019
Sales				
Product	**$ 6,667**	$ 5,997	**$ 19,325**	$ 17,605
Service	**2,416**	2,478	**7,262**	7,515
Total sales	**9,083**	8,475	**26,587**	25,120
Operating costs and expenses				
Product	**5,346**	4,777	**15,425**	13,955
Service	**1,897**	1,971	**5,774**	6,012
General and administrative expenses	**855**	776	**2,475**	2,320
Operating income	**985**	951	**2,913**	2,833
Other (expense) income				
Interest expense	**(154)**	(123)	**(433)**	(398)
FAS (non-service) pension benefit	**302**	200	**907**	600
Other, net	**34**	27	**36**	82
Earnings before income taxes	**1,167**	1,055	**3,423**	3,117
Federal and foreign income tax expense	**181**	122	**564**	460
Net earnings	**$ 986**	$ 933	**$ 2,859**	$ 2,657
Basic earnings per share	**$ 5.91**	$ 5.52	**$ 17.11**	$ 15.67
Weighted-average common shares outstanding, in millions	**166.8**	169.1	**167.1**	169.6
Diluted earnings per share	**$ 5.89**	$ 5.49	**$ 17.05**	$ 15.60
Weighted-average diluted shares outstanding, in millions	**167.3**	169.9	**167.7**	170.3
Net earnings (from above)	**$ 986**	$ 933	**$ 2,859**	$ 2,657
Other comprehensive loss				
Change in unamortized prior service credit, net of tax	**(10)**	(12)	**(31)**	(35)
Change in cumulative translation adjustment and other, net	**6**	—	**7**	—
Other comprehensive loss, net of tax	**(4)**	(12)	**(24)**	(35)
Comprehensive income	**$ 982**	$ 921	**$ 2,835**	$ 2,622

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

NORTHROP GRUMMAN CORPORATION

CONDENSED CONSOLIDATED STATEMENTS OF FINANCIAL POSITION
(Unaudited)

$ in millions, except par value	**September 30, 2020**	December 31, 2019
Assets		
Cash and cash equivalents	**$ 4,995**	$ 2,245
Accounts receivable, net	**1,958**	1,326
Unbilled receivables, net	**5,723**	5,334
Inventoried costs, net	**853**	783
Prepaid expenses and other current assets	**1,023**	997
Total current assets	**14,552**	10,685
Property, plant and equipment, net of accumulated depreciation of $6,259 for 2020 and $5,850 for 2019	**7,187**	6,912
Operating lease right-of-use assets	**1,479**	1,511
Goodwill	**18,711**	18,708
Intangible assets, net	**844**	1,040
Deferred tax assets	**188**	508
Other non-current assets	**1,811**	1,725
Total assets	**$ 44,772**	$ 41,089
Liabilities		
Trade accounts payable	**$ 2,197**	$ 2,226
Accrued employee compensation	**1,847**	1,865
Advance payments and billings in excess of costs incurred	**2,235**	2,237
Other current liabilities	**3,830**	3,106
Total current liabilities	**10,109**	9,434
Long-term debt, net of current portion of $1,806 for 2020 and $1,109 for 2019	**14,260**	12,770
Pension and other postretirement benefit plan liabilities	**6,389**	6,979
Operating lease liabilities	**1,292**	1,308
Deferred tax liabilities	**39**	—
Other non-current liabilities	**2,216**	1,779
Total liabilities	**34,305**	32,270
Commitments and contingencies (Note 6)		
Shareholders’ equity		
Preferred stock, $1 par value; 10,000,000 shares authorized; no shares issued and outstanding	**—**	—
Common stock, $1 par value; 800,000,000 shares authorized; issued and outstanding: 2020—166,715,510 and 2019—167,848,424	**167**	168
Paid-in capital	**27**	—
Retained earnings	**10,394**	8,748
Accumulated other comprehensive loss	**(121)**	(97)
Total shareholders’ equity	**10,467**	8,819
Total liabilities and shareholders’ equity	**$ 44,772**	$ 41,089

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

NORTHROP GRUMMAN CORPORATION

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

	Nine Months Ended September 30	
$ in millions	**2020**	2019
Operating activities		
Net earnings	**$ 2,859**	$ 2,657
Adjustments to reconcile to net cash provided by operating activities:		
Depreciation and amortization	**922**	924
Stock-based compensation	**61**	93
Deferred income taxes	**369**	24
Changes in assets and liabilities:		
Accounts receivable, net	**(632)**	(663)
Unbilled receivables, net	**(386)**	(778)
Inventoried costs, net	**(70)**	(156)
Prepaid expenses and other assets	**(122)**	(81)
Accounts payable and other liabilities	**283**	320
Income taxes payable, net	**111**	(34)
Retiree benefits	**(704)**	(422)
Other, net	**12**	(51)
Net cash provided by operating activities	**2,703**	1,833
Investing activities		
Capital expenditures	**(828)**	(793)
Other, net	**—**	8
Net cash used in investing activities	**(828)**	(785)
Financing activities		
Net proceeds from issuance of long-term debt	**2,239**	—
Payments of long-term debt	**(27)**	(500)
Payments to credit facilities	**(13)**	(31)
Net borrowings on commercial paper	**—**	201
Common stock repurchases	**(490)**	(444)
Cash dividends paid	**(711)**	(658)
Payments of employee taxes withheld from share-based awards	**(66)**	(63)
Other, net	**(57)**	(5)
Net cash provided by (used in) financing activities	**875**	(1,500)
Increase (decrease) in cash and cash equivalents	**2,750**	(452)
Cash and cash equivalents, beginning of year	**2,245**	1,579
Cash and cash equivalents, end of period	**$ 4,995**	$ 1,127

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

NORTHROP GRUMMAN CORPORATION

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

	Three Months Ended September 30		Nine Months Ended September 30	
$ in millions, except per share amounts	**2020**	2019	**2020**	2019
Common stock				
Beginning of period	**$ 167**	$ 169	**$ 168**	$ 171
Common stock repurchased	**—**	—	**(1)**	(2)
End of period	**167**	169	**167**	169
Paid-in capital				
Beginning of period	**10**	—	**—**	—
Stock compensation	**23**	—	**33**	—
Other	**(6)**	—	**(6)**	—
End of period	**27**	—	**27**	—
Retained earnings				
Beginning of period	**9,652**	9,120	**8,748**	8,068
Common stock repurchased	**—**	(215)	**(479)**	(449)
Net earnings	**986**	933	**2,859**	2,657
Dividends declared	**(244)**	(226)	**(709)**	(658)
Stock compensation	**—**	37	**(36)**	31
Other	**—**	—	**11**	—
End of period	**10,394**	9,649	**10,394**	9,649
Accumulated other comprehensive loss				
Beginning of period	**(117)**	(75)	**(97)**	(52)
Other comprehensive loss, net of tax	**(4)**	(12)	**(24)**	(35)
End of period	**(121)**	(87)	**(121)**	(87)
Total shareholders' equity	**$ 10,467**	$ 9,731	**$ 10,467**	$ 9,731
Cash dividends declared per share	**$ 1.45**	$ 1.32	**$ 4.22**	$ 3.84

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

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"). 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.

These 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.

Effective January 1, 2020, the company reorganized its operating sectors to better align the company's broad portfolio to serve its customers' needs. The four new sectors, which also comprise our reportable segments, are Aeronautics Systems, Defense Systems, Mission Systems and Space Systems.

Beginning in the second quarter of 2020, the company no longer considers certain unallowable costs and environmental matters that are principally managed at the corporate office as part of management's evaluation of segment operating performance. As a result, certain unallowable compensation and other costs, which were previously included in segment operating results, are now reported in Unallocated corporate expense within operating income. In addition, certain accrued and deferred costs, as well as unallowable costs, if any, associated with certain environmental matters that were previously reflected in segment assets and operating results are now reflected in corporate assets and Unallocated corporate expense within operating income. The impact of these changes are reflected in the amounts in this Form 10-Q. See Part II, Item 5 in the Quarterly Report on Form 10-Q for the quarter ended June 30, 2020 and Note 9 for further information regarding the impact of these changes on the company's prior period segment operating income.

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 2019 Annual Report on Form 10-K, the Form 8-K that we filed with the SEC on April 29, 2020, which recasts the disclosures in certain portions of the 2019 Annual Report on Form 10-K to reflect changes in the company's reportable segments, and the Quarterly Reports on Form 10-Q for the quarters ended March 31, 2020 and June 30, 2020.

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 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 these quarter-end dates 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.

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 development or production of goods, the provision of services, or a combination of both. We recognize revenue as control is transferred to the customer, either over time or at a point in time. For most of our contracts, control is effectively transferred during the period of performance, so we generally recognize revenue over time using the cost-to-cost method (cost incurred relative to total cost estimated at completion). The company believes this represents the most appropriate measurement towards satisfaction of our 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 sales 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) expense, is charged against income in the period the loss is identified.

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	**2020**	2019	**2020**	2019
Revenue	**$ 124**	$ 142	**$ 385**	$ 462
Operating income	**123**	125	**359**	421
Net earnings[(1)]	**97**	99	**284**	333
Diluted earnings per share[(1)]	**0.58**	0.58	**1.69**	1.96

[(1)] Based on a 21 percent statutory tax rate.

EAC adjustments on a single performance obligation can 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 such adjustments were material to the financial statements during the three months ended September 30, 2020 and 2019.

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, 2020 was $81.3 billion. We expect to recognize approximately 35 percent and 55 percent of our September 30, 2020 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. Contract assets are equivalent to and reflected as Unbilled receivables in the unaudited condensed consolidated statements of financial position and are primarily related to long-term contracts where revenue recognized under the cost-to-cost method exceeds amounts billed to customers. Contract liabilities are equivalent to and reflected as Advance payments and billings in excess of costs incurred in the unaudited condensed consolidated statements of financial position. The amount of revenue recognized for the three and nine months ended September 30, 2020 that was included in the December 31, 2019 contract liability balance was $232 million and $1.5 billion, respectively. The amount of revenue recognized for the three and nine months ended September 30, 2019 that was included in the December 31, 2018 contract liability balance was $209 million and $1.2 billion, respectively.

Disaggregation of Revenue
See Note 9 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.

Accumulated Other Comprehensive Loss
The components of accumulated other comprehensive loss are as follows:

$ in millions		**September 30, 2020**		December 31, 2019
Unamortized prior service credit, net of tax expense of $6 for 2020 and $17 for 2019	**$**	**20**	$	51
Cumulative translation adjustment and other, net		**(141)**		(148)
Total accumulated other comprehensive loss	**$**	**(121)**	$	(97)

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

Accounting Standards Updates
Accounting standards updates adopted and/or issued, but not effective until after September 30, 2020, 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. 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 include the dilutive effect of awards granted to employees under stock-based compensation plans. The dilutive effect of these securities totaled 0.5 million shares and 0.6 million shares for the three and nine months ended September 30, 2020, respectively. The dilutive effect of these securities totaled 0.8 million shares and 0.7 million shares for the three and nine months ended September 30, 2019, respectively.

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 and were completed in March 2020.

On December 4, 2018, the company's board of directors authorized a new share repurchase program of up to an additional $3.0 billion in share repurchases of the company's common stock (the "2018 Repurchase Program"). Repurchases under the 2018 Repurchase Program commenced in March 2020 upon the completion of the company's 2015 Repurchase Program. We had no repurchases of common stock during the three months ended September 30, 2020. As of September 30, 2020, repurchases under the 2018 Repurchase Program totaled $0.2 billion; $2.8 billion remained under this share repurchase authorization. By its terms, the 2018 Repurchase Program is set to expire when all authorized funds for repurchases have been used.

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 2020	2019
September 16, 2015	$ 4,000	15.4	$ 260.33	March 2020	**0.9**	2.3
December 4, 2018	$ 3,000	0.5	326.20		**0.5**	—

[1] Includes commissions paid.

Dividends on Common Stock

In May 2020, the company increased the quarterly common stock dividend 10 percent to $1.45 per share from the previous amount of $1.32 per share.

In May 2019, the company increased the quarterly common stock dividend 10 percent to $1.32 per share from the previous amount of $1.20 per share.

3. INCOME TAXES

	Three Months Ended September 30		Nine Months Ended September 30	
$ in millions	**2020**	2019	**2020**	2019
Federal and foreign income tax expense	**$ 181**	$ 122	**$ 564**	$ 460
Effective income tax rate	**15.5%**	11.6%	**16.5%**	14.8%

Current Quarter

The third quarter 2020 effective tax rate (ETR) increased to 15.5 percent from 11.6 percent in the prior year period primarily due to lower research credits, partially offset by benefits relating to foreign-derived intangible income (FDII) after final regulations issued in July clarified Foreign Military Sales qualify for the deduction. The company's third quarter 2020 ETR includes benefits of $45 million for research credits and $30 million for FDII. The company's third quarter 2019 ETR includes benefits of $89 million for research credits and $17 million for FDII.

Year to Date

The year to date 2020 ETR increased to 16.5 percent from 14.8 percent in the prior year period due to the same current quarter items discussed above. The company's year to date 2020 ETR includes benefits of $135 million for research credits and $46 million for FDII. The company's year to date 2019 ETR includes benefits of $171 million for research credits and $26 million for FDII.

In March 2020, the CARES Act was enacted. The CARES Act includes certain changes to U.S. tax law that impact the company, including a technical correction to the 2017 Tax Cuts and Jobs Act, which makes certain qualified improvement property eligible for bonus depreciation. The CARES Act did not have a significant impact on the company's third quarter and year to date 2020 effective tax rate.

During the three and nine months ended September 30, 2020, we increased our unrecognized tax benefits by approximately $219 million and $294 million, respectively, primarily related to state apportionment, our methods of accounting associated with the timing of revenue recognition and related costs, and the 2017 Tax Act. It is reasonably possible that within the next 12 months our unrecognized tax benefits related to these matters may decrease by up to $50 million. Since enactment of the 2017 Tax Act, the Internal Revenue Service (IRS) and U.S. Treasury Department have issued and are expected to further issue interpretive guidance that impacts taxpayers. We will continue to evaluate such guidance as it is issued.

We file income tax returns in the U.S. federal jurisdiction and in various state and foreign jurisdictions. The Northrop Grumman 2014-2017 federal tax returns and refund claims related to its 2007-2016 federal tax returns are currently under IRS examination. In addition, legacy Orbital ATK federal tax returns for the year ended March 31, 2015, the nine-month transition period ended December 31, 2015 and calendar years 2016-2017 are currently under appeal with the IRS.

4. FAIR VALUE OF FINANCIAL INSTRUMENTS

The company holds a portfolio of marketable 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 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.

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:

	September 30, 2020			December 31, 2019		
$ in millions	**Level 1**	**Level 2**	**Total**	Level 1	Level 2	Total
Financial Assets (Liabilities)						
Marketable securities	**$ 345**	**$ 1**	**$ 346**	$ 364	$ 1	$ 365
Marketable securities valued using NAV			**17**			17
Total marketable securities	**345**	**1**	**363**	364	1	382
Derivatives	**—**	**(1)**	**(1)**	—	(3)	(3)

The notional value of the company's foreign currency forward contracts at September 30, 2020 and December 31, 2019 was $66 million and $98 million, respectively. At September 30, 2020, no portion of the notional value was designated as a cash flow hedge. The portion of the notional value designated as a cash flow hedge at December 31, 2019 was $7 million.

The derivative fair values and related unrealized gains/losses at September 30, 2020 and December 31, 2019 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, 2020.

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 $19.1 billion and $15.1 billion as of September 30, 2020 and December 31, 2019, 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 $16.1 billion and $13.9 billion as of September 30, 2020 and December 31, 2019, respectively. The current portion of long-term debt is recorded in Other current liabilities in the unaudited condensed consolidated statements of financial position. On October 15, 2020, the company repaid $1.0 billion of unsecured senior notes upon maturity.

Unsecured Senior Notes

In March 2020, the company issued $2.25 billion of unsecured senior notes for general corporate purposes, including debt repayment and working capital, as follows:

- $750 million of 4.40% senior notes due 2030 (the "2030 Notes"),
- $500 million of 5.15% senior notes due 2040 (the "2040 Notes") and
- $1.0 billion of 5.25% senior notes due 2050 (the "2050 Notes").

We refer to the 2030 Notes, the 2040 Notes and the 2050 Notes, together, as the "notes." Interest on the notes is payable semi-annually in arrears. The notes are generally 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 100% of the principal amount of the notes to be redeemed or an applicable "make-whole" amount, plus accrued and unpaid interest.

5. INVESTIGATIONS, CLAIMS AND 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 February 16, 2018, both the company and the United States filed motions to dismiss many of the claims and counterclaims referenced above, 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. On October 17, 2018, the court granted in part and denied in part the parties' motions to dismiss. On February 3, 2020, the parties commenced what was expected to be a seven-week trial. The first four weeks of trial concluded, but the court postponed the remaining estimated three weeks as a result of COVID-19-related concerns. Trial is currently scheduled to resume in November 2020. 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, ECT alleges the consortium breached its contract with ECT and seeks damages of approximately R$111 million (the equivalent of approximately $20 million as of September 30, 2020), 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 $16 million as of September 30, 2020) in damages. In October 2013, ECT asserted an additional damage claim of R$22 million (the equivalent of approximately $4 million as of September 30, 2020). 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, 2020), 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. In a decision dated November 13, 2018, the trial court ruled in ECT's favor on one of its claims against Solystic, and awarded damages of R$41 million (the equivalent of approximately $7 million as of September 30, 2020) against Solystic and its consortium partners, with that amount to be adjusted for inflation and interest from November 2004 through any appeal, in accordance with the Manual of Calculations of the Federal Justice, as well as attorneys' fees. On March 22, 2019, ECT appealed the trial court's decision to the intermediate court of appeals. Solystic filed its appeal on April 11, 2019. On August 10, 2020, the court approved a settlement between the parties and dismissed the lawsuit.

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 6, substantial remediation costs related to these environmental conditions. The remediation standards or requirements to which we are subject are being reconsidered and are changing and costs may increase materially. As discussed in Note 6, the State of New York issued a Feasibility Study and an Amended Record of Decision, seeking to impose additional remedial requirements. The company is engaged in discussions with the State of New York and certain other potentially responsible parties. The State of New York has said that, among other things, it is also evaluating potential natural resource damages. In addition, we are a party to various, and expect to become a party to additional, legal proceedings and disputes related to remediation, costs, allowability and/or alleged environmental impacts in Bethpage, including with federal and state entities (including the Navy, Defense Contract Management Agency, the state, local municipalities and water districts) and insurance carriers, as well as class action and individual plaintiffs alleging personal injury and property damage and seeking both monetary and non-monetary relief. 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.

The company is a party to various other investigations, lawsuits, arbitration, 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, 2020, or its annual results of operations and/or cash flows.

6. COMMITMENTS AND CONTINGENCIES

U.S. Government Cost Claims and Contingencies

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, 2020, or its annual results of operations and/or cash flows.

The U.S. government has raised questions about an interest rate assumption used by the company to determine our CAS pension expense in previous years and in our current forward pricing rate proposal. On June 1, 2020, the government provided written notice that the assumptions the company used during the period 2013-2019 were potentially noncompliant with CAS. We are engaging with the government to address their questions. We submitted a formal response on July 31, 2020, which we believe demonstrates the appropriateness of the assumptions used. However, the sensitivity to changes in interest rate assumptions makes it reasonably possible the outcome of this matter could have a material adverse effect on our financial position, results of operations and/or cash flows, although we are not currently able to estimate a range of any potential loss.

Environmental Matters

The table below summarizes the amount accrued for environmental remediation costs, management's estimate of the amount of reasonably possible future costs in excess of accrued costs and the deferred costs expected to be recoverable through overhead charges on U.S. government contracts as of September 30, 2020 and December 31, 2019:

$ in millions	Accrued Costs[1][2]	Reasonably Possible Future Costs in Excess of Accrued Costs[2]	Deferred Costs[3]
September 30, 2020	**$ 563**	**$ 439**	**$ 474**
December 31, 2019	531	448	436

[1] As of September 30, 2020, $165 million is recorded in Other current liabilities and $398 million is recorded in Other non-current liabilities.

[2] Estimated remediation costs are not discounted to present value. The reasonably possible future costs in excess of accrued costs do not take into consideration amounts expected to be recoverable through overhead charges on U.S. government contracts.

[3] As of September 30, 2020, $135 million is deferred in Prepaid expenses and other current assets and $339 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, 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, 2020, or its annual results of operations and/or cash flows. With respect to Bethpage, the State of New York issued a Feasibility Study and an Amended Record of Decision, proposing to impose additional remedial requirements. The company is engaged in discussions with the State of New York and other potentially responsible parties. As discussed in Note 5, the remediation standards or requirements to which we are subject are being reconsidered and are changing and costs may increase materially.

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, 2020, there were $465 million of stand-by letters of credit and guarantees and $77 million of surety bonds outstanding.

Commercial Paper

The company maintains a commercial paper program that serves as a source of short-term financing with capacity to issue unsecured commercial paper notes up to $2.0 billion. At September 30, 2020, there were no commercial paper borrowings outstanding.

Credit Facilities

The company maintains a five-year senior unsecured credit facility in an aggregate principal amount of $2.0 billion (the "2018 Credit Agreement") that matures in August 2024 and is intended to support the company's commercial paper program and other general corporate purposes. Commercial paper borrowings reduce the amount available for borrowing under the 2018 Credit Agreement. At September 30, 2020, there was no balance outstanding under this facility.

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 $154 million as of September 30, 2020) (the "2016 Credit Agreement"). The company exercised the second option to extend the maturity to December 2020. The 2016 Credit Agreement is guaranteed by the company. At September 30, 2020, there was £50 million (the equivalent of approximately $64 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 are recorded in Other current liabilities in the unaudited condensed consolidated statement of financial position.

At September 30, 2020, the company was in compliance with all covenants under its credit agreements.

7. RETIREMENT BENEFITS

The cost to the company of its pension and other postretirement benefit (OPB) plans is shown in the following table:

	Three Months Ended September 30				Nine Months Ended September 30			
	Pension Benefits		OPB		Pension Benefits		OPB	
$ in millions	**2020**	2019	**2020**	2019	**2020**	2019	**2020**	2019
Components of net periodic benefit cost (benefit)								
Service cost	**$ 102**	$ 92	**$ 4**	$ 4	**$ 306**	$ 276	**$ 13**	$ 12
Interest cost	**307**	340	**17**	20	**920**	1,020	**50**	60
Expected return on plan assets	**(594)**	(525)	**(26)**	(23)	**(1,782)**	(1,576)	**(77)**	(69)
Amortization of prior service credit	**(15)**	(15)	**1**	(1)	**(45)**	(44)	**3**	(2)
Net periodic benefit cost (benefit)	**$ (200)**	$ (108)	**$ (4)**	$ —	**$ (601)**	$ (324)	**$ (11)**	$ 1

Employer Contributions

The company sponsors defined benefit pension and OPB plans, as well as defined contribution plans. We fund our defined benefit pension plans annually in a manner consistent with the Employee Retirement Income Security Act of 1974, as amended by the Pension Protection Act of 2006.

Contributions made by the company to its retirement plans are as follows:

	Three Months Ended September 30		Nine Months Ended September 30	
$ in millions	**2020**	2019	**2020**	2019
Defined benefit pension plans	**$ 24**	$ 18	**$ 70**	$ 64
OPB plans	**7**	10	**30**	34
Defined contribution plans	**116**	98	**472**	377

8. STOCK COMPENSATION PLANS AND OTHER COMPENSATION ARRANGEMENTS

Stock Awards

The following table presents the number of restricted stock rights (RSRs) and restricted performance stock rights (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:

	Nine Months Ended September 30	
in millions	**2020**	2019
RSRs granted	**0.1**	0.1
RPSRs granted	**0.2**	0.2
Grant date aggregate fair value	**$ 91**	$ 92

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 over a three-year period.

Cash Awards
The following table presents the minimum and maximum aggregate payout amounts related to cash units (CUs) and cash performance units (CPUs) granted to employees in the periods presented:

	Nine Months Ended September 30	
$ in millions	**2020**	2019
Minimum aggregate payout amount	**$ 31**	$ 36
Maximum aggregate payout amount	**175**	203

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 over a three-year period.

9. SEGMENT INFORMATION

Effective January 1, 2020, the company reorganized its operating sectors to better align the company's broad portfolio to serve its customers' needs. The four new sectors, which also comprise our reportable segments, are Aeronautics Systems, Defense Systems, Mission Systems and Space Systems.

As discussed in Note 1, beginning in the second quarter of 2020, the company no longer considers certain unallowable costs as part of management's evaluation of segment operating performance. As a result, certain unallowable costs, which were previously included in segment operating results, are now reported in Unallocated corporate expense within operating income. This change has been applied retrospectively in the amounts below. See Part II, Item 5 in the Quarterly Report on Form 10-Q for the quarter ended June 30, 2020 for further information regarding the impact of this change on the company's prior period segment information.

The following table presents sales and operating income by segment:

	Three Months Ended September 30		Nine Months Ended September 30	
$ in millions	**2020**	2019	**2020**	2019
Sales				
Aeronautics Systems	**$ 2,914**	$ 2,770	**$ 8,682**	$ 8,309
Defense Systems	**1,859**	1,931	**5,626**	5,615
Mission Systems	**2,551**	2,310	**7,344**	6,924
Space Systems	**2,198**	1,885	**6,194**	5,474
Intersegment eliminations	**(439)**	(421)	**(1,259)**	(1,202)
Total sales	**9,083**	8,475	**26,587**	25,120
Operating income				
Aeronautics Systems	**294**	269	**867**	879
Defense Systems	**217**	201	**632**	617
Mission Systems	**370**	351	**1,070**	1,012
Space Systems	**224**	191	**635**	574
Intersegment eliminations	**(56)**	(57)	**(157)**	(156)
Total segment operating income	**1,049**	955	**3,047**	2,926
Net FAS (service)/CAS pension adjustment	**108**	131	**316**	346
Unallocated corporate expense	**(172)**	(135)	**(450)**	(439)
Total operating income	**$ 985**	$ 951	**$ 2,913**	$ 2,833

Net FAS (Service)/CAS Pension Adjustment
For financial statement purposes, we account for our employee pension plans in accordance with FAS. However, the cost of these plans is charged to our contracts in accordance with the Federal Acquisition Regulation (FAR) and the related U.S. Government Cost Accounting Standards (CAS). The net FAS (service)/CAS pension adjustment reflects the difference between CAS pension expense included as cost in segment operating income and the service cost component of FAS expense included in total operating income.

Unallocated Corporate Expense

Unallocated corporate expense includes the portion of corporate costs not considered allowable or allocable under applicable CAS or FAR, and therefore not allocated to the segments, such as a portion of management and administration, legal, environmental, compensation, retiree benefits, advertising and other corporate unallowable costs. Unallocated corporate expense also includes costs not considered part of management's evaluation of segment operating performance, such as amortization of purchased intangible assets and the additional depreciation expense related to the step-up in fair value of property, plant and equipment acquired through business combinations, as well as certain compensation and other costs.

Disaggregation of Revenue

Sales by Customer Type	Three Months Ended September 30				Nine Months Ended September 30			
	2020		2019		**2020**		2019	
$ in millions	**$**	**%[3]**	$	%[3]	**$**	**%[3]**	$	%[3]
Aeronautics Systems								
U.S. government[1]	**$ 2,491**	**85%**	$ 2,334	84%	**$ 7,329**	**84%**	$ 6,906	83%
International[2]	**382**	**13%**	390	14%	**1,233**	**14%**	1,264	15%
Other customers	**11**	**1%**	19	1%	**35**	**1%**	64	1%
Intersegment sales	**30**	**1%**	27	1%	**85**	**1%**	75	1%
Aeronautics Systems sales	**2,914**	**100%**	2,770	100%	**8,682**	**100%**	8,309	100%
Defense Systems								
U.S. government[1]	**1,264**	**68%**	1,299	67%	**3,828**	**68%**	3,721	66%
International[2]	**307**	**17%**	347	18%	**963**	**17%**	1,075	19%
Other customers	**97**	**5%**	106	6%	**293**	**5%**	309	6%
Intersegment sales	**191**	**10%**	179	9%	**542**	**10%**	510	9%
Defense Systems sales	**1,859**	**100%**	1,931	100%	**5,626**	**100%**	5,615	100%
Mission Systems								
U.S. government[1]	**1,884**	**74%**	1,690	73%	**5,331**	**73%**	5,049	73%
International[2]	**455**	**18%**	407	18%	**1,406**	**19%**	1,248	18%
Other customers	**19**	**1%**	22	1%	**54**	**1%**	75	1%
Intersegment sales	**193**	**7%**	191	8%	**553**	**7%**	552	8%
Mission Systems sales	**2,551**	**100%**	2,310	100%	**7,344**	**100%**	6,924	100%
Space Systems								
U.S. government[1]	**2,020**	**92%**	1,743	93%	**5,734**	**93%**	5,091	93%
International[2]	**99**	**5%**	61	3%	**237**	**4%**	136	3%
Other customers	**54**	**2%**	57	3%	**144**	**2%**	182	3%
Intersegment sales	**25**	**1%**	24	1%	**79**	**1%**	65	1%
Space Systems sales	**2,198**	**100%**	1,885	100%	**6,194**	**100%**	5,474	100%
Total								
U.S. government[1]	**7,659**	**84%**	7,066	83%	**22,222**	**84%**	20,767	83%
International[2]	**1,243**	**14%**	1,205	14%	**3,839**	**14%**	3,723	15%
Other customers	**181**	**2%**	204	3%	**526**	**2%**	630	2%
Total Sales	**$ 9,083**	**100%**	$ 8,475	100%	**$ 26,587**	**100%**	$ 25,120	100%

(1) Sales to the U.S. government include sales from contracts for which we are the prime contractor, as well as those for which we are 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) International sales include sales from contracts for which we are the prime contractor, as well as those for which we are a subcontractor and the ultimate customer is an international customer. These sales include foreign military sales contracted through the U.S. government.

(3) Percentages calculated based on total segment sales.

NORTHROP GRUMMAN CORPORATION

Sales by Contract Type	Three Months Ended September 30				Nine Months Ended September 30			
	2020		2019		**2020**		2019	
$ in millions	**$**	**%[1]**	$	%[1]	**$**	**%[1]**	$	%[1]
Aeronautics Systems								
Cost-type	**$ 1,436**	**50%**	$ 1,326	48%	**$ 4,205**	**49%**	$ 3,950	48%
Fixed-price	**1,448**	**50%**	1,417	52%	**4,392**	**51%**	4,284	52%
Intersegment sales	**30**		27		**85**		75	
Aeronautics Systems sales	**2,914**		2,770		**8,682**		8,309	
Defense Systems								
Cost-type	**549**	**33%**	641	37%	**1,759**	**35%**	1,896	37%
Fixed-price	**1,119**	**67%**	1,111	63%	**3,325**	**65%**	3,209	63%
Intersegment sales	**191**		179		**542**		510	
Defense Systems sales	**1,859**		1,931		**5,626**		5,615	
Mission Systems								
Cost-type	**948**	**40%**	797	38%	**2,689**	**40%**	2,502	39%
Fixed-price	**1,410**	**60%**	1,322	62%	**4,102**	**60%**	3,870	61%
Intersegment sales	**193**		191		**553**		552	
Mission Systems sales	**2,551**		2,310		**7,344**		6,924	
Space Systems								
Cost-type	**1,563**	**72%**	1,312	70%	**4,429**	**72%**	3,916	72%
Fixed-price	**610**	**28%**	549	30%	**1,686**	**28%**	1,493	28%
Intersegment sales	**25**		24		**79**		65	
Space Systems sales	**2,198**		1,885		**6,194**		5,474	
Total								
Cost-type	**4,496**	**49%**	4,076	48%	**13,082**	**49%**	12,264	49%
Fixed-price	**4,587**	**51%**	4,399	52%	**13,505**	**51%**	12,856	51%
Total Sales	**$ 9,083**		$ 8,475		**$ 26,587**		$ 25,120	

[1] Percentages calculated based on external customer sales.

Sales by Geographic Region	Three Months Ended September 30				Nine Months Ended September 30			
	2020		2019		**2020**		2019	
$ in millions	**$**	**%(2)**	$	%(2)	**$**	**%(2)**	$	%(2)
Aeronautics Systems								
United States	**$ 2,502**	**87%**	$ 2,353	86%	**$ 7,364**	**86%**	$ 6,970	85%
Asia/Pacific	**217**	**7%**	177	6%	**626**	**7%**	625	7%
All other(1)	**165**	**6%**	213	8%	**607**	**7%**	639	8%
Intersegment sales	**30**		27		**85**		75	
Aeronautics Systems sales	**2,914**		2,770		**8,682**		8,309	
Defense Systems								
United States	**1,361**	**82%**	1,405	80%	**4,121**	**81%**	4,030	79%
Asia/Pacific	**103**	**6%**	78	5%	**292**	**6%**	291	6%
All other(1)	**204**	**12%**	269	15%	**671**	**13%**	784	15%
Intersegment sales	**191**		179		**542**		510	
Defense Systems sales	**1,859**		1,931		**5,626**		5,615	
Mission Systems								
United States	**1,903**	**81%**	1,712	81%	**5,385**	**79%**	5,124	81%
Asia/Pacific	**122**	**5%**	135	6%	**489**	**7%**	412	6%
All other(1)	**333**	**14%**	272	13%	**917**	**14%**	836	13%
Intersegment sales	**193**		191		**553**		552	
Mission Systems sales	**2,551**		2,310		**7,344**		6,924	
Space Systems								
United States	**2,074**	**96%**	1,800	97%	**5,878**	**96%**	5,273	98%
Asia/Pacific	**5**	**—%**	—	—%	**15**	**—%**	14	—%
All other(1)	**94**	**4%**	61	3%	**222**	**4%**	122	2%
Intersegment sales	**25**		24		**79**		65	
Space Systems sales	**2,198**		1,885		**6,194**		5,474	
Total								
United States	**7,840**	**86%**	7,270	86%	**22,748**	**86%**	21,397	85%
Asia/Pacific	**447**	**5%**	390	5%	**1,422**	**5%**	1,342	5%
All other(1)	**796**	**9%**	815	9%	**2,417**	**9%**	2,381	10%
Total Sales	**$ 9,083**		$ 8,475		**$ 26,587**		$ 25,120	

(1) All other is principally comprised of Europe and the Middle East.

(2) Percentages calculated based on external customer sales.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

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

Results of Review of Interim Financial Information

We have reviewed the accompanying condensed consolidated statement of financial position of Northrop Grumman Corporation and subsidiaries (the "Company") as of September 30, 2020, and the related condensed consolidated statements of earnings and comprehensive income and changes in shareholders' equity for the three-month and nine-month periods ended September 30, 2020 and 2019, and of cash flows for the nine-month periods ended September 30, 2020 and 2019, and the related notes (collectively referred to as the "interim financial information"). Based on our review, we are not aware of any material modifications that should be made to the accompanying interim financial information for it to be in conformity with accounting principles generally accepted in the United States of America.

We have previously audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated statement of financial position of Northrop Grumman Corporation and subsidiaries as of December 31, 2019, and the related consolidated statements of earnings and comprehensive income, changes in shareholders' equity, and cash flows for the year then ended (not presented herein); and in our report dated January 29, 2020, we expressed an unqualified opinion on those consolidated financial statements, which included an explanatory paragraph regarding the Company's change in its method of accounting for leases in 2019 due to the adoption of ASC 842, *Leases*. In our opinion, the information set forth in the accompanying condensed consolidated statement of financial position as of December 31, 2019, is fairly stated, in all material respects, in relation to the audited consolidated statement of financial position from which it has been derived.

Basis for Review Results

This interim financial information is the responsibility of the Company's management. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our reviews in accordance with standards of the PCAOB. A review of interim financial information consists principally of applying analytical procedures and making inquiries of persons responsible for financial and accounting matters. It is substantially less in scope than an audit conducted in accordance with the standards of the PCAOB, the objective of which is the expression of an opinion regarding the financial statements taken as a whole. Accordingly, we do not express such an opinion.

/s/ Deloitte & Touche LLP
McLean, Virginia
October 21, 2020

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

OVERVIEW

Northrop Grumman Corporation (herein referred to as "Northrop Grumman," the "company," "we," "us," or "our") is a leading global aerospace and defense company. We use our broad portfolio of capabilities and technologies to create and deliver innovative platforms, systems and solutions in space; manned and autonomous airborne systems, including strike; hypersonics; cyber; command, control, communications and computers, intelligence, surveillance and reconnaissance (C4ISR); and logistics and modernization. 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, as well as commercial customers.

The following discussion should be read along with the financial statements included in this Form 10-Q, as well as our 2019 Annual Report on Form 10-K, the Form 8-K that we filed with the SEC on April 29, 2020, which recasts the disclosures in certain portions of the 2019 Annual Report on Form 10-K to reflect changes in the company's reportable segments, and the Quarterly Reports on Form 10-Q for the quarters ended March 31, 2020 and June 30, 2020. These documents provide additional information on our business and the environment in which we operate and our operating results.

COVID-19

Coronavirus disease 2019 ("COVID-19") was first reported in late 2019 and has since dramatically impacted the global health and economic environment, including millions of confirmed cases, business slowdowns or shutdowns, government challenges and market volatility. In March 2020, the World Health Organization characterized COVID-19 as a global pandemic, and the President declared a national emergency concerning the COVID-19 outbreak. The company's leadership, our crisis management and business resumption teams, and local site leadership continue closely to monitor and address the developments, including the impact on our company, our employees, our customers, our suppliers and our communities. The company has considered and continues to consider guidance from the Centers for Disease Control (CDC), other health organizations, governments and our customers, among others. We have taken, and continue to take, robust actions to help protect the health, safety and well-being of our employees, to support our suppliers and local communities, and to continue to serve our customers. Our goals have been to lessen the immediate potential adverse impacts, both health and economic, and to continue to position the company for long-term success. Like the communities in which we serve, our actions have varied depending on the spread of COVID-19 and local health requirements, the needs of our employees and the needs of our business. Among other actions, we have required or enabled employees to work from home or remotely where practicable, and expanded IT and communication support to enhance their productivity; adjusted work spaces and shift schedules to facilitate social distancing for those who continue to work in our facilities; enhanced cleaning and disinfecting procedures at our facilities; required face coverings and worked to procure and distribute personal protective equipment (PPE); implemented health checks and visitor protocols; restricted travel; provided additional benefits to our employees, including for those most at risk; and contributed financial and manufacturing resources to supporting critical national requirements, such as for PPE. Along with the Northrop Grumman Foundation, we have provided grants for global, national and local organizations that support frontline healthcare workers, address food insecurity, advance efforts for vaccines, increase student access to technology and provide support to vulnerable populations; donated PPE items to emergency response teams and healthcare professionals, including N95 masks and Tyvek suits; and established a COVID-19 relief matching gift program for employees.

Earlier in the COVID-19 pandemic, many state and local jurisdictions implemented mandatory stay-at-home or shelter-in-place orders. Most of those orders exempted some or all of the defense industrial base, including Northrop Grumman and many of our suppliers, as part of the essential or critical infrastructure. Our facilities have largely remained open and many of our employees who cannot work remotely are continuing to come to work and support our customers' national security and mission-essential operations. Towards the end of the second quarter, some state and local jurisdictions started to lift mandatory stay-at-home or shelter-in-place orders and started gradually to ease restrictions. We started to implement return to office plans to allow some employees who had been working remotely slowly to return to the workplace. At our facilities, we generally saw employee absenteeism decrease and productivity increase during the second and third quarters, including in certain areas of the country where COVID-19 cases began to resurge later in the third quarter. Throughout, we have worked to adapt and to take robust actions to protect the health, safety and well-being of our employees and to serve our customers, considering, among other things, state and local requirements and guidance from the CDC. We have also taken various steps in efforts to support our suppliers, with a particular focus on critical small and midsized business partners, including passing through increased progress payments from DoD to our suppliers and accelerating payments to certain suppliers.

We have experienced and expect to continue to experience certain increased costs to maintain our operations, including as a result of actions to protect health; because of illness, quarantines, and absenteeism; as a result of government actions; and because of disruption and stress among our suppliers and customers. We have also experienced certain lower costs, including those related to employee travel, health benefits and personal time off. We continue to monitor this situation closely and cannot predict how it will change, including the extent of any increase in the number of COVID-19 cases and the costs and impacts to us. Our customers have generally continued to make timely payments, and we are working with them to consider the possibility of additional cost recoveries. Again, however, our customers are facing tremendous demands and we cannot predict how this may change and how they will continue to allocate resources.

The company’s third quarter revenue and operating income were not significantly impacted by COVID-19. Based on what we understand today, we do not currently expect to see a significant impact on our revenue or operating income during the fourth quarter directly due to COVID-19. However, our employees, suppliers and customers, the company and our global community are facing tremendous challenges and we cannot predict how this dynamic situation will evolve or the impact it will have on the company. For further information on the potential impact to the company of COVID-19, see the section entitled “Risk Factors” in our Quarterly Report on Form 10-Q for the quarter ended March 31, 2020.

U.S. Political and Economic Environment

Since the filing of our 2019 Annual Report on Form 10-K, the President released his budget request for fiscal year 2021 (FY 2021) on February 10, 2020. The FY 2021 budget request included $746 billion for national security, which continues to be the subject of debate in Congress. The FY 2021 budget request addressed various capabilities highlighted in the U.S. National Security Strategy, the National Defense Strategy and the Missile Defense Review. FY 2021 appropriations have not been enacted and on October 1, 2020, a continuing resolution was enacted, providing broadly funding at fiscal year 2020 levels through December 11, 2020. It remains uncertain when the government will approve FY 2021 appropriations and what programs will be funded and at what levels. Earlier this year, Congress also passed emergency COVID-19 relief bills addressing certain impacts of the pandemic and it is continuing to consider other responses to the COVID-19 crisis, with broader implications for the defense industry and the overall economic environment, including the national debt. We believe that our capabilities, particularly in space, missiles, missile defense, hypersonics, counter-hypersonics, survivable aircraft and mission systems should continue to allow for long-term profitable growth in our business in support of our customers’ needs.

CONSOLIDATED OPERATING RESULTS

Selected financial highlights are presented in the table below:

	Three Months Ended September 30		%	Nine Months Ended September 30		%
$ in millions, except per share amounts	**2020**	2019	**Change**	**2020**	2019	**Change**
Sales	**$ 9,083**	$ 8,475	**7%**	**$ 26,587**	$ 25,120	**6%**
Operating costs and expenses	**8,098**	7,524	**8%**	**23,674**	22,287	**6%**
Operating costs and expenses as a % of sales	***89.2%***	*88.8%*		***89.0%***	*88.7%*	
Operating income	**985**	951	**4%**	**2,913**	2,833	**3%**
Operating margin rate	***10.8%***	*11.2%*		***11.0%***	*11.3%*	
Federal and foreign income tax expense	**181**	122	**48%**	**564**	460	**23%**
Effective income tax rate	***15.5%***	*11.6%*		***16.5%***	*14.8%*	
Net earnings	**986**	933	**6%**	**2,859**	2,657	**8%**
Diluted earnings per share	**$ 5.89**	$ 5.49	**7%**	**$ 17.05**	$ 15.60	**9%**

Sales

Current Quarter

Third quarter 2020 sales increased $608 million, or 7 percent, due to higher sales at Space Systems, Mission Systems and Aeronautics Systems.

Year to Date

Year to date 2020 sales increased $1.5 billion, or 6 percent, due to higher sales at each of the sectors.

See “Segment Operating Results” below for further information by segment and “Product and Service Analysis” for product and service detail. See Note 9 to the financial statements for information regarding the company’s sales by customer type, contract type and geographic region for each of our segments.

Operating Income and Margin Rate

Current Quarter

Third quarter 2020 operating income increased $34 million, or 4 percent, primarily due to an increase in segment operating income, partially offset by higher unallocated corporate expense and a lower net FAS (service)/CAS pension adjustment. Third quarter 2020 operating margin rate declined to 10.8 percent reflecting an increase in unallocated corporate expense and lower net FAS (service)/CAS pension adjustment, partially offset by a higher segment operating margin rate.

Third quarter 2020 general and administrative (G&A) costs as a percentage of sales increased to 9.4 percent from 9.2 percent in the prior period primarily due to higher independent research and development and other indirect costs, partially offset by higher sales.

Year to Date

Year to date 2020 operating income increased $80 million, or 3 percent, primarily due to an increase in segment operating income, partially offset by a lower net FAS (service)/CAS pension adjustment and higher unallocated corporate expense. Year to date 2020 operating margin rate declined to 11.0 percent principally reflecting a lower segment operating margin rate and net FAS (service)/CAS pension adjustment.

Year to date 2020 general and administrative (G&A) costs as a percentage of sales of 9.3 percent were comparable to the prior year period.

See “Segment Operating Results” below for further information by segment. For information regarding product and service operating costs and expenses, see “Product and Service Analysis” below.

Federal and Foreign Income Taxes

Current Quarter

The third quarter 2020 effective tax rate (ETR) increased to 15.5 percent from 11.6 percent in the prior year period primarily due to lower research credits, partially offset by benefits relating to foreign-derived intangible income. See Note 3 to the financial statements for additional information.

Year to Date

The year to date 2020 ETR increased to 16.5 percent from 14.8 percent in the prior year period due to the same current quarter items discussed above. See Note 3 to the financial statements for additional information.

Net Earnings

Current Quarter

Third quarter 2020 net earnings increased $53 million, or 6 percent, primarily due to increases in our FAS (non-service) pension benefit and operating income, partially offset by higher income tax and interest expense.

Year to Date

Year to date 2020 net earnings increased $202 million, or 8 percent, primarily due to increases in our FAS (non-service) pension benefit and operating income, partially offset by higher income tax and interest expense and a decrease in Other, net, largely due to lower returns on marketable securities related to our non-qualified benefit plans.

Diluted Earnings Per Share

Current Quarter

Third quarter 2020 diluted earnings per share increased 7 percent, reflecting a 6 percent increase in net earnings and a 2 percent reduction in weighted-average diluted shares outstanding.

Year to Date

Year to date 2020 diluted earnings per share increased 9 percent, reflecting a 8 percent increase in net earnings and a 2 percent reduction in weighted-average diluted shares outstanding.

SEGMENT OPERATING RESULTS

Basis of Presentation

Effective January 1, 2020, the company reorganized its operating sectors to better align the company's broad portfolio to serve its customers' needs. The four new sectors, which also comprise our reportable segments, are Aeronautics Systems, Defense Systems, Mission Systems and Space Systems. This realignment is reflected in the accompanying financial information.

Beginning in the second quarter of 2020, the company no longer considers certain unallowable costs as part of management's evaluation of segment operating performance. As a result, certain unallowable costs, which were previously included in segment operating results, are now reported in Unallocated corporate expense within operating income. This change has been applied retrospectively in the accompanying financial information. See Part II, Item 5 in the Quarterly Report on Form 10-Q for the quarter ended June 30, 2020 for further information regarding the impact of this change on the company's prior period segment information.

We present our sectors in the following business areas, which are reported in a manner reflecting core capabilities:

Aeronautics Systems	Defense Systems	Mission Systems	Space Systems
Autonomous Systems	Battle Management & Missile Systems	Airborne Sensors & Networks	Launch & Strategic Missiles
Manned Aircraft	Mission Readiness	Cyber & Intelligence Mission Solutions	Space
		Maritime/Land Systems & Sensors	
		Navigation, Targeting & Survivability	

This section discusses segment sales, operating income and operating margin rates. In evaluating segment operating performance, we look primarily at changes in sales and operating income. 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 of results of operations below first focuses on our four segments before distinguishing between products and services. Changes in sales are generally described in terms of volume, while changes in margin rates are generally described in terms of performance and/or contract mix. For purposes of this discussion, volume generally refers to increases or decreases in sales or cost from production/service activity levels and performance generally refers to non-volume related changes in profitability. Contract mix generally refers to changes in the ratio of contract type and/or lifecycle (e.g., cost-type, fixed-price, development, production, and/or sustainment).

NORTHROP GRUMMAN CORPORATION

Segment Operating Income and Margin Rate

Segment operating income, as reconciled in the table below, and segment operating margin rate (segment operating income divided by sales) are non-GAAP (accounting principles generally accepted in the United States of America) measures that reflect total earnings from our four segments, including allocated pension expense we have recognized under the Federal Acquisition Regulation (FAR) and the related U.S. Government Cost Accounting Standards (CAS), and excluding FAS pension expense and unallocated corporate items (certain corporate-level expenses, which are not considered allowable or allocable under applicable CAS or FAR, and costs not considered part of management's evaluation of segment operating performance). These non-GAAP measures may be useful to investors and other users of our financial statements as supplemental measures in evaluating the financial performance and operational trends of our sectors. These measures may not be defined and calculated by other companies in the same manner and should not be considered in isolation or as alternatives to operating results presented in accordance with GAAP.

	Three Months Ended September 30		%	Nine Months Ended September 30		%
$ in millions	**2020**	2019	**Change**	**2020**	2019	**Change**
Segment operating income	**$ 1,049**	$ 955	**10 %**	**$ 3,047**	$ 2,926	**4 %**
Segment operating margin rate	***11.5%***	*11.3%*		***11.5%***	*11.6%*	
CAS pension expense	**210**	223	**(6)%**	**622**	622	**—**
Less: FAS (service) pension expense	**(102)**	(92)	**11 %**	**(306)**	(276)	**11 %**
Net FAS (service)/CAS pension adjustment	**108**	131	**(18)%**	**316**	346	**(9)%**
Intangible asset amortization and PP&E step-up depreciation	**(81)**	(98)	**(17)%**	**(240)**	(292)	**(18)%**
Other unallocated corporate expense	**(91)**	(37)	**146 %**	**(210)**	(147)	**43 %**
Unallocated corporate expense	**(172)**	(135)	**27 %**	**(450)**	(439)	**3 %**
Operating income	**$ 985**	$ 951	**4 %**	**$ 2,913**	$ 2,833	**3 %**

Current Quarter

Third quarter 2020 segment operating income increased $94 million, or 10 percent, due to higher segment operating income at all four sectors. Increased costs in the quarter as a result of additional state apportionment reserves were largely offset by lower costs for health benefits and corporate overhead. Segment operating margin rate increased to 11.5 percent principally due to higher operating margin rates at Defense Systems and Aeronautics Systems, partially offset by a lower operating margin rate at Mission Systems.

Year to Date

Year to date 2020 segment operating income increased $121 million, or 4 percent, primarily due to higher segment operating income at Space Systems and Mission Systems. Segment operating margin rate declined to 11.5 percent principally due to a lower segment operating margin rate at Aeronautics Systems.

Net FAS (service)/CAS Pension Adjustment

The third quarter 2020 and year to date 2020 net FAS (service)/CAS pension adjustments decreased due to changes in actuarial assumptions as of December 31, 2019 and the impact of updated demographic information recognized during the third quarter of each year.

Unallocated Corporate Expense

Current Quarter

The increase in third quarter 2020 unallocated corporate expense is primarily due to $50 million of higher state tax expense principally related to changes in deferred state income taxes and an increase in reserves, in part, for potential unallowable costs associated with state apportionment, partially offset by $17 million of lower intangible asset amortization and PP&E step-up depreciation.

Year to Date

Year to date 2020 unallocated corporate expense was comparable to the prior year period and reflects $47 million of higher state tax expense principally related to changes in deferred state income taxes and an increase in reserves, in part, for potential unallowable costs associated with state apportionment and $52 million of lower intangible asset amortization and PP&E step-up depreciation.

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

	Three Months Ended September 30		Nine Months Ended September 30	
$ in millions	**2020**	2019	**2020**	2019
Favorable EAC adjustments	**$ 271**	$ 285	**$ 788**	$ 803
Unfavorable EAC adjustments	**(148)**	(160)	**(429)**	(382)
Net EAC adjustments	**$ 123**	$ 125	**$ 359**	$ 421

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

	Three Months Ended September 30		Nine Months Ended September 30	
$ in millions	**2020**	2019	**2020**	2019
Aeronautics Systems	**$ —**	$ 19	**$ 34**	$ 129
Defense Systems	**58**	36	**119**	106
Mission Systems	**58**	70	**196**	157
Space Systems	**10**	4	**15**	41
Eliminations	**(3)**	(4)	**(5)**	(12)
Net EAC adjustments	**$ 123**	$ 125	**$ 359**	$ 421

For purposes of the discussion in the remainder of this Segment Operating Results section, references to operating income and operating margin rate reflect segment operating income and segment operating margin rate, respectively.

AERONAUTICS SYSTEMS	Three Months Ended September 30		%	Nine Months Ended September 30		%
$ in millions	**2020**	2019	**Change**	**2020**	2019	**Change**
Sales	**$ 2,914**	$ 2,770	**5%**	**$ 8,682**	$ 8,309	**4 %**
Operating income	**294**	269	**9%**	**867**	879	**(1)%**
Operating margin rate	***10.1%***	*9.7%*		***10.0%***	*10.6%*	

Sales

Current Quarter

Third quarter 2020 sales increased $144 million, or 5 percent, due to higher sales in both Manned Aircraft and Autonomous Systems. Higher volume on restricted programs, as well as E-2D and F-35 production programs, was partially offset by a COVID-19-related reduction in A350 production activity.

Year to Date

Year to date 2020 sales increased $373 million, or 4 percent, due to higher sales in both Manned Aircraft and Autonomous Systems. Higher volume on restricted programs, E-2D and Triton were partially offset by lower volume on the B-2 Defensive Management System (DMS) Modernization program and NATO AGS, which are both nearing completion.

Operating Income

Current Quarter

Third quarter 2020 operating income increased $25 million, or 9 percent, due to higher sales and a higher operating margin rate. Operating margin rate increased to 10.1 percent from 9.7 percent principally due to favorable overhead rate performance, which more than offset lower net EAC adjustments.

Year to Date

Year to date 2020 operating income decreased $12 million, or 1 percent, and operating margin rate decreased to 10.0 percent from 10.6 percent, principally due to lower net EAC adjustments at Autonomous Systems, partially offset by a $21 million benefit recognized in connection with the resolution of a government accounting matter.

DEFENSE SYSTEMS	Three Months Ended September 30		%	Nine Months Ended September 30		%
$ in millions	**2020**	2019	**Change**	**2020**	2019	**Change**
Sales	**$ 1,859**	$ 1,931	**(4)%**	**$ 5,626**	$ 5,615	**—**
Operating income	**217**	201	**8 %**	**632**	617	**2%**
Operating margin rate	***11.7%***	*10.4%*		***11.2%***	*11.0%*	

Sales

Current Quarter

Third quarter 2020 sales decreased $72 million, or 4 percent, due to lower sales in both Mission Readiness and Battle Management & Missile Systems. Mission Readiness sales decreased primarily due to lower volume on the Hunter sustainment program as it nears completion. Battle Management & Missile Systems sales decreased principally due to lower volume on programs nearing completion, including several small caliber ammunition programs and an international weapons program, partially offset by higher volume on the Guided Missile Launch Rocket System (GMLRS), the Advanced Anti-Radiation Guided Missile (AARGM) program and other missile products.

Year to Date

Year to date 2020 sales were comparable to the prior year period and reflect higher sales in Battle Management & Missile Systems, partially offset by lower sales in Mission Readiness. Battle Management & Missile Systems sales increased primarily due to higher volume on GMLRS, AARGM, the Counter-Rocket, Artillery and Mortar program and other missile products, partially offset by lower volume on programs nearing completion, including an international weapons program and several small caliber ammunition programs. Mission Readiness sales decreased principally due to lower volume on the Hunter sustainment program as it nears completion, partially offset by higher restricted volume.

Operating Income

Current Quarter

Third quarter 2020 operating income increased $16 million, or 8 percent, due to a higher operating margin rate, partially offset by lower sales. Operating margin rate increased to 11.7 percent from 10.4 percent primarily due to improved performance on Battle Management & Missile Systems programs.

Year to Date

Year to date 2020 operating income increased $15 million, or 2 percent, due to a higher operating margin rate. Operating margin rate increased to 11.2 percent from 11.0 percent primarily due to improved performance on Battle Management & Missile Systems programs.

MISSION SYSTEMS	Three Months Ended September 30		%	Nine Months Ended September 30		%
$ in millions	**2020**	2019	**Change**	**2020**	2019	**Change**
Sales	**$ 2,551**	$ 2,310	**10%**	**$ 7,344**	$ 6,924	**6%**
Operating income	**370**	351	**5%**	**1,070**	1,012	**6%**
Operating margin rate	***14.5%***	*15.2%*		***14.6%***	*14.6%*	

Sales

Current Quarter

Third quarter 2020 sales increased $241 million, or 10 percent, due to higher volume in all four business areas. Airborne Sensors & Networks sales increased primarily due to higher airborne radar volume, including on the Multi-role Electronically Scanned Array (MESA) and F-35 programs. Navigation, Targeting & Survivability sales increased principally due to higher volume on self-protection programs and targeting systems, including the LITENING program. Maritime/Land Systems & Sensors sales increased primarily due to higher volume on marine systems programs and the Ground/Air Task Oriented Radar (G/ATOR) program. Cyber & Intelligence Mission Solutions sales increased principally due to higher restricted volume.

Year to Date

Year to date 2020 sales increased $420 million, or 6 percent, primarily due to higher volume on Airborne Sensors & Networks, Maritime/Land Systems & Sensors and Navigation, and Targeting & Survivability programs, partially offset by lower volume on Cyber & Intelligence Mission Solutions programs. Airborne Sensors & Networks sales increased principally due to higher airborne radar volume, including on the F-35, MESA and Scalable Agile Beam

Radar (SABR) programs. Maritime/Land Systems & Sensors sales increased primarily due to higher volume on marine systems and restricted programs, partially offset by lower international volume due, in part, to COVID-19-related impacts. Navigation, Targeting & Survivability sales increased principally due to higher volume on self-protection, avionics and targeting programs, partially offset by lower volume on infrared countermeasures programs. Cyber & Intelligence Mission Solutions sales decreased principally due to lower volume on an intelligence program as it nears completion, partially offset by higher restricted volume.

Operating Income
Current Quarter
Third quarter 2020 operating income increased $19 million, or 5 percent, due to higher sales, partially offset by a lower operating margin rate. Operating margin rate decreased to 14.5 percent from 15.2 percent primarily due to timing of net EAC adjustments on Airborne Sensors & Networks programs and changes in contract mix on Navigation, Targeting & Survivability programs, partially offset by improved performance on Maritime/Land Systems & Sensors.

Year to Date
Year to date 2020 operating income increased $58 million, or 6 percent, due to higher sales. Operating margin rate of 14.6 percent was comparable with the prior year period.

SPACE SYSTEMS	Three Months Ended September 30		%	Nine Months Ended September 30		%
$ in millions	**2020**	2019	**Change**	**2020**	2019	**Change**
Sales	**$ 2,198**	$ 1,885	**17%**	**$ 6,194**	$ 5,474	**13%**
Operating income	**224**	191	**17%**	**635**	574	**11%**
Operating margin rate	***10.2%***	*10.1%*		***10.3%***	*10.5%*	

Sales
Current Quarter
Third quarter 2020 sales increased $313 million, or 17 percent, due to higher sales in both Space and Launch & Strategic Missiles. Space sales were driven by higher volume on restricted programs, Next Generation Overhead Persistent Infrared (Next Gen OPIR) and NASA Artemis programs. Launch & Strategic Missiles sales reflect higher volume on launch vehicles and hypersonics programs, partially offset by lower volume on the Commercial Resupply Service (CRS) missions.

Year to Date
Year to date 2020 sales increased $720 million, or 13 percent, due to higher sales in both Space and Launch & Strategic Missiles. Space sales were driven by higher volume on restricted programs, Next Gen OPIR and NASA Artemis programs. Launch & Strategic Missiles sales reflect higher volume on launch vehicles and hypersonics programs, partially offset by lower volume on the Ground-based Midcourse Defense program.

Operating Income
Current Quarter
Third quarter 2020 operating income increased $33 million, or 17 percent, due to higher sales. Operating margin rate of 10.2 percent was comparable to the prior year period.

Year to Date
Year to date 2020 operating income increased $61 million, or 11 percent, due to higher sales, partially offset by a lower operating margin rate. Operating margin rate decreased to 10.3 percent from 10.5 percent principally due to lower net EAC adjustments.

PRODUCT AND SERVICE ANALYSIS

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

	Three Months Ended September 30				Nine Months Ended September 30			
$ in millions	**2020**		2019		**2020**		2019	
Segment Information:	**Sales**	**Operating Costs and Expenses**	Sales	Operating Costs and Expenses	**Sales**	**Operating Costs and Expenses**	Sales	Operating Costs and Expenses
Aeronautics Systems								
Product	**$ 2,469**	**$ 2,231**	$ 2,311	$ 2,100	**$ 7,390**	**$ 6,677**	$ 7,017	$ 6,310
Service	**415**	**362**	432	376	**1,207**	**1,062**	1,217	1,052
Intersegment eliminations	**30**	**27**	27	25	**85**	**76**	75	68
Total Aeronautics Systems	**2,914**	**2,620**	2,770	2,501	**8,682**	**7,815**	8,309	7,430
Defense Systems								
Product	**735**	**661**	732	687	**2,258**	**2,041**	2,050	1,870
Service	**933**	**812**	1,020	883	**2,826**	**2,469**	3,055	2,672
Intersegment eliminations	**191**	**169**	179	160	**542**	**484**	510	456
Total Defense Systems	**1,859**	**1,642**	1,931	1,730	**5,626**	**4,994**	5,615	4,998
Mission Systems								
Product	**1,735**	**1,506**	1,450	1,218	**4,889**	**4,168**	4,406	3,710
Service	**623**	**511**	669	583	**1,902**	**1,635**	1,966	1,739
Intersegment eliminations	**193**	**164**	191	158	**553**	**471**	552	463
Total Mission Systems	**2,551**	**2,181**	2,310	1,959	**7,344**	**6,274**	6,924	5,912
Space Systems								
Product	**1,728**	**1,550**	1,504	1,344	**4,788**	**4,277**	4,132	3,674
Service	**445**	**401**	357	329	**1,327**	**1,211**	1,277	1,167
Intersegment eliminations	**25**	**23**	24	21	**79**	**71**	65	59
Total Space Systems	**2,198**	**1,974**	1,885	1,694	**6,194**	**5,559**	5,474	4,900
Segment Totals								
Total Product	**$ 6,667**	**$ 5,948**	$ 5,997	$ 5,349	**$ 19,325**	**$ 17,163**	$ 17,605	$ 15,564
Total Service	**2,416**	**2,086**	2,478	2,171	**7,262**	**6,377**	7,515	6,630
Total Segment[(1)]	**$ 9,083**	**$ 8,034**	$ 8,475	$ 7,520	**$ 26,587**	**$ 23,540**	$ 25,120	$ 22,194

[(1)] A reconciliation of segment operating income to total operating income is included in “Segment Operating Results.”

Product Sales and Costs

Current Quarter

Third quarter 2020 product sales increased $670 million, or 11 percent, primarily due to higher product sales at all four sectors, including restricted programs and Next Gen OPIR at Space Systems, restricted programs at Aeronautics Systems and restricted and airborne radar programs at Mission Systems.

Third quarter 2020 product costs increased $599 million, or 11 percent, consistent with the higher product sales described above.

Year to Date

Year to date 2020 product sales increased $1.7 billion, or 10 percent, principally due to higher product sales at all four sectors, including restricted programs and Next Gen OPIR at Space Systems, restricted programs at Aeronautics Systems, restricted and airborne radar programs at Mission Systems and GMLRS, AARGM and other missile products at Defense Systems.

Year to date 2020 product costs increased $1.6 billion, or 10 percent, consistent with the higher product sales described above.

Service Sales and Costs
Current Quarter
Third quarter 2020 service sales decreased $62 million, or 3 percent, primarily due to lower service sales on the Hunter sustainment program as it nears completion as well as a shift toward more product content in the lifecycle of several programs at Defense Systems.

Third quarter 2020 service costs decreased $85 million, or 4 percent, consistent with the lower service sales described above and reflects higher service margins at Mission Systems and Space Systems.

Year to Date
Year to date 2020 service sales decreased $253 million, or 3 percent, primarily due lower service sales at Defense Systems principally due to a shift toward more product content in the lifecycle of several programs and lower volume on the Hunter sustainment program.

Year to date 2020 service costs decreased $253 million, or 4 percent, consistent with the lower service sales described above and reflects a higher service margin at Mission Systems, partially offset by a lower service margin at Aeronautics Systems.

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. Backlog is converted into sales as costs are incurred or deliveries are made.

Backlog consisted of the following as of September 30, 2020 and December 31, 2019:

	September 30, 2020			December 31, 2019	
$ in millions	**Funded**	**Unfunded**	**Total Backlog**	Total Backlog	% Change in 2020
Aeronautics Systems	**$ 11,802**	**$ 11,760**	**$ 23,562**	$ 26,021	**(9)%**
Defense Systems	**6,793**	**1,350**	**8,143**	8,481	**(4)%**
Mission Systems	**9,679**	**4,185**	**13,864**	14,226	**(3)%**
Space Systems	**5,066**	**30,620**	**35,686**	16,112	**121 %**
Total backlog	**$ 33,340**	**$ 47,915**	**$ 81,255**	$ 64,840	**25 %**

New Awards
Third quarter and year to date 2020 net awards totaled $20.3 billion and $43.0 billion, respectively, and backlog increased to $81.3 billion. Significant third quarter new awards include $13.3 billion for the Ground Based Strategic Deterrent EMD program, $1.9 billion for restricted programs and $0.9 billion for F-35.

LIQUIDITY AND CAPITAL RESOURCES

We endeavor to ensure efficient conversion of operating income into cash and to increase shareholder value through cash deployment activities. In addition to our cash position, we use various financial measures to assist in capital deployment decision-making, including cash provided by operating activities and free cash flow, a non-GAAP measure described in more detail below.

At September 30, 2020, we had $5.0 billion in cash and cash equivalents. In March 2020, we issued $2.25 billion of unsecured senior notes to help preserve financial flexibility in light of uncertainty resulting from the COVID-19 pandemic. We intend to use those proceeds for general corporate purposes, which may include debt repayment and working capital. In April 2020, we entered into a one-year $500 million uncommitted credit facility to provide an additional source of potential financing. On October 15, 2020, the company repaid $1.0 billion of unsecured senior notes upon maturity.

The Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act") established a program with provisions to allow U.S. companies to defer the employer's portion of social security taxes between March 27, 2020 and December 31, 2020 and pay such taxes in two installments in 2021 and 2022. Under Section 3610, the CARES Act also authorized the government to reimburse qualifying contractors for certain costs of providing paid leave to employees as a result of COVID-19. The company has begun to seek, and anticipates continuing to seek, recovery for certain COVID-19-related costs under Section 3610 of the CARES Act and through our contract provisions. In addition, the U.S. Department of Defense (DoD) has, to date, taken steps to increase the rate for certain progress payments from 80 percent to 90 percent for costs incurred and work performed on relevant contracts. We believe these actions should continue to mitigate some COVID-19-related negative impacts to our operating cash flows during the fourth quarter.

Cash and cash equivalents and cash generated from operating activities, supplemented by borrowings under credit facilities, commercial paper 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 key components of cash flow provided by operating activities:

	Nine Months Ended September 30		%
$ in millions	**2020**	2019	**Change**
Net earnings	**$ 2,859**	$ 2,657	**8 %**
Non-cash items[1]	**1,352**	1,041	**30 %**
Changes in assets and liabilities:			
Trade working capital	**(816)**	(1,392)	**(41)%**
Retiree benefits	**(704)**	(422)	**67 %**
Other, net	**12**	(51)	**(124)%**
Net cash provided by operating activities	**$ 2,703**	$ 1,833	**47 %**

[1] Includes depreciation and amortization, non-cash lease expense, stock based compensation expense and deferred income taxes.

Year to date 2020 cash provided by operating activities increased $870 million principally due to improved trade working capital and higher net earnings. The improvement in trade working capital reflects CARES Act payroll tax deferrals and increased DoD progress payment rates, partially offset by acceleration of payments to suppliers and pass through of increased progress payments to suppliers.

Free Cash Flow

Free cash flow, as reconciled in the table below, is a non-GAAP measure defined as net cash provided by operating activities less capital expenditures, and may not be defined and calculated by other companies in the same manner. We use free cash flow as a key factor in our planning for, and consideration of, acquisitions, the payment of dividends and stock repurchases. This non-GAAP measure may be useful to investors and other users of our financial statements as a supplemental measure of our cash performance, but should not be considered in isolation, as a measure of residual cash flow available for discretionary purposes, or as an alternative to operating cash flows presented in accordance with GAAP.

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

	Nine Months Ended September 30		%
$ in millions	**2020**	2019	**Change**
Net cash provided by operating activities	**$ 2,703**	$ 1,833	**47%**
Less: capital expenditures	**(828)**	(793)	**4%**
Free cash flow	**$ 1,875**	$ 1,040	**80%**

Year to date 2020 free cash flow increased $835 million principally due to the increase in net cash provided by operating activities.

Investing Cash Flow
Year to date 2020 net cash used in investing activities increased to $828 million from $785 million due to higher capital expenditures.

Financing Cash Flow
Year to date 2020 net cash provided by financing activities was $875 million compared to net cash used in financing activities of $1.5 billion in 2019, principally due to $2.2 billion of net proceeds from the issuance of long-term debt in the first quarter of 2020.

Credit Facilities, Commercial Paper and Financial Arrangements - See Note 6 to the financial statements for further information on our credit facilities, commercial paper and our use of standby letters of credit and guarantees.

Share Repurchases - See Note 2 to the financial statements for further information on our share repurchase programs.

Long-term Debt - See Note 4 to the financial statements for further information.

CRITICAL ACCOUNTING POLICIES, ESTIMATES AND JUDGMENTS

There have been no material changes to our critical accounting policies, estimates or judgments from those discussed in our 2019 Annual Report on Form 10-K.

ACCOUNTING STANDARDS UPDATES

See Note 1 to our financial statements for further information on accounting standards updates.

FORWARD-LOOKING STATEMENTS AND PROJECTIONS

This Form 10-Q and the information we are incorporating by reference contain statements that constitute “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as “will,” “expect,” “anticipate,” “intend,” “may,” “could,” “should,” “plan,” “project,” “forecast,” “believe,” “estimate,” “outlook,” “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/or 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 and discussed more fully in the section entitled “Risk Factors” in our 2019 Annual Report on Form 10-K, in the section entitled “Risk Factors” in our Quarterly Report on Form 10-Q for the quarter ended March 31, 2020 and from time to time in our other filings with the Securities and Exchange Commission (SEC). These risks and uncertainties are amplified by the global COVID-19 pandemic, which has caused and will continue to cause significant challenges, instability and uncertainty. They include:

- the impact of the COVID-19 outbreak or future epidemics on our business, including the potential for worker absenteeism, facility closures, work slowdowns or stoppages, supply chain disruptions, program delays, our ability to recover costs under contracts, changing government funding and acquisition priorities and processes, changing government payment rules and practices, and potential impacts on access to capital, the markets and the fair value of our assets
- our dependence on the U.S. government for a substantial portion of our business
- significant delays or reductions in appropriations for our programs, and U.S. government funding and program support more broadly
- investigations, claims, disputes, enforcement actions, litigation and/or other legal proceedings
- the use of estimates when accounting for our contracts and the effect of contract cost growth and/or changes in estimated contract revenues and costs
- our exposure to additional risks as a result of our international business, including risks related to geopolitical and economic factors, suppliers, laws and regulations
- the improper conduct of employees, agents, subcontractors, suppliers, business partners or joint ventures in which we participate and the impact on our reputation and our ability to do business

- cyber and other security threats or disruptions faced by us, our customers or our suppliers and other partners
- the performance and financial viability of our subcontractors and suppliers and the availability and pricing of raw materials and components
- changes in procurement and other laws, regulations, contract terms and practices applicable to our industry, findings by the U.S. government as to our compliance with such requirements, and changes in our customers' business practices globally
- increased competition within our markets and bid protests
- the ability to maintain a qualified workforce with the required security clearances and requisite skills
- our ability to meet performance obligations under our contracts, including obligations that require innovative design capabilities, are technologically complex, require certain manufacturing expertise or are dependent on factors not wholly within our control
- environmental matters, including unforeseen environmental costs and government and third party claims
- natural disasters
- health epidemics, pandemics and similar outbreaks, including the global COVID-19 pandemic
- the adequacy and availability of our insurance coverage, customer indemnifications or other liability protections
- products and services we provide related to hazardous and high risk operations, including the production and use of such products, which subject us to various environmental, regulatory, financial, reputational and other risks
- the future investment performance of plan assets, changes in actuarial assumptions associated with our pension and other postretirement benefit plans and legislative or other regulatory actions impacting our pension and postretirement benefit obligations
- our ability appropriately to exploit and/or protect intellectual property rights
- our ability to develop new products and technologies and maintain technologies, facilities, and equipment to win new competitions and meet the needs of our customers
- unanticipated changes in our tax provisions or exposure to additional tax liabilities
- changes in business conditions that could impact business investments and/or recorded goodwill or the value of other long-lived assets

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.

CONTRACTUAL OBLIGATIONS

Other than the debt transactions, including associated interest, described in Note 4 of Part I, Item 1, there have been no material changes to our contractual obligations from those discussed in our 2019 Annual Report on Form 10-K.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

There have been no material changes to our market risks from those discussed in our 2019 Annual Report on Form 10-K.

Item 4. Controls and Procedures

DISCLOSURE CONTROLS AND PROCEDURES

Our principal executive officer (Chairman, Chief Executive Officer and President) and principal financial officer (Corporate Vice President and Chief Financial Officer) have evaluated the company's disclosure controls and procedures (as defined in Rule 13a-15(e) and Rule 15d-15(e) of the Securities Exchange Act of 1934 (the Exchange Act)) as of September 30, 2020, and have concluded that these controls and procedures are effective to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms. These disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed in the reports that we file or submit is accumulated and communicated to management, including the principal executive officer and the principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

CHANGES IN INTERNAL CONTROL OVER FINANCIAL REPORTING

During the three months ended September 30, 2020, no changes occurred in our internal control over financial reporting that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

We have provided information about certain legal proceedings in which we are involved in Notes 5 and 6 to the financial statements.

We are a party to various investigations, lawsuits, arbitration, claims, enforcement actions and other legal proceedings, including government investigations and claims, that arise in the ordinary course of our business. These types of matters could result in administrative, civil or criminal fines, penalties or other sanctions (which terms include judgments or convictions and consent or other voluntary decrees or agreements); compensatory, treble or other damages; non-monetary relief or actions; or other liabilities. Government regulations provide that certain allegations against a contractor may lead to suspension or debarment from future government contracts or suspension of export privileges for the company or one or more of its components. The nature of legal proceedings is such that we cannot assure the outcome of any particular matter. For additional information on pending matters, please see Notes 5 and 6 to the financial statements, and for further information on the risks we face from existing and future investigations, lawsuits, arbitration, claims, enforcement actions and other legal proceedings, please see “Risk Factors” in our 2019 Annual Report on Form 10-K.

Environmental Matters Involving Potential Monetary Damages in Excess of $100,000

The following environmental matter is reported pursuant to SEC Regulation S-K Item 103 because it involves potential monetary damages in excess of $100,000. In June 2016, the U.S. Environmental Protection Agency (EPA) conducted an environmental inspection at the Allegheny Ballistics Laboratory in Rocket Center, WV, which was then and is now operated by Alliant Techsystems Operations LLC (“ATO”). ATO became an indirect subsidiary of the Company approximately 2 years later, in June 2018. On March 3, 2020, EPA notified ATO of a proposed penalty for alleged noncompliance with certain air emission, water discharge and waste management permitting and regulatory requirements. EPA proposed a civil penalty totaling $497,635 and certain non-monetary actions. The Company has disputed the allegations and is in discussions with the government.

Item 1A. Risk Factors

There have been no material changes to our risk factors since our 2019 Annual Report on Form 10-K, except with respect to the risk factor regarding COVID-19 that the company included in the section entitled “Risk Factors” in our Quarterly Report on Form 10-Q for the quarter ended March 31, 2020.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

We had no repurchases of common stock during the three months ended September 30, 2020. The approximate dollar value of shares that may yet be purchased under the company’s share repurchase authorization is $2.8 billion as of September 30, 2020.

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.

See Note 2 to the financial statements for further information on our share repurchase programs.

NORTHROP GRUMMAN CORPORATION

Item 6. Exhibits

2.1 Agreement and Plan of Merger among Titan II, Inc. (formerly Northrop Grumman Corporation), Northrop Grumman Corporation (formerly New P, Inc.) and Titan Merger Sub Inc., dated March 30, 2011 (incorporated by reference to Exhibit 10.1 to Form 8-K filed April 4, 2011, File No. 001-16411)

2.2 Separation and Distribution Agreement dated as of March 29, 2011, among Titan II, Inc. (formerly Northrop Grumman Corporation), Northrop Grumman Corporation (formerly New P, Inc.), Huntington Ingalls Industries, Inc., Northrop Grumman Shipbuilding, Inc. and Northrop Grumman Systems Corporation (incorporated by reference to Exhibit 10.2 to Form 8-K filed April 4, 2011, File No. 001-16411)

2.3 Agreement and Plan of Merger, dated as of September 17, 2017, among Northrop Grumman Corporation, Neptune Merger, Inc. and Orbital ATK, Inc. (incorporated by reference to Exhibit 2.1 to Form 8-K filed September 18, 2017)

2.4 Transaction Agreement, dated as of April 28, 2014, among Alliant Techsystems Inc., Vista Spinco Inc., Vista Merger Sub Inc. and Orbital Sciences Corporation (incorporated by reference to Exhibit 2.1 to Alliant Techsystems Inc. (now known as Northrop Grumman Innovation Systems, Inc.) Form 8-K filed May 2, 2014)

*15 Letter from Independent Registered Public Accounting Firm

*31.1 Certification of Kathy J. Warden pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

*31.2 Certification of David F. Keffer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

**32.1 Certification of Kathy J. Warden pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

**32.2 Certification of David F. Keffer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

*101 Northrop Grumman Corporation Quarterly Report on Form 10-Q for the quarter ended September 30, 2020, formatted in XBRL (Extensible Business Reporting Language): (i) the Cover Page, (ii) Condensed Consolidated Statements of Earnings and Comprehensive Income, (iii) Condensed Consolidated Statements of Financial Position, (iv) Condensed Consolidated Statements of Cash Flows, (v) Condensed Consolidated Statements of Changes in Shareholders’ Equity, and (vi) Notes to Condensed Consolidated Financial Statements. The instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.

*104 Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

+ Management contract or compensatory plan or arrangement

* Filed with this report

** Furnished with this report

SIGNATURES

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

NORTHROP GRUMMAN CORPORATION
(Registrant)

By: **/s/ Michael A. Hardesty**

Michael A. Hardesty
Corporate Vice President, Controller and
Chief Accounting Officer
(Principal Accounting Officer)

Date: October 21, 2020

NORTHROP GRUMMAN CORPORATION

EXHIBIT 15

LETTER FROM INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

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

We have reviewed, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the unaudited interim financial information of Northrop Grumman Corporation and subsidiaries for the periods ended September 30, 2020, and 2019, as indicated in our report dated October 21, 2020; because we did not perform an audit, we expressed no opinion on that information.

We are aware that our report referred to above, which is included in your Quarterly Report on Form 10-Q for the quarter ended September 30, 2020, is incorporated 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 Form S-8; and Registration Statement No. 333-237504 on Form S-3.

We also are aware that the aforementioned report, pursuant to Rule 436(c) under the Securities Act of 1933, is not considered a part of the Registration Statement prepared or certified by an accountant or a report prepared or certified by an accountant within the meaning of Sections 7 and 11 of that Act.

/s/ Deloitte & Touche LLP
McLean, Virginia
October 21, 2020

NORTHROP GRUMMAN CORPORATION

EXHIBIT 31.1

CERTIFICATION PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Kathy J. Warden, certify that:

1. I have reviewed this report on Form 10-Q of Northrop Grumman Corporation ("company");
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:
   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   c) Evaluated the effectiveness of the company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   d) Disclosed in this report any change in the company's internal control over financial reporting that occurred during the company's most recent fiscal quarter (the company's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and
5. The company's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company's board of directors (or persons performing the equivalent functions):
   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and
   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: October 21, 2020

/s/ Kathy J. Warden

Kathy J. Warden
Chairman, Chief Executive Officer and President

NORTHROP GRUMMAN CORPORATION

EXHIBIT 31.2

CERTIFICATION PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, David F. Keffer, certify that:

1. I have reviewed this report on Form 10-Q of Northrop Grumman Corporation (“company”);
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:
    a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    c) Evaluated the effectiveness of the company’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    d) Disclosed in this report any change in the company’s internal control over financial reporting that occurred during the company's most recent fiscal quarter (the company’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the company’s internal control over financial reporting; and
5. The company’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company’s auditors and the audit committee of the company’s board of directors (or persons performing the equivalent functions):
    a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company’s ability to record, process, summarize and report financial information; and
    b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: October 21, 2020

/s/ David F. Keffer

David F. Keffer
Corporate Vice President and Chief Financial Officer

NORTHROP GRUMMAN CORPORATION

EXHIBIT 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Northrop Grumman Corporation (the “company”) on Form 10-Q for the period ended September 30, 2020, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Kathy J. Warden, Chairman, Chief Executive Officer and President of the company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the company.

Date: October 21, 2020

/s/ **Kathy J. Warden**

Kathy J. Warden
Chairman, Chief Executive Officer and President

NORTHROP GRUMMAN CORPORATION

EXHIBIT 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Northrop Grumman Corporation (the “company”) on Form 10-Q for the period ended September 30, 2020, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, David F. Keffer, Corporate Vice President and Chief Financial Officer of the company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the company.

Date: October 21, 2020

/s/ David F. Keffer

David F. Keffer
Corporate Vice President and Chief Financial Officer