# 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, 2022

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 24, 2022, 153,912,156 shares of common stock were outstanding.

NORTHROP GRUMMAN CORPORATION

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## PART I. FINANCIAL INFORMATION

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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* | **2022** | 2021 | **2022** | 2021 |
| **Sales** | | | | |
| Product | **$ 6,979** | $ 6,845 | **$ 20,599** | $ 21,060 |
| Service | **1,992** | 1,875 | **5,970** | 5,968 |
| Total sales | **8,971** | 8,720 | **26,569** | 27,028 |
| **Operating costs and expenses** | | | | |
| Product | **5,589** | 5,352 | **16,250** | 16,662 |
| Service | **1,564** | 1,434 | **4,669** | 4,649 |
| General and administrative expenses | **974** | 891 | **2,955** | 2,788 |
| Total operating costs and expenses | **8,127** | 7,677 | **23,874** | 24,099 |
| Gain on sale of business | **—** | — | **—** | 1,980 |
| **Operating income** | **844** | 1,043 | **2,695** | 4,909 |
| Other (expense) income | | | | |
| Interest expense | **(122)** | (132) | **(386)** | (423) |
| Non-operating FAS pension benefit | **376** | 367 | **1,129** | 1,101 |
| Other, net | **(8)** | (3) | **(54)** | 6 |
| Earnings before income taxes | **1,090** | 1,275 | **3,384** | 5,593 |
| Federal and foreign income tax expense | **175** | 212 | **568** | 1,298 |
| **Net earnings** | **$ 915** | $ 1,063 | **$ 2,816** | $ 4,295 |
| | | | | |
| **Basic earnings per share** | **$ 5.92** | $ 6.65 | **$ 18.13** | $ 26.63 |
| Weighted-average common shares outstanding, in millions | **154.6** | 159.8 | **155.3** | 161.3 |
| **Diluted earnings per share** | **$ 5.89** | $ 6.63 | **$ 18.06** | $ 26.55 |
| Weighted-average diluted shares outstanding, in millions | **155.3** | 160.4 | **155.9** | 161.8 |
| | | | | |
| Net earnings (from above) | **$ 915** | $ 1,063 | **$ 2,816** | $ 4,295 |
| Other comprehensive loss, net of tax | | | | |
| Change in unamortized prior service credit | **—** | (2) | **(1)** | (6) |
| Change in cumulative translation adjustment and other, net | **(7)** | (6) | **(22)** | (6) |
| Other comprehensive loss, net of tax | **(7)** | (8) | **(23)** | (12) |
| **Comprehensive income** | **$ 908** | $ 1,055 | **$ 2,793** | $ 4,283 |

*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, 2022** | December 31, 2021 |
|---|---|---|
| **Assets** | | |
| Cash and cash equivalents | **$ 1,666** | $ 3,530 |
| Accounts receivable, net | **1,936** | 1,467 |
| Unbilled receivables, net | **6,430** | 5,492 |
| Inventoried costs, net | **989** | 811 |
| Prepaid expenses and other current assets | **1,277** | 1,126 |
| Total current assets | **12,298** | 12,426 |
| Property, plant and equipment, net of accumulated depreciation of $7,243 for 2022 and $6,819 for 2021 | **8,325** | 7,894 |
| Operating lease right-of-use assets | **1,680** | 1,655 |
| Goodwill | **17,516** | 17,515 |
| Intangible assets, net | **433** | 578 |
| Deferred tax assets | **233** | 200 |
| Other non-current assets | **2,248** | 2,311 |
| **Total assets** | **$ 42,733** | $ 42,579 |
| | | |
| **Liabilities** | | |
| Trade accounts payable | **$ 2,335** | $ 2,197 |
| Accrued employee compensation | **1,831** | 1,993 |
| Advance payments and billings in excess of costs incurred | **3,107** | 3,026 |
| Other current liabilities | **3,539** | 2,314 |
| Total current liabilities | **10,812** | 9,530 |
| Long-term debt, net of current portion of $1,069 for 2022 and $6 for 2021 | **11,803** | 12,777 |
| Pension and other postretirement benefit plan liabilities | **2,405** | 3,269 |
| Operating lease liabilities | **1,696** | 1,590 |
| Deferred tax liabilities | **86** | 490 |
| Other non-current liabilities | **1,988** | 1,997 |
| **Total liabilities** | **28,790** | 29,653 |
| **Commitments and contingencies (Note 6)** | | |
| **Shareholders' equity** | | |
| Preferred stock, $1 par value; 10,000,000 shares authorized; no shares issued and outstanding | **—** | — |
| Common stock, $1 par value; 800,000,000 shares authorized; issued and outstanding: 2022—154,093,656 and 2021—156,284,423 | **154** | 156 |
| Paid-in capital | **—** | — |
| Retained earnings | **13,955** | 12,913 |
| Accumulated other comprehensive loss | **(166)** | (143) |
| Total shareholders' equity | **13,943** | 12,926 |
| **Total liabilities and shareholders' equity** | **$ 42,733** | $ 42,579 |

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

NORTHROP GRUMMAN CORPORATION

## CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
**(Unaudited)**

| *$ in millions* | Nine Months Ended September 30 2022 | 2021 |
|---|---|---|
| **Operating activities** | | |
| Net earnings | **$ 2,816** | $ 4,295 |
| Adjustments to reconcile to net cash provided by operating activities: | | |
| Depreciation and amortization | **960** | 908 |
| Stock-based compensation | **72** | 71 |
| Deferred income taxes | **(438)** | (105) |
| Gain on sale of business | **—** | (1,980) |
| Net periodic pension and OPB income | **(895)** | (818) |
| Pension and OPB contributions | **(106)** | (108) |
| Changes in assets and liabilities: | | |
| Accounts receivable, net | **(469)** | (133) |
| Unbilled receivables, net | **(1,038)** | (596) |
| Inventoried costs, net | **(171)** | (113) |
| Prepaid expenses and other assets | **(64)** | 6 |
| Accounts payable and other liabilities | **(57)** | 49 |
| Income taxes payable, net | **(56)** | 663 |
| Other, net | **96** | (14) |
| Net cash provided by operating activities | **650** | 2,125 |
| **Investing activities** | | |
| Divestiture of IT services business | **—** | 3,400 |
| Capital expenditures | **(803)** | (682) |
| Proceeds from sale of equipment to a customer | **100** | 84 |
| Other, net | **40** | (3) |
| Net cash (used in) provided by investing activities | **(663)** | 2,799 |
| **Financing activities** | | |
| Payments of long-term debt | **—** | (2,236) |
| Common stock repurchases | **(1,011)** | (2,724) |
| Cash dividends paid | **(786)** | (737) |
| Payments of employee taxes withheld from share-based awards | **(50)** | (33) |
| Other, net | **(4)** | (46) |
| Net cash used in financing activities | **(1,851)** | (5,776) |
| Decrease in cash and cash equivalents | **(1,864)** | (852) |
| Cash and cash equivalents, beginning of year | **3,530** | 4,907 |
| Cash and cash equivalents, end of period | **$ 1,666** | $ 4,055 |

*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* | **2022** | 2021 | **2022** | 2021 |
| **Common stock** | | | | |
| Beginning of period | **$ 155** | $ 160 | **$ 156** | $ 167 |
| Common stock repurchased | **(1)** | (1) | **(3)** | (8) |
| Shares issued for employee stock awards and options | **—** | — | **1** | — |
| End of period | **154** | 159 | **154** | 159 |
| **Paid-in capital** | | | | |
| Beginning of period | **—** | — | **—** | 58 |
| Common stock repurchased | **—** | — | **—** | (60) |
| Stock compensation | **—** | — | **—** | 2 |
| End of period | **—** | — | **—** | — |
| **Retained earnings** | | | | |
| Beginning of period | **13,655** | 11,144 | **12,913** | 10,482 |
| Common stock repurchased | **(374)** | (587) | **(1,012)** | (2,676) |
| Net earnings | **915** | 1,063 | **2,816** | 4,295 |
| Dividends declared | **(269)** | (252) | **(785)** | (741) |
| Stock compensation | **28** | 30 | **23** | 38 |
| End of period | **13,955** | 11,398 | **13,955** | 11,398 |
| **Accumulated other comprehensive loss** | | | | |
| Beginning of period | **(159)** | (132) | **(143)** | (128) |
| Other comprehensive loss, net of tax | **(7)** | (8) | **(23)** | (12) |
| End of period | **(166)** | (140) | **(166)** | (140) |
| Total shareholders' equity | **$ 13,943** | $ 11,417 | **$ 13,943** | $ 11,417 |
| Cash dividends declared per share | **$ 1.73** | $ 1.57 | **$ 5.03** | $ 4.59 |

*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.

Effective January 30, 2021 (the "Divestiture date"), we completed the sale of our IT and mission support services business (the "IT services divestiture") for $3.4 billion in cash and recorded a pre-tax gain on sale of $2.0 billion. The IT and mission support services business was comprised of the majority of the former Information Solutions and Services (IS&S) division of Defense Systems (excluding the Vinnell Arabia business); select cyber, intelligence and missions support programs, which were part of the former Cyber and Intelligence Mission Solutions (CIMS) division of Mission Systems; and the former Space Technical Services business unit of Space Systems. Operating results include sales and operating income for the IT and mission support services business prior to the Divestiture date. Sales and pre-tax profit for the IT and mission support services business were $162 million and $20 million, respectively, for the nine months ended September 30, 2021.

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.

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 2021 Annual Report on Form 10-K.

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**
*Contract Estimates*
We recognize changes in estimated contract sales or costs and the resulting changes in contract profit on a cumulative basis. Cumulative estimate-at-completion (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 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* | **2022** | 2021 | **2022** | 2021 |
| Revenue | **$ 59** | $ 116 | **$ 363** | $ 478 |
| Operating income | **45** | 109 | **310** | 453 |
| Net earnings[(1)] | **36** | 86 | **245** | 358 |
| Diluted earnings per share[(1)] | **0.23** | 0.54 | **1.57** | 2.21 |

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

EAC adjustments on a single performance obligation can have a significant effect on the company's financial statements. When such adjustments occur, we generally disclose the nature, underlying conditions and financial impact of the adjustments. During the three months ended March 31, 2022, we recorded a $67 million favorable EAC adjustment on the engineering, manufacturing and development phase of the B-21 program at Aeronautics Systems largely related to performance incentives. During the three months ended September 30, 2021, we recorded a $42 million unfavorable EAC adjustment on the F-35 program at Aeronautics Systems due to labor-related production inefficiencies largely driven by COVID-19-related impacts on the labor market and employee leave. No such adjustments were material to the financial statements during the three months ended September 30, 2022.

*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, 2022 was $79.6 billion. Of our September 30, 2022 backlog, we expect to recognize approximately 40 percent as revenue over the next 12 months and 60 percent as revenue over the next 24 months, 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, 2022 that was included in the December 31, 2021 contract liability balance was $303 million and $2.2 billion, respectively. The amount of revenue recognized for the three and nine months ended September 30, 2021 that was included in the December 31, 2020 contract liability balance was $261 million and $1.8 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.

**Property, Plant, and Equipment**
During the nine months ended September 30, 2022, the company acquired $46 million of internal use software through long-term financing directly with the supplier. The software was recorded in PP&E as a non-cash investing activity and the related liability was recorded in long-term debt as a non-cash financing activity. During the nine months ended September 30, 2022, the company received lease incentives for landlord funded leasehold improvements of $96 million related to a Space Systems real estate lease, which were recorded in PP&E and included in non-cash investing activities. Non-cash investing activities also include capital expenditures incurred but not yet paid of $118 million and $105 million as of September 30, 2022 and 2021, respectively. In the fourth quarter of 2020, the company completed a sale of equipment to a customer on a restricted Aeronautics Systems program. During the nine months ended September 30, 2022 and 2021, the company received cash payments of $100 million and $84 million, respectively, related to the equipment sale and included it in Proceeds from sale of equipment to a customer in the unaudited condensed consolidated statement of cash flows.

**Accumulated Other Comprehensive Loss**
The components of accumulated other comprehensive loss, net of tax, are as follows:

| *$ in millions* | **September 30, 2022** | December 31, 2021 |
|---|---|---|
| Unamortized prior service credit | **$ 1** | $ 2 |
| Cumulative translation adjustment and other, net | **(167)** | (145) |
| Total accumulated other comprehensive loss | **$ (166)** | $ (143) |

**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, 2022, 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 0.7 million shares and 0.6 million shares for the three and nine months ended September 30, 2022, respectively. The dilutive effect of these securities totaled 0.6 million shares and 0.5 million shares for the three and nine months ended September 30, 2021, respectively.

**Share Repurchases**
On December 4, 2018, the company's board of directors authorized a share repurchase program of up to $3.0 billion of the company's common stock (the "2018 Repurchase Program"). Repurchases under the 2018 Repurchase Program commenced in March 2020 and were completed in October 2021.

On January 25, 2021, the company's board of directors authorized a share repurchase program of up to an additional $3.0 billion in share repurchases of the company's common stock (the "2021 Repurchase Program"). Repurchases under the 2021 Repurchase Program commenced in October 2021 upon the completion of the 2018 Repurchase Program. As of September 30, 2022, repurchases under the 2021 Repurchase Program totaled $1.9 billion; $1.1 billion remained under this share repurchase authorization. By its terms, the 2021 Repurchase Program is set to expire when we have used all authorized funds for repurchases.

On January 24, 2022, the company's board of directors authorized a new share repurchase program of up to an additional $2.0 billion in share repurchases of the company's common stock (the "2022 Repurchase Program"). By its terms, repurchases under the 2022 Repurchase Program will commence upon completion of the 2021 Repurchase Program and will expire when we have used all authorized funds for repurchases. As of September 30, 2022, there have been no repurchases under the 2022 Repurchase Program and the company's total outstanding share repurchase authorization was $3.1 billion.

During the first quarter of 2021, the company entered into an accelerated share repurchase (ASR) agreement with Goldman Sachs & Co. LLC (Goldman Sachs) to repurchase $2.0 billion of the company's common stock as part of the 2018 Repurchase Program. Under the agreement, we made a payment of $2.0 billion to Goldman Sachs and received an initial delivery of 5.9 million shares valued at $1.7 billion that were immediately canceled by the company. The remaining balance of $300 million was settled on June 1, 2021 with a final delivery of 0.2 million shares from Goldman Sachs. The final average purchase price was $327.29 per share.

During the fourth quarter of 2021, the company entered into an ASR agreement with Goldman Sachs to repurchase $500 million of the company's common stock as part of the 2021 Repurchase Program. Under the agreement, we made a payment of $500 million to Goldman Sachs and received an initial delivery of 1.2 million shares valued at $425 million that were immediately canceled by the company. The remaining balance of $75 million was settled on February 1, 2022 with a final delivery of 0.1 million shares from Goldman Sachs. The final average purchase price was $374.79 per share.

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. During the nine months ended September 30, 2022, the company repurchased $1.0 billion of its outstanding shares.

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

| | | | | | Shares Repurchased (in millions) | |
|---|---|---|---|---|---|---|
| | | | | | Nine Months Ended September 30 | |
| Repurchase Program Authorization Date | Amount Authorized (in millions) | Total Shares Retired (in millions) | Average Price Per Share[1] | Date Completed | **2022** | 2021 |
| December 4, 2018 | $ 3,000 | 8.9 | $ 337.18 | October 2021 | — | 8.1 |
| January 25, 2021 | $ 3,000 | 4.6 | 407.74 | | **2.4** | — |
| January 24, 2022 | $ 2,000 | — | — | | — | — |

[1] Includes commissions paid.

**Dividends on Common Stock**
In May 2022, the company increased the quarterly common stock dividend 10 percent to $1.73 per share from the previous amount of $1.57 per share.

## 3. INCOME TAXES

| | Three Months Ended September 30 | | Nine Months Ended September 30 | |
|---|---|---|---|---|
| *$ in millions* | **2022** | 2021 | **2022** | 2021 |
| Federal and foreign income tax expense | **$ 175** | $ 212 | **$ 568** | $ 1,298 |
| *Effective income tax rate* | **16.1 %** | 16.6 % | **16.8 %** | 23.2 % |

*Current Quarter*
The third quarter 2022 effective tax rate (ETR) decreased to 16.1 percent from 16.6 percent in the prior year period. The company's third quarter 2022 ETR includes benefits of $42 million for research credits and $16 million for foreign derived intangible income (FDII). The company's third quarter 2021 ETR included benefits of $43 million for research credits and $12 million for FDII.

*Year to Date*
The year to date 2022 ETR decreased to 16.8 percent from 23.2 percent in the prior year period. The company's year to date 2022 ETR includes benefits of $124 million for research credits and $46 million for FDII. The company's

year to date 2021 ETR included benefits of $142 million for research credits and $32 million for FDII. The year to date 2021 ETR was impacted by additional federal income taxes resulting from the IT services divestiture, as well as a change in tax revenue recognition on certain long-term contracts, which increased taxable income in years prior to the 2017 Tax Cuts and Jobs Act at a rate above the current statutory rate.

Taxes receivable, which are included in Prepaid expenses and other current assets in the unaudited condensed consolidated statements of financial position, were $627 million as of September 30, 2022 and $571 million as of December 31, 2021.

The company has recorded unrecognized tax benefits related to our methods of accounting associated with the timing of revenue recognition and related costs and the 2017 Tax Cuts and Jobs Act, which includes related final revenue recognition regulations issued in December 2020 under IRC Section 451(b) and procedural guidance issued in August 2021. As of September 30, 2022, we have approximately $1.7 billion in unrecognized tax benefits, including $449 million related to our position on IRC Section 451(b). If these matters, including our position on IRC Section 451(b), are unfavorably resolved, there could be a material impact on our future cash flows. It is reasonably possible that within the next 12 months our unrecognized tax benefits related to these matters may increase by approximately $120 million.

Our current unrecognized tax benefits, which are included in Other current liabilities in the unaudited condensed consolidated statements of financial position, were $657 million and $590 million as of September 30, 2022 and December 31, 2021, respectively, with the remainder of our unrecognized tax benefits included within Other non-current liabilities.

We file income tax returns in the U.S. federal jurisdiction and in various state and foreign jurisdictions. The Northrop Grumman 2014-2020 federal tax returns and refund claims related to its 2007-2016 federal tax returns are currently under Internal Revenue Service (IRS) examination. During the second quarter of 2022, the company’s 2014-2016 federal income tax returns and refund claims related to its 2007-2016 federal tax returns reverted back from IRS Appeals to IRS examination for additional factual review. In addition, legacy Orbital ATK (OATK) federal tax returns for the years ended March 31, 2014 and 2015, the nine-month transition period ended December 31, 2015 and calendar years 2016-2017 are currently under review by the IRS Appeals Office. It is reasonably possible that within the next twelve months, unrecognized tax benefits claimed in legacy OATK’s 2014 to 2017 tax years may decline by up to $110 million through administrative resolution with IRS Appeals.

## 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 using internal models based on observable market inputs.

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, 2022** | | | | December 31, 2021 | | | |
|---|---|---|---|---|---|---|---|---|
| *$ in millions* | **Level 1** | **Level 2** | **Level 3** | **Total** | Level 1 | Level 2 | Level 3 | Total |
| **Financial Assets** | | | | | | | | |
| Marketable securities | **$ 299** | **$ —** | **$ 8** | **$ 307** | $ 393 | $ 1 | $ 7 | $ 401 |
| Marketable securities valued using NAV | | | | **13** | | | | 17 |
| Total marketable securities | **299** | **—** | **8** | **320** | 393 | 1 | 7 | 418 |
| Derivatives | **—** | **4** | **—** | **4** | — | (1) | — | (1) |

The notional value of the company’s foreign currency forward contracts at September 30, 2022 and December 31, 2021 was $128 million and $120 million, respectively. At September 30, 2022 and December 31, 2021, no portion of the notional value was designated as a cash flow hedge.

The derivative fair values and related unrealized gains/losses at September 30, 2022 and December 31, 2021 were not material.

There were no transfers of financial instruments into or out of Level 3 of the fair value hierarchy during the nine months ended September 30, 2022.

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 $11.9 billion and $15.1 billion as of September 30, 2022 and December 31, 2021, 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 current portion of long-term debt is recorded in Other current liabilities in the unaudited condensed consolidated statements of financial position.

On September 2, 2021, the company completed an exchange offer to eligible holders of the outstanding notes of our direct wholly owned subsidiary, Northrop Grumman Systems Corporation ("NGSC") maturing through 2036. An aggregate principal amount of $422 million of the NGSC notes was exchanged for $422 million of unregistered Northrop Grumman Corporation notes (the "Unregistered Notes") with the same interest rates and maturity dates as the NGSC notes exchanged. Because the debt instruments are not substantially different, the exchange was treated as a debt modification for accounting purposes with no gain or loss recognized.

On June 15, 2022, the company completed a registered exchange offer pursuant to which the company exchanged an aggregate principal amount of $414 million of the Unregistered Notes for $414 million of new notes registered under the Securities Act of 1933, as amended, (the "Registered Notes") with the same interest rates and maturity dates as the Unregistered Notes.

Because the debt instruments were not substantially different in either of the exchange offers, both exchanges were treated as debt modifications for accounting purposes with no gain or loss recognized.

*Repayments of Senior Notes*

In March 2021, the company repaid $700 million of 3.50 percent unsecured notes upon maturity.

In March 2021, the company redeemed $1.5 billion of 2.55 percent unsecured notes due October 2022. The company recorded a pre-tax charge of $54 million principally related to the premium paid on the redemption, which was recorded in Other, net in the unaudited condensed consolidated statements of earnings and comprehensive income.

## 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 were delivered. The company's lawsuit 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. In the course of the litigation, the United States subsequently amended its counterclaim, reducing it to seek approximately $193 million. 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 February 3, 2020, after extensive discovery and motions practice, the parties commenced what was expected to be a seven-week trial. After COVID-19-related interruptions, trial concluded on March 5, 2021. On October 12, 2021, the parties completed post-trial briefing, and on December 8, 2021 the court held a post-trial oral argument. On June 27, 2022, the judge issued a decision concluding that the company was entitled to approximately $63 million for unpaid portions of the contract price and $5 million in additional damages, as well as interest, which the company estimated was approximately $16 million (as of September 30, 2022) and such additional interest as may accrue until the date the government makes payment. The judge also concluded that the government was entitled to approximately $1 million in off-setting damages. On July 18, 2022, the government filed a motion for reconsideration, arguing that the government is entitled to further damages of approximately $57 million for particular periods of delay. On October 17, 2022, the court denied the government's motion for reconsideration, making clear the government was not entitled to any such damages for delay. The court also determined that the past interest due to the company amounted to approximately $16 million. On October 19, 2022, the court entered judgment in the company's favor in the amount of approximately $83 million, plus a currently estimated approximately $7 thousand of additional interest to accrue per day until the date the government makes payment. The parties have until December 19, 2022 to file an appeal.

The company is 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, the company has worked closely with the United States Navy, the United States Environmental Protection Agency, the New York State Department of Environmental Conservation (NYSDEC), the New York State Department of Health and other federal, state and local governmental authorities, to address legacy environmental conditions in Bethpage. In December 2019, the State of New York issued an Amended Record of Decision seeking to impose additional remedial requirements beyond measures the company previously had been taking; the State also communicated that it was assessing potential natural resource damages. In December 2020, the parties reached a tentative agreement regarding the steps the company would take to implement the State's Amended Record of Decision and to resolve certain potential other claims, including for natural resource damages. On September 22, 2021, the State of New York issued for public comment a new consent decree reflecting the agreement. On December 7, 2021, the public comment period closed. On August 3, 2022, the court approved the consent decree. We have also reached agreements with the Department of Defense and the Bethpage and South Farmingdale Water Districts to resolve claims involving these parties. On May 24, 2022, the court approved the agreement with the Bethpage Water District, and on August 2, 2022, the court approved the agreement with the Department of Defense. The agreement with the South Farmingdale Water District does not require court approval.

We have incurred, and expect to continue to incur, as included in Note 6, substantial remediation costs related to the legacy Bethpage environmental conditions. It is also possible that applicable remediation standards and other requirements to which we are subject may continue to change, and our costs may increase materially. In addition to disputes and legal proceedings related to environmental conditions and remediation at the site, we are a party to various individual lawsuits and a putative class action alleging personal injury and property damage in the Eastern District of New York. The filed individual lawsuits have been stayed, pending a court decision on class certification. We are also a party, and may become a party, to other lawsuits brought by insurance carriers and other parties. We cannot at this time predict or reasonably estimate the potential cumulative outcomes or ranges of possible liability of these Bethpage lawsuits.

In June 2018, the FTC issued a Decision and Order enabling the company's acquisition of OATK to proceed and providing generally for the company to continue to make solid rocket motors available to competing missile primes on a non-discriminatory basis. The company has taken and continues to take robust actions to help ensure compliance with the terms of the Order. Similarly, the Compliance Officer, appointed under the Order, and the FTC have taken and continue to take various actions to oversee compliance. In October 2019, the company received a civil investigative demand (CID) from the FTC requesting certain information relating to a potential issue regarding the company's compliance with the Order in connection with a then pending missile competition. The company promptly provided information in response to the request. In late 2021, the company resumed discussions with staff at the FTC regarding our response and their views on compliance issues. Most recently, the company received and will be responding to a follow-on CID. We cannot predict the outcome of those discussions, but we do not believe they are likely to have a material adverse effect on the company's unaudited condensed consolidated financial position as of September 30, 2022, or its annual results of operations and/or cash flows. We believe the company has been and continues to be in compliance with the Order.

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, 2022, 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, 2022, 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. 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 submitted a formal response on July 31, 2020, which we believe demonstrates the appropriateness of the assumptions used. On November 24, 2020, the government replied to the company's response, disagreeing with our position and requesting additional input, which we provided on February 22, 2021. We continue to exchange correspondence and engage with the government on this matter, including responding to requests for and providing additional information. 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, 2022 and December 31, 2021:

| *$ in millions* | Accrued Costs(1)(2) | Reasonably Possible Future Costs in Excess of Accrued Costs(2) | Deferred Costs(3) |
|---|---|---|---|
| **September 30, 2022** | **$ 584** | **$ 357** | **$ 503** |
| December 31, 2021 | 572 | 363 | 486 |

(1) As of September 30, 2022, $200 million is recorded in Other current liabilities and $384 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, 2022, $178 million is deferred in Prepaid expenses and other current assets and $325 million is deferred in Other non-current assets. These amounts are evaluated for recoverability on a routine basis.

Although management cannot predict whether (i) new information gained as our environmental remediation projects progress, (ii) changes in remediation standards or other requirements to which we are subject, or (iii) other changes in facts and circumstances will materially affect the estimated liability accrued, 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, 2022, or its annual results of operations and/or cash flows.

**Financial Arrangements**

In the ordinary course of business, the company uses standby letters of credit and guarantees issued by commercial banks and surety bonds issued principally by insurance companies to guarantee the performance on certain obligations. At September 30, 2022, there were $393 million of stand-by letters of credit and guarantees and $78 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, 2022, there were no commercial paper borrowings outstanding.

**Credit Facilities**

In August 2022, the company entered into a new five-year senior unsecured revolving credit facility in an aggregate principal amount of $2.5 billion (the "2022 Credit Agreement"). The 2022 Credit Agreement replaced the company's prior five-year, $2.0 billion revolving credit facility entered into on August 17, 2018 and as amended on October 17, 2019. The revolving credit facility established under the 2022 Credit Agreement 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 2022 Credit Agreement. At September 30, 2022, there were no borrowings outstanding under this facility.

The 2022 Credit Agreement contains generally customary terms and conditions, including covenants restricting the company's ability to sell all or substantially all of its assets, merge or consolidate with another entity or undertake other fundamental changes and incur liens. The company also cannot permit the ratio of its debt to capitalization (as set forth in the credit agreement) to exceed 65 percent.

At September 30, 2022, 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* | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 |
| **Components of net periodic benefit cost (benefit)** | | | | | | | | |
| Service cost | **$ 92** | $ 104 | **$ 2** | $ 4 | **$ 276** | $ 311 | **$ 6** | $ 12 |
| Interest cost | **285** | 263 | **12** | 13 | **853** | 790 | **36** | 40 |
| Expected return on plan assets | **(661)** | (627) | **(28)** | (26) | **(1,982)** | (1,884) | **(83)** | (79) |
| Amortization of prior service (credit) cost | **—** | (3) | **—** | — | **—** | (7) | **(1)** | (1) |
| **Net periodic benefit cost (benefit)** | **$ (284)** | $ (263) | **$ (14)** | $ (9) | **$ (853)** | $ (790) | **$ (42)** | $ (28) |

### 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* | **2022** | 2021 | **2022** | 2021 |
| Defined benefit pension plans | **$ 26** | $ 26 | **$ 77** | $ 79 |
| OPB plans | **9** | 8 | **29** | 29 |
| Defined contribution plans | **108** | 99 | **429** | 476 |

## 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* | **2022** | 2021 |
| RSRs granted | **0.1** | 0.1 |
| RPSRs granted | **0.2** | 0.2 |
| Grant date aggregate fair value | **$ 94** | $ 89 |

RSRs typically vest on the third anniversary of the grant date, while RPSRs generally vest and pay out based on the achievement of certain performance 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* | **2022** | 2021 |
| Minimum aggregate payout amount | **$ 32** | $ 31 |
| Maximum aggregate payout amount | **183** | 178 |

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 certain performance metrics over a three-year period.

## 9. SEGMENT INFORMATION

The following table presents sales and operating income by segment:

| | Three Months Ended September 30 | | Nine Months Ended September 30 | |
|---|---|---|---|---|
| *$ in millions* | **2022** | 2021 | **2022** | 2021 |
| **Sales** | | | | |
| Aeronautics Systems | **$ 2,537** | $ 2,725 | **$ 7,774** | $ 8,628 |
| Defense Systems | **1,345** | 1,409 | **3,922** | 4,398 |
| Mission Systems | **2,456** | 2,436 | **7,469** | 7,613 |
| Space Systems | **3,163** | 2,681 | **8,997** | 7,950 |
| Intersegment eliminations | **(530)** | (531) | **(1,593)** | (1,561) |
| Total sales | **8,971** | 8,720 | **26,569** | 27,028 |
| **Operating income** | | | | |
| Aeronautics Systems | **262** | 265 | **827** | 873 |
| Defense Systems | **158** | 175 | **481** | 529 |
| Mission Systems | **368** | 372 | **1,166** | 1,177 |
| Space Systems | **290** | 288 | **861** | 865 |
| Intersegment eliminations | **(71)** | (65) | **(218)** | (197) |
| **Total segment operating income** | **1,007** | 1,035 | **3,117** | 3,247 |
| FAS/CAS operating adjustment | **(55)** | 61 | **(152)** | 98 |
| Unallocated corporate (expense) income | **(108)** | (53) | **(270)** | 1,564 |
| Total operating income | **$ 844** | $ 1,043 | **$ 2,695** | $ 4,909 |

**FAS/CAS Operating 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 applicable Federal Acquisition Regulation (FAR) and U.S. Government Cost Accounting Standards (CAS) requirements. The FAS/CAS operating 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) Income**

Unallocated corporate (expense) income includes the portion of corporate costs not considered allowable or allocable under the applicable FAR and CAS requirements, and therefore not allocated to the segments, such as changes in deferred state income taxes and a portion of management and administration, legal, environmental, compensation, retiree benefits, advertising and other corporate unallowable costs. Unallocated corporate (expense) income 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.

During the first quarter of 2021, the $2.0 billion pre-tax gain on the sale of our IT services business and $192 million of unallowable state taxes and transaction costs associated with the divestiture were recorded in Unallocated corporate (expense) income.

**Disaggregation of Revenue**

| *Sales by Customer Type* | Three Months Ended September 30 | | | | Nine Months Ended September 30 | | | |
|---|---|---|---|---|---|---|---|---|
| | **2022** | | 2021 | | **2022** | | 2021 | |
| *$ in millions* | **$** | **%[3]** | $ | %[3] | **$** | **%[3]** | $ | %[3] |
| **Aeronautics Systems** | | | | | | | | |
| U.S. government[1] | **$ 2,138** | **85 %** | $ 2,312 | 85 % | **$ 6,564** | **85 %** | $ 7,366 | 85 % |
| International[2] | **341** | **13 %** | 360 | 13 % | **1,012** | **13 %** | 1,110 | 13 % |
| Other customers | **—** | **— %** | 5 | — % | **17** | **— %** | 15 | — % |
| Intersegment sales | **58** | **2 %** | 48 | 2 % | **181** | **2 %** | 137 | 2 % |
| Aeronautics Systems sales | **2,537** | **100 %** | 2,725 | 100 % | **7,774** | **100 %** | 8,628 | 100 % |
| **Defense Systems** | | | | | | | | |
| U.S. government[1] | **820** | **62 %** | 877 | 62 % | **2,369** | **61 %** | 2,749 | 63 % |
| International[2] | **312** | **23 %** | 316 | 22 % | **933** | **24 %** | 1,002 | 23 % |
| Other customers | **19** | **1 %** | 10 | 1 % | **53** | **1 %** | 61 | 1 % |
| Intersegment sales | **194** | **14 %** | 206 | 15 % | **567** | **14 %** | 586 | 13 % |
| Defense Systems sales | **1,345** | **100 %** | 1,409 | 100 % | **3,922** | **100 %** | 4,398 | 100 % |
| **Mission Systems** | | | | | | | | |
| U.S. government[1] | **1,729** | **71 %** | 1,756 | 72 % | **5,325** | **72 %** | 5,491 | 71 % |
| International[2] | **452** | **18 %** | 417 | 17 % | **1,300** | **17 %** | 1,338 | 18 % |
| Other customers | **25** | **1 %** | 19 | 1 % | **89** | **1 %** | 49 | 1 % |
| Intersegment sales | **250** | **10 %** | 244 | 10 % | **755** | **10 %** | 735 | 10 % |
| Mission Systems sales | **2,456** | **100 %** | 2,436 | 100 % | **7,469** | **100 %** | 7,613 | 100 % |
| **Space Systems** | | | | | | | | |
| U.S. government[1] | **2,967** | **94 %** | 2,507 | 94 % | **8,473** | **94 %** | 7,401 | 93 % |
| International[2] | **105** | **3 %** | 92 | 3 % | **261** | **3 %** | 301 | 4 % |
| Other customers | **63** | **2 %** | 49 | 2 % | **173** | **2 %** | 145 | 2 % |
| Intersegment sales | **28** | **1 %** | 33 | 1 % | **90** | **1 %** | 103 | 1 % |
| Space Systems sales | **3,163** | **100 %** | 2,681 | 100 % | **8,997** | **100 %** | 7,950 | 100 % |
| **Total** | | | | | | | | |
| U.S. government[1] | **7,654** | **86 %** | 7,452 | 85 % | **22,731** | **86 %** | 23,007 | 85 % |
| International[2] | **1,210** | **13 %** | 1,185 | 14 % | **3,506** | **13 %** | 3,751 | 14 % |
| Other customers | **107** | **1 %** | 83 | 1 % | **332** | **1 %** | 270 | 1 % |
| **Total Sales** | **$ 8,971** | **100 %** | $ 8,720 | 100 % | **$ 26,569** | **100 %** | $ 27,028 | 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 | | | |
|---|---|---|---|---|---|---|---|---|
| | **2022** | | 2021 | | **2022** | | 2021 | |
| *$ in millions* | **$** | **%[1]** | $ | %[1] | **$** | **%[1]** | $ | %[1] |
| **Aeronautics Systems** | | | | | | | | |
| Cost-type | **$ 1,185** | **48 %** | $ 1,358 | 51 % | **$ 3,678** | **48 %** | $ 4,110 | 48 % |
| Fixed-price | **1,294** | **52 %** | 1,319 | 49 % | **3,915** | **52 %** | 4,381 | 52 % |
| Intersegment sales | **58** | | 48 | | **181** | | 137 | |
| Aeronautics Systems sales | **2,537** | | 2,725 | | **7,774** | | 8,628 | |
| **Defense Systems** | | | | | | | | |
| Cost-type | **366** | **32 %** | 433 | 36 % | **1,075** | **32 %** | 1,376 | 36 % |
| Fixed-price | **785** | **68 %** | 770 | 64 % | **2,280** | **68 %** | 2,436 | 64 % |
| Intersegment sales | **194** | | 206 | | **567** | | 586 | |
| Defense Systems sales | **1,345** | | 1,409 | | **3,922** | | 4,398 | |
| **Mission Systems** | | | | | | | | |
| Cost-type | **881** | **40 %** | 746 | 34 % | **2,591** | **39 %** | 2,419 | 35 % |
| Fixed-price | **1,325** | **60 %** | 1,446 | 66 % | **4,123** | **61 %** | 4,459 | 65 % |
| Intersegment sales | **250** | | 244 | | **755** | | 735 | |
| Mission Systems sales | **2,456** | | 2,436 | | **7,469** | | 7,613 | |
| **Space Systems** | | | | | | | | |
| Cost-type | **2,192** | **70 %** | 1,931 | 73 % | **6,271** | **70 %** | 5,800 | 74 % |
| Fixed-price | **943** | **30 %** | 717 | 27 % | **2,636** | **30 %** | 2,047 | 26 % |
| Intersegment sales | **28** | | 33 | | **90** | | 103 | |
| Space Systems sales | **3,163** | | 2,681 | | **8,997** | | 7,950 | |
| **Total** | | | | | | | | |
| Cost-type | **4,624** | **52 %** | 4,468 | 51 % | **13,615** | **51 %** | 13,705 | 51 % |
| Fixed-price | **4,347** | **48 %** | 4,252 | 49 % | **12,954** | **49 %** | 13,323 | 49 % |
| **Total Sales** | **$ 8,971** | | $ 8,720 | | **$ 26,569** | | $ 27,028 | |

[1] Percentages calculated based on external customer sales.

NORTHROP GRUMMAN CORPORATION

| *Sales by Geographic Region* | Three Months Ended September 30 | | | | Nine Months Ended September 30 | | | |
|---|---|---|---|---|---|---|---|---|
| | **2022** | | 2021 | | **2022** | | 2021 | |
| *$ in millions* | **$** | **%[2]** | $ | %[2] | **$** | **%[2]** | $ | %[2] |
| **Aeronautics Systems** | | | | | | | | |
| United States | **$ 2,138** | **85 %** | $ 2,317 | 87 % | **$ 6,581** | **87 %** | $ 7,381 | 86 % |
| Asia/Pacific | **165** | **7 %** | 239 | 9 % | **560** | **7 %** | 722 | 9 % |
| Europe | **163** | **7 %** | 108 | 4 % | **413** | **5 %** | 335 | 4 % |
| All other[1] | **13** | **1 %** | 13 | — % | **39** | **1 %** | 53 | 1 % |
| Intersegment sales | **58** | | 48 | | **181** | | 137 | |
| Aeronautics Systems sales | **2,537** | | 2,725 | | **7,774** | | 8,628 | |
| **Defense Systems** | | | | | | | | |
| United States | **839** | **72 %** | 887 | 74 % | **2,422** | **72 %** | 2,810 | 74 % |
| Asia/Pacific | **112** | **10 %** | 107 | 9 % | **340** | **10 %** | 336 | 9 % |
| Europe | **101** | **9 %** | 78 | 6 % | **297** | **9 %** | 233 | 6 % |
| All other[1] | **99** | **9 %** | 131 | 11 % | **296** | **9 %** | 433 | 11 % |
| Intersegment sales | **194** | | 206 | | **567** | | 586 | |
| Defense Systems sales | **1,345** | | 1,409 | | **3,922** | | 4,398 | |
| **Mission Systems** | | | | | | | | |
| United States | **1,754** | **79 %** | 1,775 | 81 % | **5,414** | **81 %** | 5,540 | 81 % |
| Asia/Pacific | **159** | **7 %** | 114 | 5 % | **435** | **6 %** | 372 | 5 % |
| Europe | **210** | **10 %** | 233 | 11 % | **654** | **10 %** | 744 | 11 % |
| All other[1] | **83** | **4 %** | 70 | 3 % | **211** | **3 %** | 222 | 3 % |
| Intersegment sales | **250** | | 244 | | **755** | | 735 | |
| Mission Systems sales | **2,456** | | 2,436 | | **7,469** | | 7,613 | |
| **Space Systems** | | | | | | | | |
| United States | **3,030** | **97 %** | 2,556 | 97 % | **8,646** | **97 %** | 7,546 | 97 % |
| Asia/Pacific | **33** | **1 %** | 10 | — % | **86** | **1 %** | 39 | — % |
| Europe | **69** | **2 %** | 79 | 3 % | **165** | **2 %** | 256 | 3 % |
| All other[1] | **3** | **— %** | 3 | — % | **10** | **— %** | 6 | — % |
| Intersegment sales | **28** | | 33 | | **90** | | 103 | |
| Space Systems sales | **3,163** | | 2,681 | | **8,997** | | 7,950 | |
| **Total** | | | | | | | | |
| United States | **7,761** | **87 %** | 7,535 | 87 % | **23,063** | **87 %** | 23,277 | 86 % |
| Asia/Pacific | **469** | **5 %** | 470 | 5 % | **1,421** | **5 %** | 1,469 | 5 % |
| Europe | **543** | **6 %** | 498 | 6 % | **1,529** | **6 %** | 1,568 | 6 % |
| All other[1] | **198** | **2 %** | 217 | 2 % | **556** | **2 %** | 714 | 3 % |
| **Total Sales** | **$ 8,971** | | $ 8,720 | | **$ 26,569** | | $ 27,028 | |

[1] All other is principally comprised of 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, 2022, 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, 2022 and 2021, and of cash flows for the nine-month periods ended September 30, 2022 and 2021, 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, 2021, 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 26, 2022, we expressed an unqualified opinion on those consolidated financial statements. In our opinion, the information set forth in the accompanying condensed consolidated statement of financial position as of December 31, 2021, 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 26, 2022

## 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 deliver a broad range of products, services and solutions to United States (U.S.) and international customers, and principally to the U.S Department of Defense (DoD) and intelligence community. Our broad portfolio is aligned to support national security priorities and our solutions equip our customers with capabilities they need to connect, protect and advance humanity.

The company is a leading provider of space systems, advanced aircraft, missile defense, advanced weapons and long-range fires capabilities, mission systems, networking and communications, strategic deterrence systems, and breakthrough technologies, such as artificial intelligence, advanced computing and cyber. We are focused on competing and winning programs that enable continued growth, performing on our commitments and affordably delivering capability our customers need. With the investments we've made in advanced technologies, combined with our talented workforce and digital transformation capabilities, Northrop Grumman is well positioned to meet our customers' needs today and in the future.

The following discussion should be read along with the financial statements included in this Form 10-Q, as well as our 2021 Annual Report on Form 10-K, which provides additional information on our business and the environment in which we operate and our operating results.

**Disposition of IT and Mission Support Services Business**

Effective January 30, 2021 (the “Divestiture date”), we completed the sale of our IT and mission support services business (the “IT services divestiture”) for $3.4 billion in cash and recorded a pre-tax gain of $2.0 billion. The IT and mission support services business was comprised of the majority of the former IS&S division of Defense Systems (excluding the Vinnell Arabia business); select cyber, intelligence and missions support programs, which were part of the former CIMS division of Mission Systems; and the former Space Technical Services business unit of Space Systems. Operating results include sales and operating income for the IT and mission support services business prior to the Divestiture date.

### COVID-19

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. In the more than two years since then, the pandemic (including the first and subsequent variants of COVID-19) has dramatically impacted the global health and economic environments, including millions of confirmed cases and deaths, business slowdowns or shutdowns, labor shortfalls, supply chain challenges, regulatory challenges, inflationary pressures and market volatility. We discussed in some detail in our Annual Report on Form 10-K for the fiscal years ended December 31, 2020 and 2021, as well as interim Form 10-Qs, the pandemic, its impacts and risks, and actions taken up to the time of each filing. In this Form 10-Q, we provide a further update.

At a macro level, the number of hospitalizations and deaths, in the U.S. in particular, have generally eased in 2022, as more people are fully vaccinated, and communities have continued to open up. While it, of course, remains unclear whether that trajectory will continue, there is reason for optimism. The company continues to work to monitor and address the pandemic and related developments, including the impact on our company, our employees, our customers, our suppliers and our communities. Our goals have been, and continue to be, to lessen the potential adverse impacts, both health and economic, and to continue to position the company for long-term success. Like the communities in which we operate, our actions have varied, and will continue to vary, depending on the spread of COVID-19 and applicable government requirements, and the needs of our stakeholders.

During the third quarter of 2022, COVID-19 case rates and the health and economic impacts of the pandemic continued to fluctuate in different communities in the U.S. and globally, particularly with the spread of new variants. However, direct COVID-19-related impacts on our business continued generally to decline, including in the areas of employee absenteeism and leave-taking. While we cannot predict the future course of the pandemic, we are not currently assuming significant additional direct COVID-19-related impacts on our 2022 financial results.

During the third quarter of 2022, we continued to see a prolonged impact on the economy, our industry, and our company, with ongoing labor challenges, supply chain disruption, and inflation, among other impacts. Although we are working actively to address and mitigate these impacts, the broader macroeconomic environment, including, in particular, inflationary pressures and extended material lead times, continued adversely to affect the company's third quarter results (including sales, net earnings and cash).

For further information on the pandemic and the potential impact to the company of COVID-19, see "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Liquidity and Capital Resources" below and "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our 2021 Annual Report on Form 10-K.

**Global Security and Economic Environment**

The U.S. and its allies continue to face a global security environment of heightened tensions and instability, threats from state and non-state actors, including major global powers, as well as terrorist organizations, emerging nuclear tensions, diverse regional security concerns and political instability. The conflict in Ukraine has increased those tensions and instability, highlighted threats and increased demand, as well as further disrupted global supply chains and added costs. The market for defense products, services and solutions globally is driven by these complex and evolving security challenges, considered in the broader context of political and socioeconomic circumstances and priorities.

Our operations and financial performance, as well as demand for our products and services, are impacted by global events, including violence and unrest. The same is true for our suppliers and other business partners. We continue to experience an increased demand for certain of our goods and services directly related to the conflict in the Ukraine, in particular, but we have not seen a significant increase in those demands to date. We also continue to experience modest disruption to some of our programs and supply chain, including unanticipated cost growth, as a result of the conflict, particularly with respect to our Commercial Resupply Services contract. But we do not have sizable business dealings in Russia or Ukraine, and do not anticipate significant adverse impacts. We are actively monitoring the situation and exploring both opportunities and risks, including measures to mitigate the risk of future disruption and costs to our programs.

The global geopolitical and economic environments continue to be impacted by uncertainty and stress, and global inflationary pressures. Geopolitical relationships have changed and are continuing to change. Global inflationary pressures are increasing costs, including for various commodities and supplier products. Global economic growth is expected to remain in the low single digits in 2022, reflecting, among other things, the continued impact of and uncertainty surrounding geopolitical tensions globally, financial market volatility, inflation and the COVID-19 pandemic. We expect still further impacts related to the conflict in Ukraine and economic sanctions imposed on Russia. The global economy may also be affected by the residual legal, regulatory and economic impacts of Britain's exit from the European Union. Increased interest rates, raising the cost of borrowing for the government, could impact government spending priorities (in the U.S. and allied countries, in particular), including their demand for defense products. Economic tensions and changes in international trade policies, including higher tariffs on imported goods and materials and renegotiation of free trade agreements, could also impact the global market for defense products, services and solutions.

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

On March 15, 2022, the President signed into law the Consolidated Appropriations Act for FY 2022, which provided full-year funding through September 30, including $782 billion for national defense. This represented nearly $30 billion more than the Administration initially requested for FY 2022, and approximately 6 percent, or $42 billion higher than it was in FY 2021. The Pentagon's portion of the overall national defense budget was $743 billion. In March 2022, Congress also approved $14 billion in emergency aid to support security, economic, and humanitarian assistance for Ukraine and Central European partners. An additional $40 billion in emergency supplemental appropriations was approved by Congress in May 2022. Current and future spending in connection with the conflict in Ukraine and other priorities, global inflation, the national debt and the costs of the pandemic, among other things, in the U.S. and globally, will continue to impact our customers' budgets and priorities, and our industry. We expect the government, our customers and our industry will also continue to face challenges from the macroeconomic environment, including a tight labor market and supply chain disruptions.

The Administration's current budget for FY 2023 proposes $813 billion for national defense programs, and the Pentagon's portion of the overall requested defense budget is $773 billion. On September 30, 2022, Congress enacted a continuing resolution (CR) to carry forward FY 2022 funding levels into FY 2023 while negotiations continue regarding full-year appropriations. The CR also included an additional $12 billion in aid to Ukraine, bringing total appropriations for Ukraine assistance to $39 billion. The CR runs through December 16, 2022, and generally limits U.S. government spending to FY 2022 levels, which for DOD is around 4 percent lower than the amount requested for FY 2023.

It is difficult to predict the specific course of future defense budgets. However, we believe the ongoing conflict in Ukraine, as well as actions in the Pacific region, have highlighted some of the national security threats to our nation and our allies, and the need for strong deterrence and a robust defense capability, as well as impacting our political and economic environment. More generally, the threat to U.S. national security remains very substantial and we believe that our capabilities, particularly in space, C4ISR, missile defense, battle management, hypersonics, counter-hypersonics, survivable aircraft and mission systems should help our customers defend against current and future threats and, as a result, continue to allow for long-term profitable business growth.

The Bipartisan Budget Act of 2019 suspended the debt ceiling through July 31, 2021. In October 2021, the statutory debt limit was increased by $480 billion and, in December 2021, was further increased by $2.5 trillion, which is currently expected to allow the Treasury Department to finance the government into 2023.

During the third quarter of 2022, the Creating Helpful Incentives to Produce Semiconductors (CHIPS) Act of 2022, which includes an advanced manufacturing investment tax credit, among other provisions, and the Inflation Reduction Act of 2022, which includes implementation of a new alternative minimum tax and and a one percent excise tax on share repurchases, among other provisions, were signed into law. We expect the excise tax on share repurchases to impact us beginning in 2023; we are currently evaluating other provisions of the legislation to determine any potentially favorable and/or unfavorable impacts on the company.

The political environment, federal budget and debt ceiling are expected to continue to be the subject of considerable debate, especially in light of the ongoing conflict in Ukraine and the inflationary environment, which could have material impacts on defense spending broadly and the company’s programs in particular.

For further information on the risks we face from the current political and economic environment, see “Risk Factors” in our 2021 Annual Report on Form 10-K.

## CONSOLIDATED OPERATING RESULTS

For purposes of the operating results discussion below, we assess our performance using certain financial measures that are not calculated in accordance with GAAP. Organic sales is defined as total sales excluding sales attributable to the company's IT services divestiture. This measure may be useful to investors and other users of our financial statements as a supplemental measure in evaluating the company’s underlying sales growth as well as in providing an understanding of our ongoing business and future sales trends by presenting the company’s sales before the impact of divestiture activity.

Transaction-adjusted net earnings and transaction-adjusted earnings per share (transaction-adjusted EPS) exclude impacts related to the IT services divestiture, including the gain on sale of the business, associated federal and state income tax expenses, transaction costs, and the make-whole premium for early debt redemption. They also exclude the impact of mark-to-market pension and OPB (“MTM”) benefit/(expense) and related tax impacts, which are generally only recognized during the fourth quarter. These non-GAAP measures may be useful to investors and other users of our financial statements as supplemental measures in evaluating the company’s underlying financial performance by presenting the company’s operating results before the non-operational impact of divestiture activity and pension and OPB actuarial gains and losses. These measures are also consistent with how management views the underlying performance of the business as the impact of the IT services divestiture and MTM accounting are not considered in management’s assessment of the company’s operating performance or in its determination of incentive compensation awards.

We reconcile these non-GAAP financial measures to their most directly comparable GAAP financial measures below. These non-GAAP measures may not be defined and calculated by other companies in the same manner and should not be considered in isolation or as an alternative to operating results presented in accordance with GAAP.

Selected financial highlights are presented in the table below:

| *$ in millions, except per share amounts* | Three Months Ended September 30 | | % Change | Nine Months Ended September 30 | | % Change |
|---|---|---|---|---|---|---|
| | **2022** | 2021 | | **2022** | 2021 | |
| Sales | **$ 8,971** | $ 8,720 | **3 %** | **$ 26,569** | $ 27,028 | **(2)%** |
| Operating costs and expenses | **8,127** | 7,677 | **6 %** | **23,874** | 24,099 | **(1)%** |
| *Operating costs and expenses as a % of sales* | ***90.6 %*** | *88.0 %* | | ***89.9 %*** | *89.2 %* | |
| Gain on sale of business | **—** | — | **NM** | **—** | 1,980 | **NM** |
| Operating income | **844** | 1,043 | **(19)%** | **2,695** | 4,909 | **(45)%** |
| *Operating margin rate* | ***9.4 %*** | *12.0 %* | | ***10.1 %*** | *18.2 %* | |
| Federal and foreign income tax expense | **175** | 212 | **(17)%** | **568** | 1,298 | **(56)%** |
| *Effective income tax rate* | ***16.1 %*** | *16.6 %* | | ***16.8 %*** | *23.2 %* | |
| Net earnings | **915** | 1,063 | **(14)%** | **2,816** | 4,295 | **(34)%** |
| Diluted earnings per share | **$ 5.89** | $ 6.63 | **(11)%** | **$ 18.06** | $ 26.55 | **(32)%** |

**Sales**

The table below reconciles sales to organic sales for the nine months ended September 30, 2022 and 2021. Sales for the three months ended September 30, 2022 and 2021 were not impacted by the sale of the company's IT services business:

| *$ in millions* | Nine Months Ended September 30 | | | | | | Organic sales % change |
|---|---|---|---|---|---|---|---|
| | **2022** | | | 2021 | | | |
| | **Sales** | **IT services sales** | **Organic sales** | Sales | IT services sales | Organic sales | |
| Aeronautics Systems | **$ 7,774** | **$ —** | **$ 7,774** | $ 8,628 | $ — | $ 8,628 | **(10)%** |
| Defense Systems | **3,922** | **—** | **3,922** | 4,398 | (106) | 4,292 | **(9)%** |
| Mission Systems | **7,469** | **—** | **7,469** | 7,613 | (42) | 7,571 | **(1)%** |
| Space Systems | **8,997** | **—** | **8,997** | 7,950 | (16) | 7,934 | **13 %** |
| Intersegment eliminations | **(1,593)** | **—** | **(1,593)** | (1,561) | 2 | (1,559) | |
| Total | **$ 26,569** | **$ —** | **$ 26,569** | $ 27,028 | $ (162) | $ 26,866 | **(1)%** |

*Current* Quarter

Third quarter 2022 sales increased $251 million, or 3 percent , primarily due to 18 percent growth at Space Systems, partially offset by lower sales at Aeronautics Systems and Defense Systems. Third quarter 2022 sales reflect strong demand and improving trends in labor availability, partially offset by supply chain delays.

*Year to Date*

Year to date 2022 sales decreased $459 million, or 2 percent, due, in part, to a $162 million reduction in sales related to the IT services divestiture. Year to date 2022 organic sales decreased $297 million, or 1 percent, primarily due to lower sales at Aeronautics Systems and Defense Systems, partially offset by 13 percent growth at Space Systems.

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 2022 operating income decreased $199 million, or 19 percent, primarily due to a $116 million reduction in the FAS/CAS operating adjustment and $55 million in higher unallocated corporate expense due to a $60 million benefit for insurance settlements recognized in the prior year. Third quarter 2022 operating margin rate declined to 9.4 percent primarily due to the lower FAS/CAS operating adjustment and higher unallocated corporate expense, as well as a lower segment operating margin rate.

Third quarter 2022 general and administrative (G&A) costs as a percentage of sales increased to 10.9 percent from 10.2 percent in the prior year period primarily due to an increase in investments for future business opportunities.

*Year to date*

Year to date 2022 operating income decreased $2.2 billion, or 45 percent, primarily due to a $2.0 billion pre-tax gain on sale and $192 million of unallocated corporate expenses recognized in the prior year associated with the IT services divestiture. Operating income also decreased due to a $250 million reduction in the FAS/CAS operating adjustment and $130 million of lower segment operating income. Year to date 2022 operating margin rate declined to 10.1 percent, largely due to the prior year gain on sale of the IT services business and the lower FAS/CAS operating adjustment.

Year to date 2022 G&A costs as a percentage of sales increased to 11.1 percent from 10.3 percent in the prior year period primarily due to an increase in investments for future business opportunities.

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 2022 ETR decreased to 16.1 percent from 16.6 percent in the prior year period principally due to higher benefits from foreign-derived intangible income. See Note 3 to the financial statements for additional information.

*Year to Date*

The year to date 2022 ETR decreased to 16.8 percent from 23.2 percent in the prior year period. The year to date 2021 ETR was impacted by additional federal income taxes resulting from the IT services divestiture, as well as a change in tax revenue recognition on certain long-term contracts, which increased taxable income in years prior to the 2017 Tax Cuts and Jobs Act at a rate above the current statutory rate. See Note 3 to the financial statements for additional information.

### Net Earnings

The table below reconciles net earnings to transaction-adjusted net earnings:

| | Three Months Ended September 30 | | % | Nine Months Ended September 30 | | % |
|---|---|---|---|---|---|---|
| *$ in millions* | **2022** | 2021 | **Change** | **2022** | 2021 | **Change** |
| Net earnings | **$ 915** | $ 1,063 | **(14)%** | **$ 2,816** | $ 4,295 | **(34)%** |
| Gain on sale of business | **—** | — | **NM** | **—** | (1,980) | **NM** |
| State tax impact[1] | **—** | — | **NM** | **—** | 160 | **NM** |
| Transaction costs | **—** | — | **NM** | **—** | 32 | **NM** |
| Make-whole premium | **—** | — | **NM** | **—** | 54 | **NM** |
| Federal tax impact of items above[2] | **—** | — | **NM** | **—** | 614 | **NM** |
| Transaction adjustment, net of tax | **$ —** | $ — | **NM** | **$ —** | $ (1,120) | **NM** |
| Transaction-adjusted net earnings | **$ 915** | $ 1,063 | **(14)%** | **$ 2,816** | $ 3,175 | **(11)%** |

(1) The state tax impact includes $62 million of incremental tax expense related to $1.2 billion of nondeductible goodwill in the divested business.

(2) The federal tax impact was calculated by applying the 21 percent federal statutory rate to the adjustment items and also includes $250 million of incremental tax expense related to $1.2 billion of nondeductible goodwill in the divested business.

*Current Quarter*
Third quarter 2022 net earnings decreased $148 million, or 14 percent, primarily due to the lower operating income described above, partially offset by a lower effective tax rate.

Year to date 2022 net earnings decreased $1.5 billion, or 34 percent, primarily due to a $1.1 billion after-tax decline associated with the IT services divestiture. Transaction-adjusted net earnings decreased $359 million, or 11 percent, primarily due to the lower operating income described above and $108 million of lower returns on marketable securities related to our non-qualified benefit plans and other non-operating assets, partially offset by a lower effective tax rate.

**Diluted Earnings Per Share**
The table below reconciles diluted earnings per share to transaction-adjusted EPS:

| | Three Months Ended September 30 | | % | Nine Months Ended September 30 | | % |
|---|---|---|---|---|---|---|
| | **2022** | 2021 | **Change** | **2022** | 2021 | **Change** |
| Diluted EPS | **$ 5.89** | $ 6.63 | **(11)%** | **$ 18.06** | $ 26.55 | **(32)%** |
| Gain on sale of business per share | — | — | **NM** | — | (12.24) | **NM** |
| State tax impact per share[1] | — | — | **NM** | — | 0.99 | **NM** |
| Transaction costs per share | — | — | **NM** | — | 0.20 | **NM** |
| Make-whole premium per share | — | — | **NM** | — | 0.33 | **NM** |
| Federal tax impact of line items above per share[2] | — | — | **NM** | — | 3.79 | **NM** |
| Transaction adjustment per share, net of tax | **$ —** | $ — | **NM** | **$ —** | $ (6.93) | **NM** |
| Transaction-adjusted EPS | **$ 5.89** | $ 6.63 | **(11)%** | **$ 18.06** | $ 19.62 | **(8)%** |

(1) The state tax impact includes $62 million of incremental tax expense related to $1.2 billion of nondeductible goodwill in the divested business.

(2) The federal tax impact was calculated by applying the 21 percent federal statutory rate to the adjustment items and also includes $250 million of incremental tax expense related to $1.2 billion of nondeductible goodwill in the divested business.

*Current Quarter*
Third quarter 2022 diluted earnings per share decreased 11 percent, reflecting a 14 percent decrease in net earnings and a 3 percent reduction in weighted-average diluted shares outstanding.

*Year to Date*
Year to date 2022 diluted earnings per share decreased 32 percent, principally due to a $6.93 after-tax decrease associated with the IT services divestiture. Transaction-adjusted earnings per share decreased $1.56, or 8 percent, reflecting an 11 percent decrease in transaction-adjusted net earnings and a 4 percent reduction in weighted-average diluted shares outstanding.

## SEGMENT OPERATING RESULTS

**Basis of Presentation**
The company is aligned in four operating sectors, which also comprise our reportable segments: Aeronautics Systems, Defense Systems, Mission Systems and Space Systems. 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 Multifunction Sensors | Launch & Strategic Missiles |
| Manned Aircraft | Mission Readiness | Maritime/Land Systems & Sensors | Space |
| | | Navigation, Targeting & Survivability | |
| | | Networked Information Solutions | |

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).

**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 measures that reflect the combined operating income of our four segments less the operating income associated with intersegment sales. Segment operating income includes pension expense allocated to our sectors under FAR and CAS and excludes FAS pension service expense and unallocated corporate items (certain corporate-level expenses, which are not considered allowable or allocable under applicable FAR and CAS requirements, 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* | **2022** | 2021 | **% Change** | **2022** | 2021 | **% Change** |
| Operating income | **$ 844** | $ 1,043 | **(19)%** | **$ 2,695** | $ 4,909 | **(45)%** |
| **Reconciliation to segment operating income:** | | | | | | |
| CAS pension expense | **$ (37)** | $ (165) | **(78)%** | **$ (124)** | $ (409) | **(70)%** |
| FAS pension service expense | **92** | 104 | **(12)%** | **276** | 311 | **(11)%** |
| FAS/CAS operating adjustment | **55** | (61) | **(190)%** | **152** | (98) | **(255)%** |
| Gain on sale of business | **—** | — | **— %** | **—** | (1,980) | **NM** |
| IT services divestiture – unallowable state taxes and transaction costs | **—** | — | **— %** | **—** | 192 | **NM** |
| Intangible asset amortization and PP&E step-up depreciation | **60** | 62 | **(3)%** | **181** | 191 | **(5)%** |
| Other unallocated corporate expense (income) | **48** | (9) | **(633)%** | **89** | 33 | **170 %** |
| Unallocated corporate expense (income) | **108** | 53 | **104 %** | **270** | (1,564) | **NM** |
| Segment operating income | **$ 1,007** | $ 1,035 | **(3)%** | **$ 3,117** | $ 3,247 | **(4)%** |
| *Segment operating margin rate* | ***11.2 %*** | *11.9 %* | | ***11.7 %*** | *12.0 %* | |

*Current Quarter*
Third quarter 2022 segment operating income decreased $28 million, or 3 percent due to a lower segment operating margin rate, partially offset by higher sales. Third quarter 2022 segment operating margin rate decreased to 11.2 percent from 11.9 percent principally due to lower net EAC adjustments due, in part, to inflationary pressures.

*Year to Date*
Year to date 2022 segment operating income decreased $130 million, or 4 percent. Year to date 2021 segment operating income included $20 million from the IT services business, as well as a benefit of approximately $100 million due to the impact of lower overhead rates on the company's fixed price contracts. Year to date 2022 segment operating margin rate decreased to 11.7 percent from 12.0 percent principally due to lower net EAC adjustments, including the prior year overhead rate benefit to fixed price contracts noted above.

FAS/CAS Operating Adjustment
Third quarter 2022 and year to date 2022 FAS/CAS operating adjustment decreased primarily due to lower CAS pension expense resulting from favorable plan asset returns in 2021 and changes in certain CAS actuarial assumptions as of December 31, 2021. Third quarter 2021 CAS pension expense also included a $44 million benefit from updated demographic information.

Unallocated Corporate Expense (Income)

*Current Quarter*

The increase in third quarter 2022 unallocated corporate expense is primarily due to a $60 million benefit recognized in the prior year for insurance settlements related to shareholder litigation involving the former Orbital ATK.

*Year to Date*

The change in year to date 2022 unallocated corporate expense (income) is primarily due to the $2.0 billion pre-tax gain on sale and $192 million of unallowable state taxes and transaction costs recognized in the prior year associated with the IT services divestiture. The prior year also benefited from the $60 million of insurance settlements noted above.

*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* | **2022** | 2021 | **2022** | 2021 |
| Favorable EAC adjustments | **$ 306** | $ 273 | **$ 980** | $ 930 |
| Unfavorable EAC adjustments | **(261)** | (164) | **(670)** | (477) |
| Net EAC adjustments | **$ 45** | $ 109 | **$ 310** | $ 453 |

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

| | Three Months Ended September 30 | | Nine Months Ended September 30 | |
|---|---|---|---|---|
| *$ in millions* | **2022** | 2021 | **2022** | 2021 |
| Aeronautics Systems | **$ 27** | $ (2) | **$ 121** | $ 67 |
| Defense Systems | **23** | 37 | **98** | 95 |
| Mission Systems | **14** | 43 | **100** | 192 |
| Space Systems | **(13)** | 33 | **10** | 103 |
| Eliminations | **(6)** | (2) | **(19)** | (4) |
| Net EAC adjustments | **$ 45** | $ 109 | **$ 310** | $ 453 |

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* | **2022** | 2021 | **Change** | **2022** | 2021 | **Change** |
| Sales | **$ 2,537** | $ 2,725 | **(7)%** | **$ 7,774** | $ 8,628 | **(10)%** |
| Operating income | **262** | 265 | **(1)%** | **827** | 873 | **(5)%** |
| *Operating margin rate* | ***10.3 %*** | *9.7 %* | | ***10.6 %*** | *10.1 %* | |

**Sales**

*Current Quarter*

Third quarter 2022 sales decreased $188 million, or 7 percent, due to lower volume in both Manned Aircraft and Autonomous Systems, including restricted programs, E-2, and the Joint Surveillance and Target Attack Radar System (JSTARS) program as it nears completion.

*Year to Date*

Year to date 2022 sales decreased $854 million, or 10 percent, due to lower volume in both Manned Aircraft and Autonomous Systems, including restricted programs, a $134 million decrease on E-2, a $125 million decrease on Global Hawk and lower volume on JSTARS as it nears completion.

**Operating Income**

*Current Quarter*

Third quarter 2022 operating income decreased $3 million, or 1 percent, due to lower sales, partially offset by a higher operating margin rate. Operating margin rate increased to 10.3 percent from 9.7 percent primarily due to higher net favorable EAC adjustments in Manned Aircraft. Prior year results included a $42 million unfavorable EAC adjustment on F-35.

*Year to Date*

Year to date 2022 operating income decreased $46 million, or 5 percent, due to lower sales, partially offset by a higher operating margin rate. Operating margin rate increased to 10.6 percent from 10.1 percent primarily due to a $38 million gain on a property sale and higher net favorable EAC adjustments. Higher net favorable EAC adjustments reflect a $67 million favorable EAC adjustment on the engineering, manufacturing and development phase of the B-21 program largely related to performance incentives, partially offset by lower net EAC adjustments associated with other restricted work. Prior year results included the $42 million unfavorable EAC adjustment on F-35 noted above.

| **DEFENSE SYSTEMS** | Three Months Ended September 30 | | **%** | Nine Months Ended September 30 | | **%** |
|---|---|---|---|---|---|---|
| *$ in millions* | **2022** | 2021 | **Change** | **2022** | 2021 | **Change** |
| Sales | **$ 1,345** | $ 1,409 | **(5)%** | **$ 3,922** | $ 4,398 | **(11)%** |
| Operating income | **158** | 175 | **(10)%** | **481** | 529 | **(9)%** |
| *Operating margin rate* | ***11.7 %*** | *12.4 %* | | ***12.3 %*** | *12.0 %* | |

**Sales**

*Current Quarter*

Third quarter 2022 sales decreased $64 million, or 5 percent, primarily due to lower scope on an international training program, the completion of a Joint Services support program and wind down of the UKAWACS and JSTARS programs, partially offset by higher volume on the NATO Alliance Ground Surveillance In-Service Support (NATO AGS ISS) and advanced fuze programs.

*Year to Date*

Year to date 2022 sales decreased $476 million, or 11 percent, due, in part, to a $106 million reduction in sales related to the IT services divestiture. Year to date 2022 organic sales decreased $370 million, or 9 percent, principally due to a $155 million decrease from lower scope on an international training program, completion of a Joint Services support program, lower volume on the Advanced Anti-Radiation Guided Missile (AARGM) program and wind down of the UKAWACS program, partially offset by higher volume on NATO AGS ISS and advanced fuze programs.

**Operating Income**

*Current Quarter*

Third quarter 2022 operating income decreased $17 million, or 10 percent, primarily due to lower sales and a lower operating margin rate. Operating margin rate decreased to 11.7 percent from 12.4 percent primarily due to lower net favorable EAC adjustments at Battle Management and Missile Systems, partially offset by improved performance in the Mission Readiness business area.

*Year to Date*
Year to date 2022 operating income decreased $48 million, or 9 percent, due, in part, to a $14 million reduction in operating income related to the IT services divestiture. Lower sales volume was partially offset by a higher operating margin rate, which increased to 12.3 percent from 12.0 percent primarily due to improved performance in the Mission Readiness business area.

| **MISSION SYSTEMS** | Three Months Ended September 30 | | % | Nine Months Ended September 30 | | % |
|---|---|---|---|---|---|---|
| *$ in millions* | **2022** | 2021 | **Change** | **2022** | 2021 | **Change** |
| Sales | **$ 2,456** | $ 2,436 | **1 %** | **$ 7,469** | $ 7,613 | **(2)%** |
| Operating income | **368** | 372 | **(1)%** | **1,166** | 1,177 | **(1)%** |
| *Operating margin rate* | ***15.0 %*** | *15.3 %* | | ***15.6 %*** | *15.5 %* | |

**Sales**
*Current Quarter*
Third quarter 2022 sales increased $20 million, or 1 percent, primarily due to higher restricted sales in the Networked Information Solutions business area as well as higher Surface Electronic Warfare Improvement Program (SEWIP) volume. These increases were partially offset by lower volume on Navigation, Targeting and Survivability programs and the Joint Counter Radio-Controlled Improvised Explosive Device Electronic Warfare (JCREW) program.

*Year to Date*
Year to date 2022 sales decreased $144 million, or 2 percent, due, in part, to a $42 million reduction in sales related to the IT services divestiture. Year to date 2022 organic sales decreased $102 million, or 1 percent, primarily due to lower volume on Navigation, Targeting and Survivability programs and the JCREW program. These decreases were partially offset by an increase in restricted sales in the Networked Information Solutions business area.

**Operating Income**
*Current Quarter*
Third quarter 2022 operating income decreased $4 million, or 1 percent, due to a lower operating margin rate, partially offset by higher sales. Operating margin rate decreased to 15.0 percent from 15.3 percent principally due to lower net EAC adjustments, largely in the Maritime/Land Systems & Sensors and Navigation, Targeting & Survivability business areas, partially offset by improved performance on restricted programs at Networked Information Solutions.

*Year to Date*
Year to date 2022 operating income decreased $11 million, or 1 percent, due to lower sales, partially offset by a higher operating margin rate. Operating margin rate increased to 15.6 percent from 15.5 percent principally due to a $33 million benefit recognized in connection with a contract-related legal matter, partially offset by the previously described overhead rate benefit to fixed price contracts in the prior year.

| **SPACE SYSTEMS** | Three Months Ended September 30 | | % | Nine Months Ended September 30 | | % |
|---|---|---|---|---|---|---|
| *$ in millions* | **2022** | 2021 | **Change** | **2022** | 2021 | **Change** |
| Sales | **$ 3,163** | $ 2,681 | **18 %** | **$ 8,997** | $ 7,950 | **13 %** |
| Operating income | **290** | 288 | **1 %** | **861** | 865 | **— %** |
| *Operating margin rate* | ***9.2 %*** | *10.7 %* | | ***9.6 %*** | *10.9 %* | |

**Sales**
*Current Quarter*
Third quarter 2022 sales increased $482 million, or 18 percent, due to higher sales in both business areas. Launch & Strategic Missiles sales increased primarily due to ramp-up on development programs, including a $115 million increase on the Ground Based Strategic Deterrent (GBSD) program and a $103 million increase on the Next Generation Interceptor (NGI) program, as well as higher volume on the GEM63 program in support of Amazon's Project Kuiper. Sales in the Space business area were driven by a $129 million increase due to ramp-up on the Space Development Agency (SDA) Tranche 1 Transport Layer and Tranche 1 Tracking Layer programs awarded in 2022, as well as higher volume on restricted programs and the Commercial Resupply Services (CRS) program.

*Year to Date*

Year to date 2022 sales increased $1.0 billion, or 13 percent, and includes a $16 million reduction in sales related to the IT services divestiture. Year to date 2022 organic sales increased $1.1 billion, or 13 percent, due to higher sales in both business areas. Launch & Strategic Missiles sales increased primarily due to ramp-up on development programs, including a $356 million increase on NGI and a $327 million increase on GBSD. Sales in the Space business area were driven by a $208 million increase on the SDA Tranche 1 Transport Layer and Tranche 1 Tracking Layer programs awarded earlier this year, as well as higher volume on restricted programs and CRS, partially offset by a $116 million decrease in sales for the James Webb Space Telescope after its successful launch in December 2021.

**Operating Income**

*Current Quarter*

Third quarter 2022 operating income was comparable to the prior year period and reflects higher sales and a lower operating margin rate. Operating margin rate decreased to 9.2 percent from 10.7 percent primarily due to lower net EAC adjustments and higher volume on early-stage development programs, such as NGI and GBSD.

*Year to Date*

Year to date 2022 operating income was comparable to the prior period and reflects higher sales and a lower operating margin rate. Operating margin rate decreased to 9.6 percent from 10.9 percent primarily due to lower net EAC adjustments and higher volume on early-stage development programs, such as NGI and GBSD. Prior year results include the previously described overhead rate benefit to fixed price contracts.

## PRODUCT AND SERVICE ANALYSIS

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

| *$ in millions* | Three Months Ended September 30 | | | | Nine Months Ended September 30 | | | |
|---|---|---|---|---|---|---|---|---|
| | **2022** | | 2021 | | **2022** | | 2021 | |
| **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 | $ **1,936** | $ **1,752** | $ 2,233 | $ 2,023 | $ **5,897** | $ **5,289** | $ 7,241 | $ 6,527 |
| Service | **542** | **471** | 444 | 393 | **1,695** | **1,501** | 1,250 | 1,104 |
| Intersegment eliminations | **59** | **52** | 48 | 44 | **182** | **157** | 137 | 124 |
| Total Aeronautics Systems | **2,537** | **2,275** | 2,725 | 2,460 | **7,774** | **6,947** | 8,628 | 7,755 |
| **Defense Systems** | | | | | | | | |
| Product | **634** | **563** | 618 | 532 | **1,842** | **1,605** | 1,939 | 1,687 |
| Service | **517** | **452** | 585 | 523 | **1,513** | **1,334** | 1,873 | 1,664 |
| Intersegment eliminations | **194** | **172** | 206 | 179 | **567** | **502** | 586 | 518 |
| Total Defense Systems | **1,345** | **1,187** | 1,409 | 1,234 | **3,922** | **3,441** | 4,398 | 3,869 |
| **Mission Systems** | | | | | | | | |
| Product | **1,711** | **1,475** | 1,766 | 1,498 | **5,221** | **4,457** | 5,300 | 4,506 |
| Service | **496** | **402** | 426 | 354 | **1,494** | **1,210** | 1,578 | 1,302 |
| Intersegment eliminations | **249** | **211** | 244 | 212 | **754** | **636** | 735 | 628 |
| Total Mission Systems | **2,456** | **2,088** | 2,436 | 2,064 | **7,469** | **6,303** | 7,613 | 6,436 |
| **Space Systems** | | | | | | | | |
| Product | **2,698** | **2,453** | 2,228 | 1,991 | **7,639** | **6,898** | 6,580 | 5,865 |
| Service | **437** | **396** | 420 | 371 | **1,268** | **1,158** | 1,267 | 1,126 |
| Intersegment eliminations | **28** | **24** | 33 | 31 | **90** | **80** | 103 | 94 |
| Total Space Systems | **3,163** | **2,873** | 2,681 | 2,393 | **8,997** | **8,136** | 7,950 | 7,085 |
| **Segment Totals** | | | | | | | | |
| Total Product | $ **6,979** | $ **6,243** | $ 6,845 | $ 6,044 | $ **20,599** | $ **18,249** | $ 21,060 | $ 18,585 |
| Total Service | **1,992** | **1,721** | 1,875 | 1,641 | **5,970** | **5,203** | 5,968 | 5,196 |
| **Total Segment**[1] | $ **8,971** | $ **7,964** | $ 8,720 | $ 7,685 | $ **26,569** | $ **23,452** | $ 27,028 | $ 23,781 |

[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 2022 product sales increased $134 million, or 2 percent, primarily due to an increase in product sales at Space Systems, partially offset by a decrease in product sales at Aeronautics Systems. The increase at Space Systems was driven by ramp-up on development programs including NGI and GBSD. The decrease at Aeronautics Systems was principally due to lower volume on restricted programs, as well as the E-2 program.

Third quarter 2022 product costs increased $199 million, or 3 percent, consistent with the higher product sales described above and reflect lower product margin rates at Space Systems, Mission Systems and Defense Systems principally due to lower net EAC adjustments.

*Year to Date*

Year to date 2022 product sales decreased $461 million, or 2 percent, primarily due to a decrease in product sales at Aeronautics Systems, partially offset by an increase in product sales at Space Systems. The decrease at Aeronautics Systems was principally due to lower volume on restricted programs, as well as the E-2 program. The increase at Space Systems is principally related to ramp-up on development programs including NGI and GBSD, as well as higher volume on the SDA Tranche 1 Transport Layer and Tranche 1 Tracking Layer programs.

Year to date 2022 product costs decreased $336 million, or 2 percent, consistent with the lower product sales.

**Service Sales and Costs**

*Current Quarter*

Third quarter 2022 service sales increased $117 million, or 6 percent, primarily due to an increase in service sales at Aeronautics Systems, principally on restricted programs, and Mission Systems, partially offset by a decrease in service sales at Defense Systems. The decrease at Defense Systems was driven by lower scope on an international training program, the completion of a Joint Services support program and wind down of the UKAWACS program, partially offset by higher volume on the NATO AGS ISS programs.

Third quarter 2022 service costs increased $80 million, or 5 percent, consistent with the higher service sales described above and reflects higher service margin rates at Mission Systems, Defense Systems and Aeronautics Systems.

*Year to Date*

Year to date 2022 service sales were comparable with the prior year period. Higher service sales at Aeronautics Systems were offset by the IT services divestiture as well as lower volume on an international training program and completion of a Joint Services support program at Defense Systems. Sales from the divested IT services business, which were largely included in service sales, were $162 million in the prior year period.

Year to date 2022 service costs were comparable with the prior year period, consistent with the service sales described above.

## 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, 2022 and December 31, 2021:

| | **September 30, 2022** | | | December 31, 2021 | |
|---|---|---|---|---|---|
| *$ in millions* | **Funded** | **Unfunded** | **Total Backlog** | Total Backlog | % Change in 2022 |
| Aeronautics Systems | **$ 8,127** | **$ 10,513** | **$ 18,640** | $ 18,277 | **2 %** |
| Defense Systems | **5,908** | **789** | **6,697** | 6,349 | **5 %** |
| Mission Systems | **10,192** | **4,554** | **14,746** | 14,306 | **3 %** |
| Space Systems | **8,407** | **31,159** | **39,566** | 37,114 | **7 %** |
| Total backlog | **$ 32,634** | **$ 47,015** | **$ 79,649** | $ 76,046 | **5 %** |

**New Awards**

Third quarter and year to date 2022 net awards totaled $8.7 billion and $30.2 billion, respectively, and backlog totaled $79.6 billion. Significant third quarter new awards include $2.8 billion for restricted programs (at Space Systems, Mission Systems and Aeronautics Systems), $1.3 billion for Ground-based Midcourse Defense (GMD) and $0.8 billion for SDA Tranche 1 Tracking Layer.

## LIQUIDITY AND CAPITAL RESOURCES

We are focused on the efficient conversion of operating income into cash and to provide for the company's material cash requirements, including working capital needs, satisfaction of contractual commitments, funding of our pension and OPB plans, investment in our business through capital expenditures, and shareholder return through dividend payments and share repurchases.

At September 30, 2022, we had $1.7 billion in cash and cash equivalents. We expect cash and cash equivalents and cash generated from operating activities, supplemented by borrowings under credit facilities, commercial paper and/or in the capital markets through our shelf registration with the SEC, if needed, to be sufficient to provide liquidity to the company in the short-term and long-term. In August 2022, the company entered into a new five-year senior unsecured credit facility in an aggregate principal amount of $2.5 billion. The 2022 Credit Agreement replaced the company's prior five-year, $2.0 billion revolving credit facility entered into in August 2018. In April 2022, we renewed our one-year $500 million uncommitted credit facility. At September 30, 2022, there were no borrowings outstanding under these credit facilities.

Effective January 30, 2021, we completed the IT services divestiture for $3.4 billion cash. Proceeds were primarily used in the first quarter of 2021 for a $2.0 billion accelerated share repurchase and to fund redemption of $1.5 billion of the company's 2.55 percent unsecured notes due October 2022.

**COVID-19 and the CARES Act**
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. Our first installment of deferred social security taxes of $200 million was paid in the fourth quarter of 2021 and the second installment of $200 million is due in the fourth quarter of 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 sought and may continue to seek recovery for certain COVID-19-related costs under Section 3610 of the CARES Act and through our contract provisions, though it is unclear how much we will be able to recover. 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; it is unclear what steps the DoD will continue to take.

**Internal Revenue Code (IRC) Section 174**
Beginning in 2022, the Tax Cuts and Jobs Act of 2017 ("TCJA") eliminates the option to deduct research and development expenditures in the current year and requires taxpayers to amortize them over five years pursuant to IRC Section 174. We have made federal tax payments of approximately $670 million related to Section 174 during the first nine months of 2022 and expect our full year tax payments to approximate $1.0 billion. Congress is considering, but has not passed, legislation that would defer the amortization requirement to later years. If legislation is passed during the fourth quarter of 2022 and made effective retroactively to January 1, 2022, we expect to immediately file for a refund of taxes paid during 2022, but do not expect we would receive that refund until 2023. As such, we expect the impact of the current Section 174 legislation on our 2022 cash from operations to range between $670 million and $1.0 billion depending on if and when Congress passes additional legislation, whether such legislation is made effective retroactively, the amount of research and development expenditures incurred and paid by the company during 2022, and whether the IRS issues guidance on the provision which differs from our current interpretation.

**Cash Flow Measures**
In addition to our cash position, we consider various cash flow measures in capital deployment decision-making, including cash provided by operating activities and adjusted free cash flow, a non-GAAP measure described in more detail below.

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

| | Nine Months Ended September 30 | | % |
|---|---|---|---|
| *$ in millions* | **2022** | 2021 | **Change** |
| Net earnings | **$ 2,816** | $ 4,295 | **(34)%** |
| Gain on sale of business | **—** | (1,980) | **NM** |
| Non-cash items[(1)] | **(301)** | 56 | **(638)%** |
| Pension and OPB contributions | **(106)** | (108) | **(2)%** |
| Changes in trade working capital | **(1,855)** | (124) | **1,396 %** |
| Other, net | **96** | (14) | **(786)%** |
| Net cash provided by operating activities | **$ 650** | $ 2,125 | **(69)%** |

(1) Includes depreciation and amortization, non-cash lease expense, stock based compensation expense, deferred income taxes and net periodic pension and OPB income.

Year to date 2022 net cash provided by operating activities decreased $1.5 billion as compared with the same period in 2021 principally due to increases in trade working capital. During the nine months ended September 30, 2022, the company made $670 million of federal tax payments related to the current provisions of IRC Section 174. During the nine months ended September 30, 2021, the company made $588 million of tax payments related to the IT services divestiture.

**Adjusted Free Cash Flow**

Adjusted free cash flow, as reconciled in the table below, is a non-GAAP measure defined as net cash provided by or used in operating activities, less capital expenditures, plus proceeds from the sale of equipment to a customer (not otherwise included in net cash provided by or used in operating activities) and the after-tax impact of discretionary pension contributions. Adjusted free cash flow includes proceeds from the sale of equipment to a customer as such proceeds were generated in a customer sales transaction. It also includes the after-tax impact of discretionary pension contributions for consistency and comparability of financial performance. This measure may not be defined and calculated by other companies in the same manner. We use adjusted 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 adjusted free cash flow:

| | Nine Months Ended September 30 | | % |
|---|---|---|---|
| *$ in millions* | **2022** | 2021 | **Change** |
| Net cash provided by operating activities | **$ 650** | $ 2,125 | **(69)%** |
| Capital expenditures | **(803)** | (682) | **18 %** |
| Proceeds from sale of equipment to a customer | **100** | 84 | **19 %** |
| Adjusted free cash flow | **$ (53)** | $ 1,527 | **(103)%** |

Year to date 2022 adjusted free cash flow decreased $1.6 billion as compared with the same period in 2021 principally due to lower net cash provided by operating activities and an increase in capital expenditures.

**Investing Cash Flow**

Year to date 2022 net cash used in investing activities was $663 million compared to net cash provided by investing activities of $2.8 billion in the prior year period principally due to $3.4 billion in cash received from the sale of our IT services business during the first quarter of 2021.

**Financing Cash Flow**

Year to date 2022 net cash used in financing activities decreased $3.9 billion as compared with the same period in 2021 principally due to a $2.2 billion decrease in debt repayments and a $1.7 billion reduction in share repurchases.

*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 2021 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 2021 Annual Report on Form 10-K 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 and the broader economic environment, which have caused and will continue to cause significant challenges, instability and uncertainty. They include:

Industry and Economic Risks

- 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, including related to hostilities and other global events
- 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, including as a result of labor shortages and/or inflationary pressures
- increased competition within our markets and bid protests

Legal and Regulatory Risks

- investigations, claims, disputes, enforcement actions, litigation and/or other legal proceedings
- 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
- changes in procurement and other laws, SEC and other 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
- environmental matters, including unforeseen environmental costs and government and third party claims
- unanticipated changes in our tax provisions or exposure to additional tax liabilities

Business and Operational Risks

- impacts of the COVID-19 pandemic (or future health epidemics, pandemics or similar outbreaks), including potential new variants, case surges or prolonged recovery periods, their effects on the broader environment, and varying related government requirements, on: our business, our ability to maintain a qualified and productive workforce, work slowdowns or stoppages, labor shortages, supply chain and logistics challenges, costs we cannot recover and liabilities for which we are not compensated, performance challenges (including cost and schedule), government funding, changes in government acquisition priorities and processes, government payment rules and practices, insurance challenges, and potential impacts on access to capital, the markets and the fair value of our assets
- cyber and other security threats or disruptions faced by us, our customers or our suppliers and other partners, and changes in related regulations
- our ability to attract and retain a qualified workforce with the required security clearances and requisite skills to meet our performance obligations
- the performance and viability of our subcontractors and suppliers and the availability and pricing of raw materials and components, particularly with inflationary pressures, increased costs, supply chain disruptions, and extended material lead times
- climate change, its impacts on our company, our operations and our stakeholders (employees, suppliers, customers, shareholders and regulators), and changes in laws, regulations and priorities related to greenhouse gas emissions and other climate change related concerns
- our exposure to additional risks as a result of our international business, including risks related to geopolitical and economic factors, suppliers, laws and regulations

- 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
- natural disasters
- 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
- 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

General and Other Risk Factors

- the adequacy and availability of our insurance coverage, customer indemnifications or other liability protections
- the future investment performance of plan assets, gains or losses associated with changes in valuation of marketable securities related to our non-qualified benefit plans, 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
- changes in business conditions that could impact business investments and/or recorded goodwill or the value of other long-lived assets

We urge you 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.

## Item 3. Quantitative and Qualitative Disclosures About Market Risk

There have been no material changes to our market risks from those discussed in our 2021 Annual Report on Form 10-K. For more information regarding the economic environment, including global inflationary pressures, and the potential impact to the company, see "Management's Discussion and Analysis of Financial Condition and Results of Operations" in this Form 10-Q.

## Item 4. Controls and Procedures

### DISCLOSURE CONTROLS AND PROCEDURES

Our principal executive officer (Chair, 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, 2022, 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, 2022, 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 2021 Annual Report on Form 10-K.

Consistent with SEC Regulation S-K Item 103, we have elected to disclose those environmental proceedings with a governmental entity as a party where the company reasonably believes such proceeding would result in monetary sanctions, exclusive of interest and costs, of $1.0 million or more.

### Item 1A. Risk Factors

For a discussion of our risk factors please see the section entitled “Risk Factors” in our 2021 Annual Report on Form 10-K.

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

The table below summarizes our repurchases of common stock during the three months ended September 30, 2022.

| Period | Total Number of Shares Purchased | Average Price Paid per Share[1] | Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs | Approximate Dollar Value of Shares that May Yet Be Purchased under the Plans or Programs ($ in millions) |
|---|---|---|---|---|
| July 2, 2022 - July 29, 2022 | 234,422 | $ 460.61 | 234,422 | $ 3,386 |
| July 30, 2022 - August 26, 2022 | 245,200 | 482.06 | 245,200 | 3,267 |
| August 27, 2022 - September 30, 2022 | 307,400 | 482.16 | 307,400 | 3,119 |
| Total | 787,022 | $ 475.71 | 787,022 | $ 3,119 |

[1] Includes commissions paid.

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.

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

**NORTHROP GRUMMAN CORPORATION**

**Item 6. Exhibits**

| | |
|---|---|
| 10.1 | Credit Agreement, dated as of August 23, 2022, among Northrop Grumman Corporation, as borrower, Northrop Grumman Systems Corporation, as guarantor, the lenders party thereto and JPMorgan Chase Bank, N.A., as administrative agent (incorporated by reference to Exhibit 10.1 to Form 8-K filed August 23, 2022, File No. 001-16411). |
| *+10.2 | Transition and Retirement Agreement dated as of September 9, 2022 by and between Northrop Grumman Systems Corporation and Mary D. Petryszyn |
| *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, 2022, formatted as inline 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 |

**NORTHROP GRUMMAN CORPORATION**

## 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 26, 2022

# TRANSITION AND RETIREMENT AGREEMENT

1. **PARTIES:** The parties to this Transition and Retirement Agreement ("Agreement") are MARY D. PETRYSZYN ("Ms. Petryszyn") and NORTHROP GRUMMAN SYSTEMS CORPORATION ("Northrop Grumman" or "the Company").

2. **RECITALS**:

   2.1 Ms. Petryszyn has decided to retire effective February 1, 2023, and to transition out of her current position on October 15, 2022, to enable her to support an effective transition for her successor and to support corporate initiatives until her retirement. She will remain a Corporate Vice President in Virginia and continue to report to the CEO.

   2.2 Ms. Petryszyn and the Company have agreed to the retirement plan and timing described in Section 2.1 of this Agreement, to the benefits and compensation described in Section 3 of this Agreement, and the other terms of this Agreement.

3. **JOB TRANSITION AND BENEFITS:** In exchange for the benefits and covenants set forth herein and other good and valid consideration, the receipt and sufficiency of which is hereby acknowledged, the Company and Ms. Petryszyn hereby agree as follows:

   3.1 The Company will continue Ms. Petryszyn's employment until her Retirement Date (as defined in Section 4 below), subject to the Company's right to terminate Ms. Petryszyn for Cause. For purposes of this Section 3.1, "Cause" includes any of the following: (i) Ms. Petryszyn's failure to perform her assigned duties in accordance with the Company's expected standards after being given written notice of deficiency, or (ii) Ms. Petryszyn's commission of an act of misconduct, or (iii) Ms. Petryszyn's conviction of any crime or loss of security clearance.

   3.2 Ms. Petryszyn will step down as President, Defense Systems sector, effective at the end of the day on October 15, 2022, and perform duties assigned by the CEO until her Retirement Date (as defined in Section 4 below).

   3.3 Ms. Petryszyn will remain an elected Corporate Vice President reporting to the Chief Executive Officer and continue as a full-time employee in Virginia up to and including her Retirement Date (as defined in Section 4 below).

   3.4 Consistent with her continued employment as a Corporate Vice President, Ms. Petryszyn will remain eligible to receive a bonus for the 2022 performance year, subject to the terms and conditions of the 2006 Annual Incentive Plan and Incentive Compensation Plan. She will not be eligible for and will not receive any bonus for the 2023 performance year.

3.5 In accordance with the terms of the grant agreements, Ms. Petryszyn will receive her Early Retirement treatment of her 2020, 2021, and 2022 Restricted Stock Rights (RSR) and Restricted Performance Stock Rights (RPSR) grants, provided (i) Ms. Petryszyn's employment continues through her Retirement Date; and (ii) the Company has determined that Ms. Petryszyn has complied and continues to comply with all of her obligations under the 2020-2022 RSR and RPSR Grant Agreements and this Agreement.

3.6 The payments and benefits described in this Section 3 are contingent upon: (i) Ms. Petryszyn's execution of this Agreement, (ii) her execution of the attached Exhibit A (General Release Agreement) on her Retirement Date, as defined in Section 4 (without revocation), and (iii) her full compliance with the terms and conditions of this Agreement. The terms and conditions of the General Release Agreement are incorporated into this Agreement as if fully set forth herein.

4. **RETIREMENT**: Ms. Petryszyn will voluntarily retire as an employee of the Company with a last day of employment of January 13, 2023 ("Retirement Date").

5. **COMPLETE RELEASE:** Ms. Petryszyn RELEASES the Company from liability for any claims, demands or causes of action against the Company and the Released Parties (except as described in Section 5.5). This Release applies not only to the "Company" itself, but also to all Northrop Grumman parents, subsidiaries, affiliates, joint ventures, predecessors, and successors, and (i) its and their employee benefit plans, and the trustees, fiduciaries and administrators of any such plans, and (ii) its and their past or present officers, directors, agents and employees ("Released Parties"). For purposes of this Release, the term "Ms. Petryszyn" includes not only Ms. Petryszyn herself, but also her heirs, spouses or former spouses, domestic partners or former domestic partners, executors and agents. Except as described in Section 5.5, this Release extinguishes all of Ms. Petryszyn's claims, demands or causes of action, known or unknown, against the Company and the Released Parties, on account of or arising out of anything that has happened, developed, or occurred on or before the date Ms. Petryszyn signs this Agreement.

5.1 This Release includes, but is not limited to, claims relating to Ms. Petryszyn's employment by or retirement from the Company and any Released Party, any rights of continued employment, reinstatement or reemployment by the Company and any Released Party, claims relating to or arising under Company or Released Party dispute resolution procedures, claims for any costs or attorneys' fees incurred by Ms. Petryszyn, and claims for severance benefits.

5.2 This Release includes, but is not limited to, claims arising under, the Family and Medical Leave Act, the Worker Adjustment and Retraining Notification Act, the Employee Retirement Income Security Act, the anti-retaliation provision of the False Claims Act, Executive Order No. 11246, the Civil Rights Act of 1991, and 42 U.S.C. § 1981. It also includes, but is not limited to, claims under Title VII of the Civil Rights Act of 1964; the Americans with Disabilities Act; any laws prohibiting discrimination in employment based on veteran status or any other protected basis; any applicable state human rights statutes; and any other federal, state or local laws, ordinances, regulations and common law, to the fullest extent permitted by law.

5.3 This Release also includes, but is not limited to, any rights, claims, causes of action, demands, damages or costs arising under or in relation to the personnel policies or employee handbooks of the Company and any Released Party, or any oral or written representations or statements made by the Company and any Released Party, past and present, or any claim for wrongful discharge, breach of contract (including any employment agreement), breach of the implied covenant of good faith and fair dealing, intentional or negligent infliction of emotional distress, intentional or negligent misrepresentation, or defamation.

5.4 Ms. Petryszyn agrees that her Release includes claims which she did not know of or suspect to exist at the time she signed this Agreement, and that this Release extinguishes all known and unknown claims.

5.5 However, this Release does not include any rights Ms. Petryszyn may have: (1) to enforce this Agreement and her rights to receive the benefits described in Section 3 of this Agreement; (2) to any indemnification rights Ms. Petryszyn may have, including for expenses (including attorneys' fees) or losses incurred in the course and scope of her employment; (3) to workers' compensation benefits; (4) to earned, banked or accrued but unused PTO; (5) to vested benefits under any qualified or non-qualified retirement or savings plan; (6) to continued benefits in accordance with COBRA; (7) to government-provided unemployment insurance; (8) to file a claim or charge with any government agency and to receive any whistleblower award (although Ms. Petryszyn is releasing any rights she may have to recover damages or other individual relief in connection with the filing of such a claim or charge); (9) to claims that cannot lawfully be released; (10) to any rights Ms. Petryszyn may have for retiree medical coverage; or (11) to claims that arise from acts or omissions that occur after the date Ms. Petryszyn signs this Agreement.

6. **<u>POST-EMPLOYMENT CONDUCT</u>:**

6.1 Ms. Petryszyn shall not, directly or indirectly, through the assistance of a third party, or counsel, on her own behalf or on behalf of another person or entity, by any means issue or communicate any statement that is critical or disparaging or may reasonably be interpreted as critical or disparaging of any Released Party or its/their employees, products or services; provided that neither the foregoing nor any other provision of this Agreement affects Ms. Petryszyn's right to provide truthful information to government authorities or her obligations to cooperate with any government investigation or to respond truthfully to any lawful government inquiry or to give truthful testimony in court.

6.2 During the term of her employment through her Retirement Date, Ms. Petryszyn was exposed to and involved in the development of various of Northrop Grumman's most valuable, unique and material trade secrets and confidential and proprietary information, not only within the Defense Systems sector and the Mission Systems sector, but across Northrop Grumman. Ms. Petryszyn occupies one of the most senior executive positions in the Company and has far-reaching access to and is widely exposed to Northrop Grumman's highly confidential, valuable and sensitive information; customer, partner, supplier and employee relationships; intellectual property; privileged and confidential information; short and long term strategies and tactical plans; investments and technologies; human capital; and financial information and plans. Northrop Grumman has a very significant, legitimate business interest in restricting Ms. Petryszyn's ability to compete or solicit in the specific manner set forth below.

6.3 Ms. Petryszyn agrees that for a period of eighteen (18) months from her Retirement Date, she will not, directly or indirectly, as an employee, consultant, director, or in any other capacity, oversee, control, support or in any way participate in (i) the design, operation, research, manufacture, marketing, sale, or distribution of Competitive Products and Services or (ii) the development of requirements or military, financial or political support for Competitive Products and Services. For purposes of this Agreement, "Competitive Products and Services" shall mean products or services that compete for resources with or are an alternative or potential alternative to, the products sold or services provided by Northrop Grumman, including without limitation, design, development, production, integration, sustainment and modernization of weapons systems, aircraft and mission systems, and integrated battle management systems, for U.S. and global military and civilian customers.

6.4 The following activities will not alone constitute a breach of Section 6.3: (i) ownership for investment purposes of not more than five percent (5%) of the total outstanding equity securities (or other interests) of an entity, (ii) serving as a principal, partner, director, employee, consultant or advisor in or to a private equity firm or financial services entity, provided that such activities do not involve advising the private equity firm or financial services entity or any third party in any way regarding NGC or Competitive Products or Services, or (iii) otherwise working in a capacity that does not in any way involve Competitive Products or Services. Further, Ms. Petryszyn may request an exception to the covenants in Sections 6.3, 6.5, or 6.6 by making a written request to the Company's Chief Human Resources Officer or General Counsel, with such exceptions being considered at the sole discretion of the Company and communicated in writing to Ms. Petryszyn.

6.5 For a period of eighteen (18) months from her Retirement Date, Ms. Petryszyn shall not, directly or indirectly, solicit any customer, supplier, teammate or partner of Northrop Grumman with whom Ms. Petryszyn engaged, or about whom Ms. Petryszyn received any confidential, sensitive, or proprietary information, in the course of Ms. Petryszyn's employment with Northrop Grumman, for purposes of developing, considering or providing products or services in competition with Northrop Grumman.

6.6 For a period of eighteen (18) months from her Retirement Date, Ms. Petryszyn shall not, directly or indirectly, through assistance, information or counsel, on her own behalf or on behalf of another person or entity, solicit or offer to hire, any person who was, within a period of six months prior to the Retirement Date, employed by any Released Party, with whom Ms. Petryszyn worked or about whom Ms. Petryszyn received any information in the course of her employment with Northrop Grumman. For clarification, Section 6.6 does not apply with respect employees who are at the time no longer employed by the Released Party.

6.7 Ms. Petryszyn reaffirms her obligation and agrees to fully protect and not disclose or use any confidential, privileged, proprietary or otherwise protected information of the Company or any Released Party, including without limitation, trade secrets, intellectual property, strategies, pricing, business relationships, financial plans, privileged communications or work product, and business development plans. Ms. Petryszyn agrees that she has not and will not inappropriately transfer anything containing Company or Released Party confidential or proprietary information. Ms. Petryszyn has not and will not claim ownership of any rights to any Company or Released Party intellectual property. Prior to her Retirement Date, Ms. Petryszyn agrees to execute and continue to comply with Corporate Form C-100D, which is incorporated into this Agreement as if fully set forth herein. Notwithstanding the foregoing, Ms. Petryszyn shall not be held liable under this Agreement or any other agreement or any federal or state trade secret law for making any confidential disclosure of a Company trade secret or other confidential information to a government official or an attorney for purposes of investigating or reporting a suspected violation of law or regulation, or in a court filing under seal.

6.8 Further, Ms. Petryszyn acknowledges and agrees that a breach of any of the provisions of Section 6 will result in immediate, irreparable and continuing damage to the Company for which there is no adequate remedy at law, and the Company will be entitled to injunctive relief and a decree of specific performance, in addition to other relief as may be proper, including monetary damages and relief provided for in Section 3 above. Ms. Petryszyn agrees that the applicable post-employment restriction periods shall be extended by any period of time during which it is found that she was in violation of such restrictions.

6.9 Ms. Petryszyn agrees that the restrictions set forth in Section 6 are (i) reasonable and necessary in all respects, including duration, territory and scope of activity, in order to protect Northrop Grumman's non-public trade secrets and proprietary information, (ii) that the parties have agreed to limit Ms. Petryszyn's right to compete only to the extent necessary to protect Northrop Grumman's legitimate business interests, and (iii) that she will be able to earn a livelihood without violating the restrictions in Section 6. It is the intent of the parties that the provisions of Section 6 shall be enforced to the fullest extent permissible under applicable law.

7. **FULL DISCLOSURE:** Ms. Petryszyn agrees to cooperate in an interview with the General Counsel of the Company (or her delegate) on the day she signs this Agreement and on or immediately before her Retirement Date. Ms. Petryszyn acknowledges that she is not aware of, or has fully disclosed to the General Counsel (or her delegate), any matters for which she was responsible or which came to her attention as an employee, which might reasonably be expected to give rise to a claim or cause of action against, or investigation or audit of, the Company and/or any Released Party, including without limitation any knowledge of potential fraud, overpayments, false statements, improper or erroneous financial reporting, violations of law or regulation, employee misconduct, or violations of the Company's Standards of Business Conduct or other policies or procedures. Ms. Petryszyn has reported to the Company all work-related injuries, if any, that she has suffered or sustained during her employment with the Company and any Released Party. Ms. Petryszyn has properly reported all hours she worked.

8. **NO UNRESOLVED CLAIMS:** This Agreement has been entered into with the understanding that there are no unresolved claims of any nature that Ms. Petryszyn has against the Company. Ms. Petryszyn acknowledges and agrees that except as specified in Section 3, all compensation, benefits, and other obligations due Ms. Petryszyn by the Company, whether by contract or by law, have been paid or otherwise satisfied in full.

9. **RETURN OF COMPANY PROPERTY:** Ms. Petryszyn agrees to return any and all property and equipment of the Company and any Released Party that she may have in her possession, including without limitation all confidential, privileged, proprietary or otherwise protected electronic and paper documents, no later than the Retirement Date, except to the extent this Agreement explicitly provides to the contrary.

10. **WITHHOLDING OF TAXES:** The Company shall be entitled to withhold from any amounts payable or pursuant to this Agreement all taxes as legally shall be required (including, without limitation, United States federal taxes, and any other state, city or local taxes).

11. **ADVICE OF COUNSEL:** The Company encourages Ms. Petryszyn to seek and receive advice about this Agreement from an attorney of her choosing.

12. **DENIAL OF WRONGDOING:** Neither party, by signing this Agreement, admits any wrongdoing or liability to the other. Both the Company and Ms. Petryszyn deny any such wrongdoing or liability.

13. **COOPERATION:** Ms. Petryszyn agrees that, for at least sixty (60) months following the Retirement Date, she will reasonably cooperate with Company and any Released Party regarding requests for assistance by providing support in connection with claims, litigation and investigations, including without limitation serving as a witness and/or providing information about

matters connected with Ms. Petryszyn's prior employment with the Company or any Released Party; provided, however, that any such cooperation in excess of 40 hours per year shall be subject to mutually agreeable reasonable compensation. The Company or the Released Party requesting assistance shall reimburse Ms. Petryszyn for any travel costs she incurs in connection with her cooperation, in accordance with its travel cost reimbursement policy for active appointed officers.

14. **ARBITRATION, JURISDICTION, AND VENUE:**

14.1 Except as otherwise provided in this Section 14, with respect to any cause of action or claim arising out of or related to this Agreement (including any claim that either party has violated this Agreement or regarding its enforceability), the parties will attempt to resolve the dispute through mediation. If the parties are unsuccessful in voluntarily resolving the dispute through mediation within 3 months, the parties agree that the cause of action or claim arising out of this Agreement will be determined through final and binding arbitration, rather than through litigation in court.

14.2 The Company and Ms. Petryszyn agree that any arbitration hearing and related proceedings shall be convened and conducted in Falls Church, VA.

14.3 The Company and Ms. Petryszyn agree that the prevailing party in the arbitration shall be entitled to receive from the losing party reasonably incurred attorneys' fees and costs, except in any challenge by Ms. Petryszyn to the validity of the General Release Agreement (attached hereto as Exhibit A) under the Age Discrimination in Employment Act and/or Older Workers Benefit Protection Act.

14.4 If the Company or Ms. Petryszyn believes they require immediate relief to enforce or challenge this Agreement, before arbitration is commenced or concluded, either party may seek injunctive or other provisional equitable relief from state or federal court in the Commonwealth of Virginia. Either party may also proceed in state or federal court in the Commonwealth of Virginia to compel arbitration or to enforce an arbitration award under this Agreement. All court actions or proceedings arising under this Agreement shall be heard in state or federal court in the Commonwealth of Virginia. The Company and Ms. Petryszyn hereby waive any right to object to such actions on grounds of venue, jurisdiction or convenience. The Company and Ms. Petryszyn stipulate that the state and federal courts located in or for **Fairfax County, Virginia** shall have in personam jurisdiction and venue for the purpose of litigating any such dispute, controversy, claim, or complaint arising out of or related to this Agreement.

15. **SOLE AND ENTIRE AGREEMENT:** This Agreement expresses the entire understanding between the Company and Ms. Petryszyn on the matters it covers. It supersedes all prior discussions, agreements, understandings and negotiations between the parties on these matters; except that any writing between the Company and Ms. Petryszyn relating to protection or non-

disclosure of Company trade secrets or other information, intellectual property and/or certifications made by Ms. Petryszyn shall remain in effect, and the 2019, 2020, 2021, and 2022 Restricted Performance Stock Rights and Restricted Stock Rights Grant Agreements shall all remain in full force and effect in accordance with their terms.

16. **MODIFICATION:** Once this Agreement takes effect, it may not be cancelled or changed, unless done so in a document signed by both Ms. Petryszyn and an authorized Company representative.

17. **SEVERABILITY:** Except as provided in Section 6.9, if any part of this Agreement is found to be illegal or invalid and therefore unenforceable, other than all or any part of Section 5, then the unenforceable part shall be removed, and the rest of the Agreement shall remain valid and enforceable.

18. **GOVERNING LAW:** This Agreement shall be governed by and interpreted and enforced in accordance with the laws of the Commonwealth of Virginia, without regard to rules regarding conflicts of law.

19. **ADVICE OF COUNSEL; VOLUNTARY AGREEMENT:**

MS. PETRYSZYN ACKNOWLEDGES THAT SHE HAS HAD AN OPPORTUNITY TO ASK QUESTIONS, CONFER WITH COUNSEL, AND CONSIDER ALL OF THE PROVISIONS OF THIS AGREEMENT BEFORE SIGNING IT. SHE FURTHER AGREES THAT SHE HAS READ THIS AGREEMENT **CAREFULLY**, THAT SHE UNDERSTANDS IT, AND THAT SHE IS VOLUNTARILY ENTERING INTO IT. MS. PETRYSZYN UNDERSTANDS AND ACKNOWLEDGES THAT THIS AGREEMENT CONTAINS HER RELEASE OF ALL KNOWN AND UNKNOWN CLAIMS.

Date: 9/21/22 By: /s/ Mary D. Petryszyn
MARY D. PETRYSZYN

Date: 9/21/22 By: /s/ Ann Addison
Northrop Grumman Systems Corporation

Title: Corporate Vice President & Chief Human Resources Officer

<u>EXHIBIT A</u>

# GENERAL RELEASE AGREEMENT

This is an agreement (hereinafter "Release" or "Release Agreement") between MARY D. PETRYSZYN("Ms. Petryszyn") and Northrop Grumman Systems Corporation ("Northrop Grumman" or "the Company") regarding Ms. Petryszyn's employment with the Company and her acceptance of certain benefits in exchange for valuable consideration; Ms. Petryszyn's retirement from the Company; and Ms. Petryszyn's agreement to the terms contained in this Release Agreement and the previously executed Transition and Retirement Agreement, all the terms of which are incorporated by reference as if fully set forth herein. The purpose of this Release Agreement is to resolve fully and finally any and all matters concerning Ms. Petryszyn's employment with the Company and her retirement from the Company.

1. In exchange for this Release Agreement, the Company will provide Ms. Petryszyn with certain consideration as outlined in the Transition and Retirement Agreement dated September ___, 2022 ("Transition and Retirement Agreement").

2. This Release Agreement satisfies the requirement that Ms. Petryszyn executes a General Release Agreement as set forth in Section 3.6 of the Transition and Retirement Agreement.

3. In exchange for the consideration exchanged between Ms. Petryszyn and the Company as set forth in the Transition and Retirement Agreement and this Release Agreement, Ms. Petryszyn RELEASES the Company from liability for any claims, demands or causes of action, known or unknown, against the Company and the Released Parties, on account of or arising out of anything that has happened, developed, or occurred on or before the date Ms. Petryszyn signs this Release Agreement (except as described in Section 3.5). This Release applies not only to the "Company" itself, but also to all Northrop Grumman parents, subsidiaries, affiliates, related companies, joint ventures, predecessors, successors, its or their employee benefit plans, trustees, fiduciaries and administrators, and any and all of its and their respective past or present officers, directors, agents and employees ("Released Parties"). For purposes of this Release, the term "Ms. Petryszyn" includes not only Ms. Petryszyn herself, but also her heirs, spouses or former spouses, domestic partners or former domestic partners, executors and agents. Except as described in Section 3.5, this Release extinguishes all of Ms. Petryszyn's claims, demands or causes of action, known or unknown, against the Company and the Released Parties, on account of or arising out of anything that has happened, developed, or occurred on or before the date Ms. Petryszyn signs this Release Agreement.

3.1 This Release includes, but is not limited to, claims relating to Ms. Petryszyn's employment by or retirement from the Company and any Released Party, any rights of continued employment, reinstatement or reemployment by the Company and any Released Party, claims relating to or arising under Company or Released Party dispute resolution procedures, claims for any costs or attorneys' fees incurred by Ms. Petryszyn, and claims for severance benefits.

3.2 This Release includes, but is not limited to, claims arising under the Age Discrimination in Employment Act, the Family and Medical Leave Act, the Employee Retirement Income Security Act, the anti-retaliation provision of the False Claims Act, Executive Order No. 11246, the Civil Rights Act of 1991, and 42 U.S.C. § 1981. It also includes, but is not limited to, claims under

Title VII of the Civil Rights Act of 1964; the Americans with Disabilities Act; any laws prohibiting discrimination in employment based on veteran status or any other protected basis; any state human rights statutes that may be applicable; and any other federal, state or local laws, ordinances, regulations and common law, to the fullest extent permitted by law.

3.3 This Release also includes, but is not limited to, any rights, claims, causes of action, demands, damages or costs arising under or in relation to the personnel policies or employee handbooks of the Company and any Released Party, or any oral or written representations or statements made by the Company and any Released Party, past and present, or any claim for wrongful discharge, breach of contract (including any employment agreement), breach of the implied covenant of good faith and fair dealing, intentional or negligent infliction of emotional distress, intentional or negligent misrepresentation, or defamation.

3.4 Ms. Petryszyn agrees that her Release includes claims which she did not know of or suspect to exist at the time she signed this Agreement, and that this Release extinguishes all known and unknown claims.

3.5 However, this Release does <u>not</u> include any rights Ms. Petryszyn may have: (1) to enforce this Release Agreement or the Transition and Retirement Agreement and her rights to receive the compensation and benefits described in this Release Agreement or the Transition and Retirement Agreement; (2) to any indemnification rights Ms. Petryszyn may have for expenses or losses incurred in the course and scope of her employment; (3) to test the knowing and voluntary nature of this Release Agreement under The Older Workers Benefit Protection Act; (4) to workers' compensation benefits; (5) to earned, banked or accrued but unused PTO; (6) to vested benefits under any qualified or non-qualified retirement or savings plan; (7) to continued benefits in accordance with COBRA; (8) to government-provided unemployment insurance; (9) to file a claim or charge with any government administrative agency and to receive a whistleblower award (although Ms. Petryszyn is releasing any rights she may have to recover damages or other individual relief in connection with the filing of such a claim or charge); (10) to claims that cannot lawfully be released; (11) to any rights Ms. Petryszyn may have for retiree medical coverage; (12) to any rights Ms. Petryszyn may have with respect to her existing equity grants under the Company's Long Term Incentive Stock Plan, as modified by the Transition and Retirement Agreement; or (13) to claims that arise from acts or omissions that occur after the date Ms. Petryszyn signs this Release Agreement.

4. Ms. Petryszyn acknowledges that, as of the Retirement Date (as defined in the Transition and Retirement Agreement), she is not aware of, or has fully disclosed to the General Counsel of the Company (or her delegate), any matters for which she was responsible or which came to her attention as an employee, which might reasonably be expected to give rise to a claim or cause of action against, or investigation or audit of the Company and/or any Released Party, including without limitation any knowledge of potential fraud, overpayments, false statements, improper or erroneous financial reporting, violations of law or regulation, employee misconduct, or violations of the Company's Standards of Business Conduct or other policies or procedures. Ms. Petryszyn has reported to the Company all work-related injuries,

if any, that she has suffered or sustained during her employment with the Company and any Released Party. Ms. Petryszyn has properly reported all hours she worked.

5. This Release Agreement has been entered into with the understanding that there are no unresolved claims of any nature which Ms. Petryszyn has against the Company. Ms. Petryszyn acknowledges and agrees that except as specified in Section 3 of the Transition and Retirement Agreement, all compensation, benefits, and other obligations due Ms. Petryszyn by the Company, whether by contract or by law, have been paid or otherwise satisfied in full.

6. The Company encourages Ms. Petryszyn to seek and receive advice about this Release Agreement from an attorney of her choosing, and Ms. Petryszyn has had the opportunity to do so. Ms. Petryszyn has had at least twenty-one (21) calendar days to consider this Release Agreement, which she agrees is a reasonable period of time.

7. Ms. Petryszyn may revoke this Release Agreement within seven (7) calendar days of her signature date. To do so, Ms. Petryszyn must deliver a written revocation notice to Ms. Ann Addison, Chief Human Resources Officer, at 2980 Fairview Park Drive, Falls Church, Virginia 22042. Ms. Petryszyn must deliver the notice to Ms. Addison no later than 4:30 p.m. ET on the seventh calendar day after Ms. Petryszyn's signature date. If Ms. Petryszyn revokes this Release Agreement, it shall not be effective or enforceable and Ms. Petryszyn will not receive the compensation and benefits described in this Release Agreement or Sections 3.4 and 3.5 of the Transition and Retirement Agreement.

MS. PETRYSZYN ACKNOWLEDGES THAT SHE HAS HAD AN OPPORTUNITY TO ASK QUESTIONS, CONFER WITH COUNSEL, AND CONSIDER ALL OF THE PROVISIONS OF THIS AGREEMENT BEFORE SIGNING IT. SHE FURTHER AGREES THAT SHE HAS READ THIS AGREEMENT **CAREFULLY**, THAT SHE UNDERSTANDS IT, AND THAT SHE IS VOLUNTARILY ENTERING INTO IT. MS. PETRYSZYN UNDERSTANDS AND ACKNOWLEDGES THAT THIS AGREEMENT CONTAINS HER RELEASE OF ALL KNOWN AND UNKNOWN CLAIMS.

Date: __ By: __

MARY D. PETRYSZYN

Date: __ By: __

Northrop Grumman Systems Corporation

Title:____

**NORTHROP GRUMMAN CORPORATION**

**EXHIBIT 15**

**LETTER FROM INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

October 26, 2022

The Board of Directors and Stockholders of Northrop Grumman Corporation

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

We are aware that our report dated October 26, 2022, on our review of the interim financial information of Northrop Grumman Corporation and subsidiaries appearing in this Quarterly Report on Form 10-Q for the quarter ended September 30, 2022, is incorporated by reference in Registration Statement Nos. 033-59815, 033-59853, 333-67266, 333-100179, 333-107734, 333-121104, 333-125120, 333-127317, 333-175798 on Form S-8, 333-237504 on Form S-3, and 333-264549 on Form S-4.

/s/ Deloitte & Touche LLP
McLean, Virginia

**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 26, 2022

**/s/ Kathy J. Warden**

Kathy J. Warden

Chair, 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 26, 2022

**/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, 2022, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Kathy J. Warden, Chair, 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 26, 2022

**/s/ Kathy J. Warden**
Kathy J. Warden
Chair, 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, 2022, 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 26, 2022

**/s/ David F. Keffer**
David F. Keffer
Corporate Vice President and Chief Financial Officer