Northrop Grumman Corporation

July 30, 2020

Forward-Looking Statement

This presentation and the information we are incorporating by reference contain or may 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,” “guidance,” “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 the Form 10-K for the year ended December 31, 2019, the section entitled “Risk Factors” in the Form 10-Q for the quarter ended March 31, 2020 and from time to time in our other filings with the Securities and Exchange Commission (SEC). These risks and uncertainties are amplified by the global COVID-19 pandemic, which has caused and will continue to cause significant challenges, instability and uncertainty. They include:

- the impact of the COVID-19 outbreak or future epidemics on our business, including the potential for worker absenteeism, facility closures, work slowdowns or stoppages, supply chain disruptions, program delays, our ability to recover costs under contracts, changing government funding and acquisition priorities and processes, changing government payment rules and practices, and potential impacts on access to capital, the markets and the fair value of our assets;
- our dependence on the U.S. government for a substantial portion of our business
- significant delays or reductions in appropriations for our programs, and U.S. government funding and program support more broadly
- investigations, claims, disputes, enforcement actions, litigation and/or other legal proceedings
- the use of estimates when accounting for our contracts and the effect of contract cost growth and/or changes in estimated contract revenues and costs
- our exposure to additional risks as a result of our international business, including risks related to geopolitical and economic factors, suppliers, laws and regulations
- the improper conduct of employees, agents, subcontractors, suppliers, business partners or joint ventures in which we participate and the impact on our reputation and our ability to do business
- cyber and other security threats or disruptions faced by us, our customers or our suppliers and other partners
- the performance and financial viability of our subcontractors and suppliers and the availability and pricing of raw materials and components
- changes in procurement and other laws, regulations, contract terms and practices applicable to our industry, findings by the U.S. government as to our compliance with such requirements, and changes in our customers’ business practices globally
- increased competition within our markets and bid protests
- the ability to maintain a qualified workforce with the required security clearances and requisite skills
- our ability to meet performance obligations under our contracts, including obligations that require innovative design capabilities, are technologically complex, require certain manufacturing expertise or are dependent on factors not wholly within our control
- environmental matters, including unforeseen environmental costs and government and third party claims
- natural disasters
- health epidemics, pandemics and similar outbreaks, including the global COVID-19 pandemic
- the adequacy and availability of our insurance coverage, customer indemnifications or other liability protections
- products and services we provide related to hazardous and high risk operations, including the production and use of such products, which subject us to various environmental, regulatory, financial, reputational and other risks
- the future investment performance of plan assets, changes in actuarial assumptions associated with our pension and other postretirement benefit plans and legislative or other regulatory actions impacting our pension and postretirement benefit obligations
- our ability appropriately to exploit and/or protect intellectual property rights
- our ability to develop new products and technologies and maintain technologies, facilities, and equipment to win new competitions and meet the needs of our customers
- unanticipated changes in our tax provisions or exposure to additional tax liabilities
- changes in business conditions that could impact business investments and/or recorded goodwill or the value of other long-lived assets

You are urged to consider the limitations on, and risks associated with, forward-looking statements and not unduly rely on the accuracy of forward-looking statements. These forward-looking statements speak only as of the date of this presentation 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. This presentation and the attachments also contain non-GAAP financial measures. A reconciliation to the nearest GAAP measure and a discussion of the company’s use of these measures are included in this presentation.

Northrop Grumman Today

Leading global aerospace and defense company

$33.8 billion sales in 2019

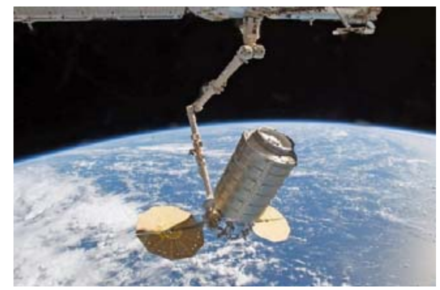
– 85% U.S. / 15% International

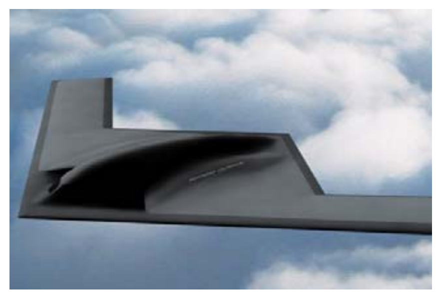
$70.0 billion total backlog
(as of June 30, 2020)

~90,000 employees

Leading capabilities in:

– Space
– Manned & Autonomous airborne systems, including Strike
– Hypersonics
– Cyber
– C4ISR
– Logistics and Modernization





Focus on Growth and Performance

New Operating Structure

AS

- Autonomous Systems
- Manned Aircraft

DS

- Battle Management & Missile Systems
- Mission Readiness

MS

- Airborne Sensors & Networks
- Cyber & Intelligence Mission Solutions
- Maritime/Land Systems & Sensors
- Navigation, Targeting & Survivability

Space

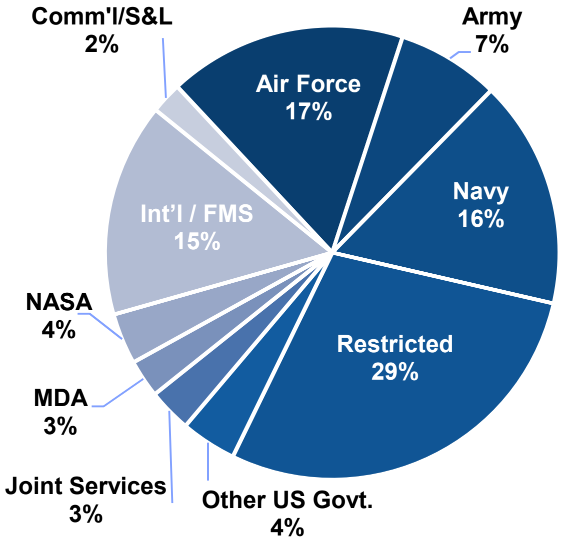
- Launch & Strategic Missiles
- Space

2019 Highlights

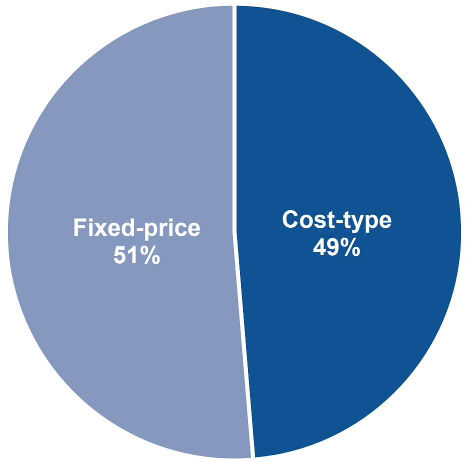
- Total backlog increased 21% to $64.8 billion
- Book-to-bill of 1.3 times
- Sales of $33.8 billion - 12% increase
- Total operating margin rate 11.7%
- Segment operating margin rate 11.6%(1)
- $4.3 billion cash provided by operations
- $3.0 billion free cash flow(1)
- Balanced capital deployment
  - $700 million of debt and commercial paper retired
  - Quarterly dividend increased 10%
  - Shares outstanding reduced by 3%

(1) Non-GAAP metric as defined and reconciled in the Appendix of this presentation.

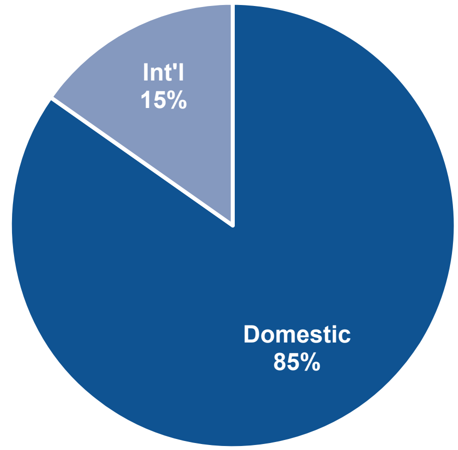
2019 Sales Mix



- Portfolio diversified across U.S. DoD services
- Differentiated technologies in all domains
- Positioned on high priority programs
- Represents ultimate end user customer where we are a subcontractor



- Portfolio addresses entire product lifecycle – development to production to sustainment
- Well balanced cost plus and fixed price contract mix



- Strengthening international business
- Improving export climate

Balanced Portfolio Supports Topline Growth and Solid Performance

Aeronautics Systems

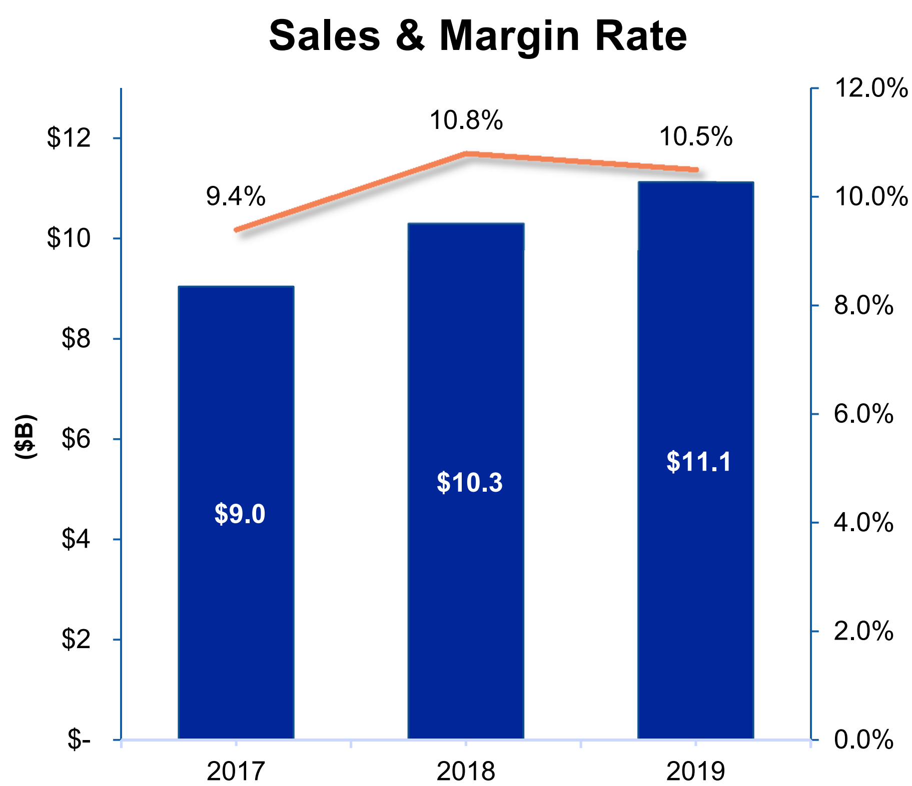
Aeronautics Systems

Performance

- Solid growth
- Focus on execution
- Margin performance and cash generation
- Invest and innovate for affordability
- Diverse, engaged workforce

Strategy

- Sustainable competitive differentiation
- Invest in our people
- Build strong trusted customer relationships
- Develop affordable total life cycle solutions
- Invest in new technologies necessary to solve hard national security challenges
- Grow the business through smart capture management



Capabilities & Key Programs

Manned Aircraft

- Designs, develops, manufactures and integrates strategic long-range strike aircraft systems, tactical fighter aircraft and airborne battle management systems.
- Key programs:
  - Long range strike – B-21 Raider, B-2 Spirit
  - Tactical fighters – F-35 Lightning II, F/A-18 Super Hornet
  - Airborne battle management – E-2D Advanced Hawkeye, E-8C JSTARS

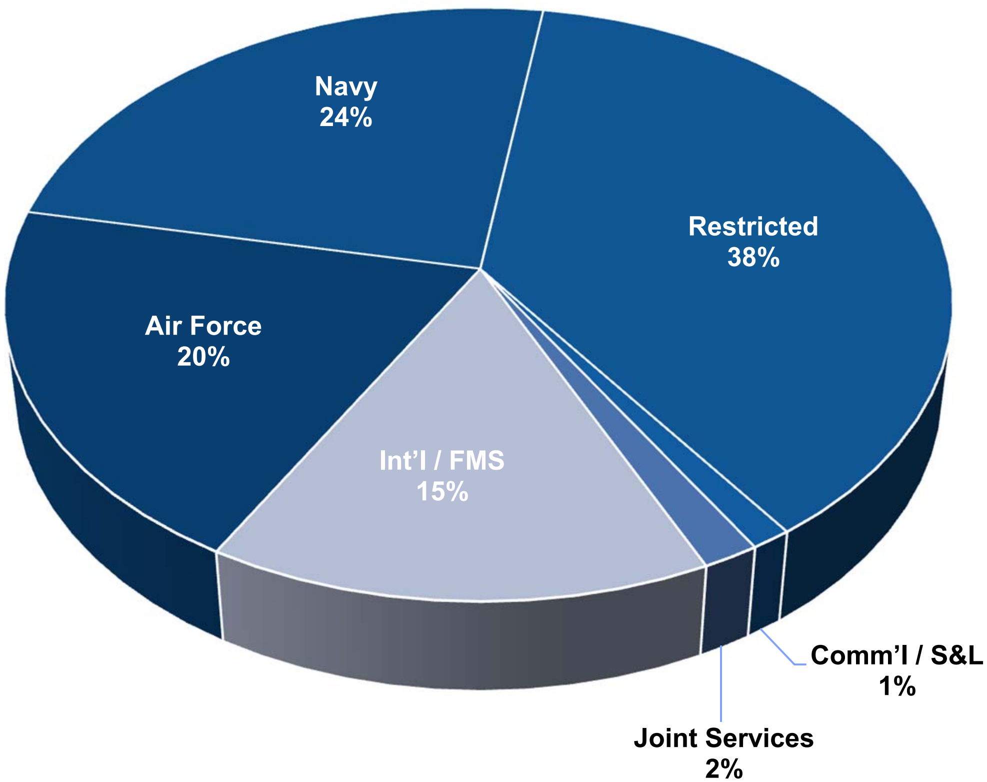
Autonomous Systems

- Designs, develops, manufactures, integrates and sustains autonomous aircraft systems for strategic and tactical ISR missions.
- Key Programs:
  - Strategic ISR platforms - RQ-4 Global Hawk, MQ-4C Triton, NATO Alliance Ground Surveillance
  - Tactical ISR – MQ-8 Fire Scout, Firebird

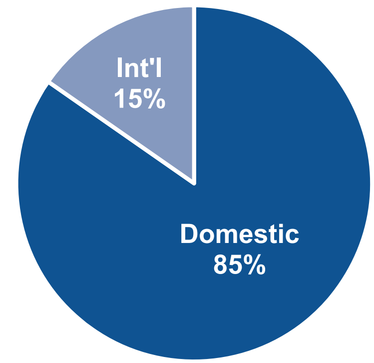
Aeronautics Systems 2019 Sales Mix

Revenue Distributions

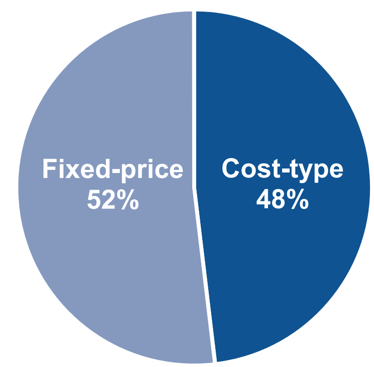
Sales by Customer



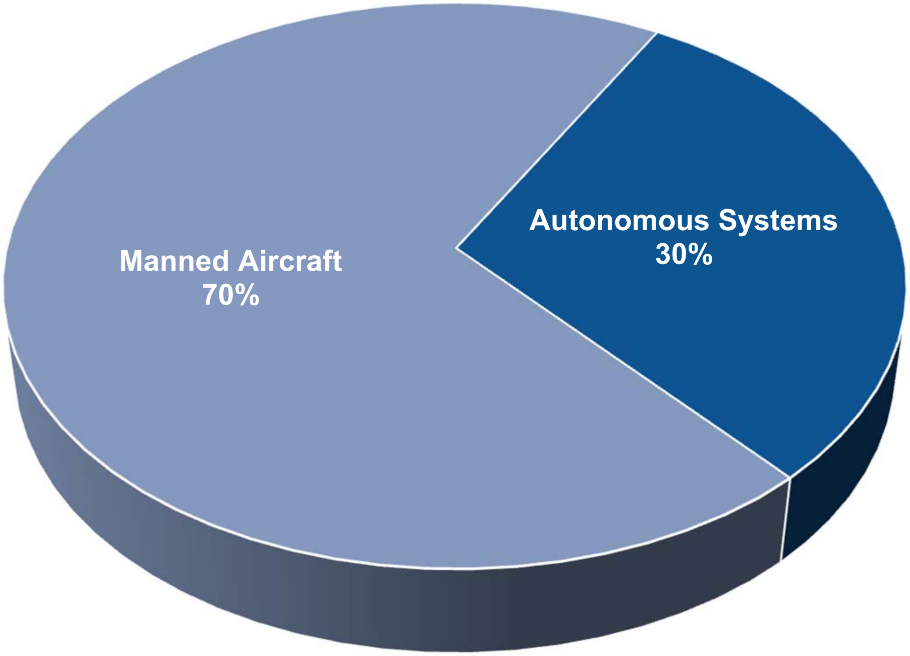
International v. Domestic



Contract Type



2019 Sales Mix

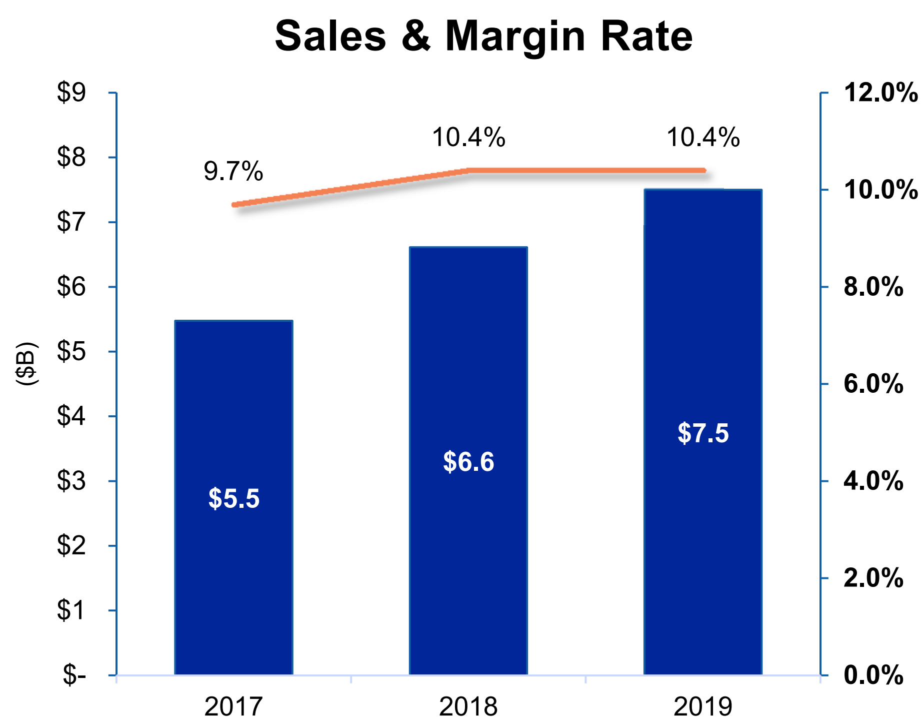


Defense Systems

Defense Systems

Performance
- Agile and efficient operations
- Diverse program portfolio
- Strong globally-positioned talent
- Cost focus to increase competitiveness
- Solid cash generation

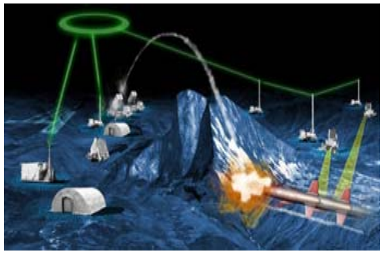
Strategy
- Broad spectrum provider of critical warfighting capabilities and services including advanced missiles, weapons, and command and control
- Focused on quick turn solutions for evolving needs and threats coupled with through life support for platforms



Capabilities & Key Programs

Battle Management & Missile Systems

- Designs, develops and integrates multi-domain C2 and weapons systems
- **Key programs:**
  - Integrated Air and Missile Defense Battle Command System (IBCS) for the U.S. Army and Poland
  - Counter Rocket, Artillery and Mortar (C-RAM)
  - Advanced Anti-Radiation Guided Missile (AARGM)
  - Precision Munitions including Precision Guidance Kit (PGK)
  - Mission Command Training Program (MCTP)

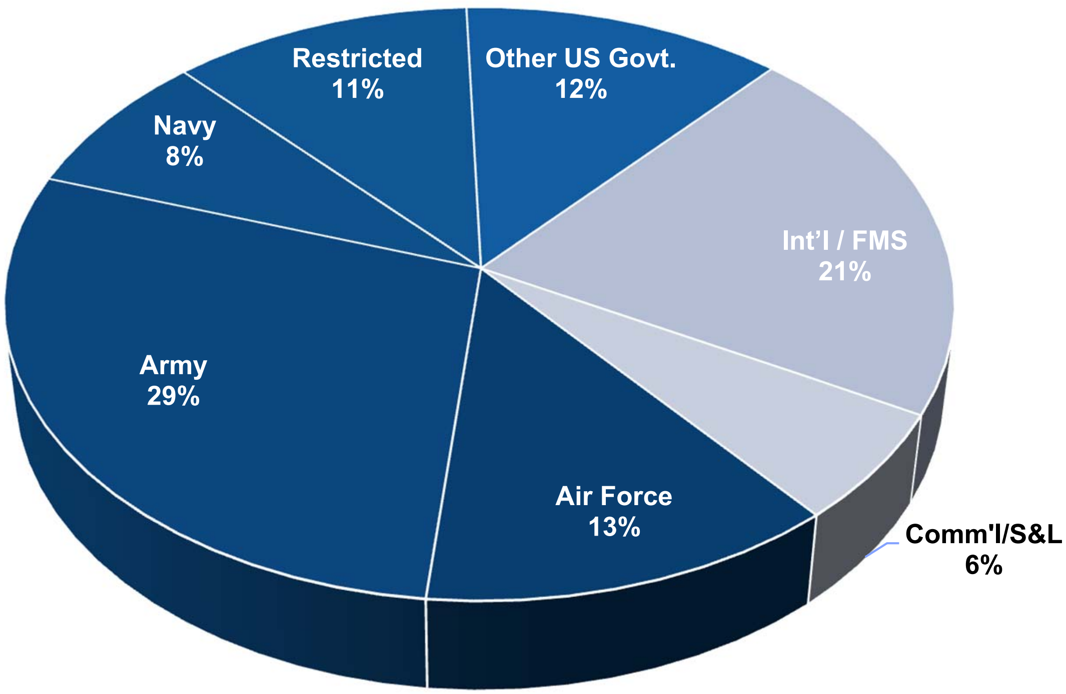


Mission Readiness

- Provides full life cycle service and support for software, weapons systems and aircraft, and logistics support, sustainment, operations and modernization for air, sea and ground
- **Key programs:**
  - Social Security Administration Information Technology Support Services Contract
  - Restricted intelligence operations
  - Program Systems Product Directorate for DHS
  - Consular Systems Modernization for Department of State
  - System sustainment and operations support for:
    - AAQ-24 Directional Infrared Countermeasures System, Battlefield Airborne Communications Node (BACN), B-2 Spirit bomber, E-8C JSTARS surveillance aircraft, KC-30A multi-role tanker, C-27J transport, Global Hawk, Triton, and F-35

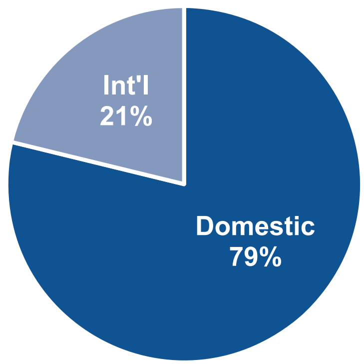
Defense Systems 2019 Sales Mix

Sales by Customer

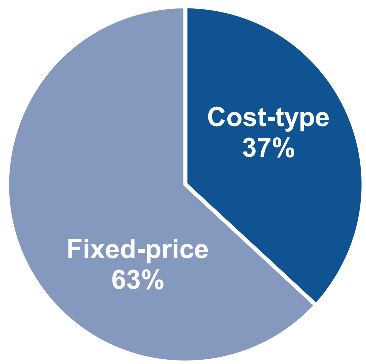


Revenue Distributions

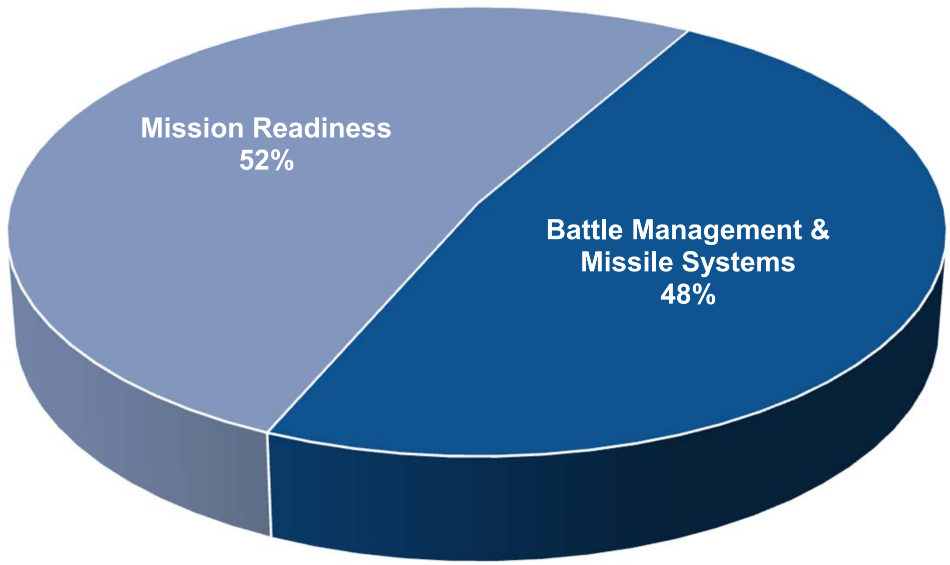
International v. Domestic

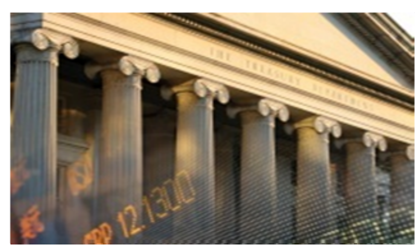


Contract Type



2019 Sales Mix





Mission Systems

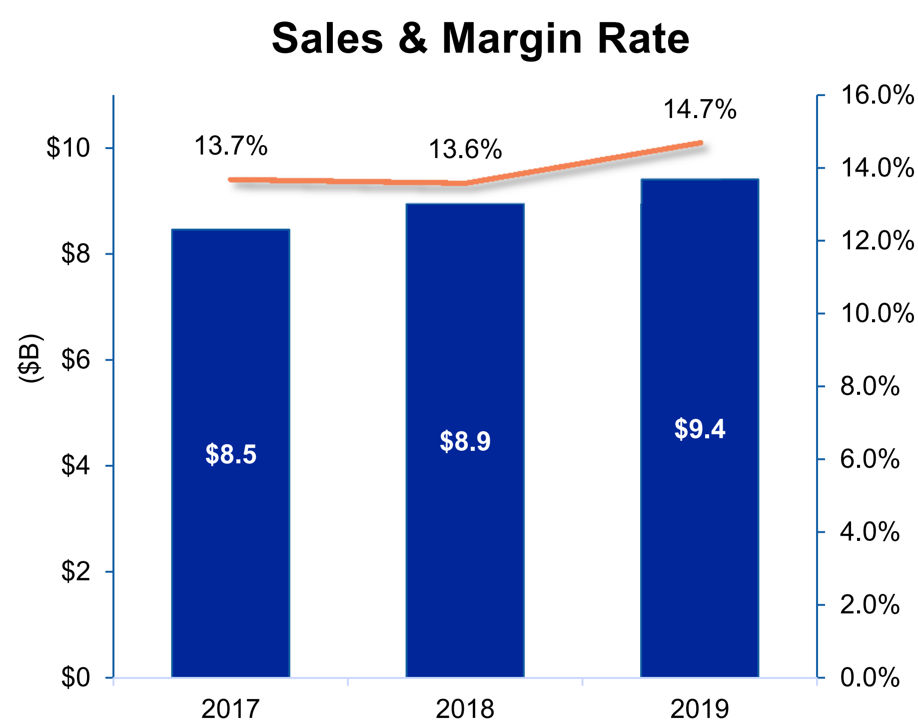
Mission Systems

Performance

- Growing revenue base
- Strong program execution
- Invest and innovate for technological superiority and affordability
- Strong margin performance and cash generation
- Diverse and engaged global workforce

Strategy

- Deliver affordable solutions that unlock speed, connectivity, and value for customers
- Expand platform positions with integrated solutions
- Maintain focus on program execution
- Grow internationally
- Attract, develop, and maintain world class workforce



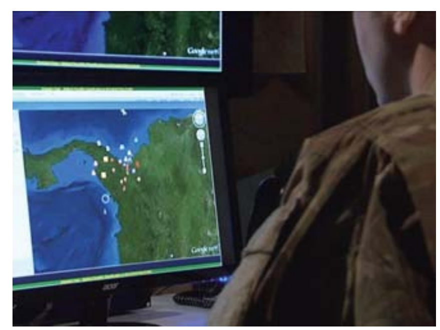
Capabilities & Key Programs

Airborne Sensors & Networks

- Fire control, surveillance and early warning and control radar systems; electronic attack and electronic support systems; software defined radios and network gateways, communications and counter-communications systems; and multi-sensor processing.
- **Key programs:**
  - Airborne Early Warning & Control and air-to-ground sensors
  - Battlefield Airborne Communications Node (BACN)
  - F-35 fire control radar, Distributed Aperture System (DAS), and Communications, Navigation and Identification (CNI) integrated avionics system
  - Scalable Agile Beam Radar (SABR) for F-16
  - Restricted programs

Cyber & Intelligence Mission Solutions

- Cyber mission management; large-scale cyber solutions for national security applications; cyber survivability; ground software systems; SIGINT sensors and processing; and geospatial intelligence and data fusion, specializing in the collection, processing and exploitation of data.
- **Key programs:**
  - Exploitation and cyber programs
  - Enhanced Solutions for the Information Technology Enterprise (E-SITE)
  - Restricted programs



Capabilities & Key Programs

Maritime/Land Systems & Sensors

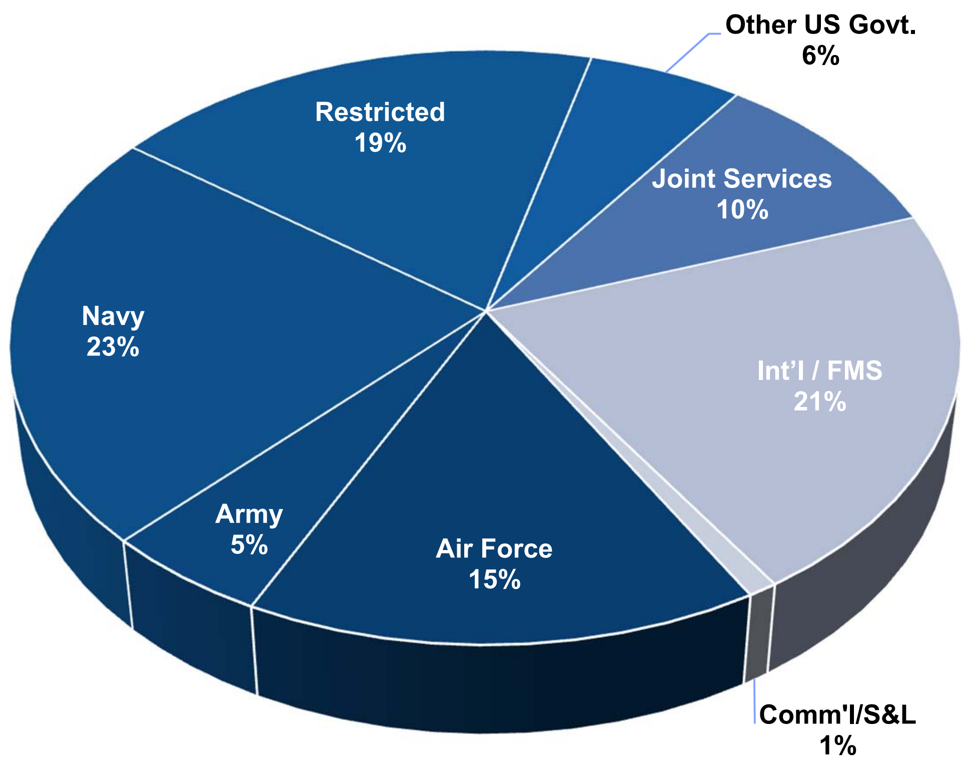
- Ground and maritime radar systems; nuclear ship propulsion and power generation systems; shipboard missile and encapsulated payload launch systems; integrated bridge systems; unmanned maritime vehicles; high-resolution undersea sensors; deep-sea packaging; and mission integration.
- **Key programs:**
  - Surface Electronic Warfare Improvement Program (SEWIP) Block III
  - Ground/Air Task Oriented Radar (G/ATOR)
  - Submarine power, propulsion, launch and sensing systems for Ohio, Virginia and Columbia class submarines
  - AQS-24B Mine-hunting System
  - Restricted programs

Navigation, Targeting & Survivability

- Competencies include EO/IR and RF self-protection; targeting and surveillance systems; digitized cockpits; and inertial navigation systems.
- **Key programs:**
  - LITENING Advanced Targeting Pod
  - Large Aircraft and Common Infrared Countermeasures (LAIRCM, DoN LAIRCM, CIRCM) systems
  - APR-39 DV(2) and EV(2) Radar Warning Receiver programs
  - Embedded Global Positioning System (GPS)/Inertial Navigation Systems-Modernization (EGI-M) program
  - UH-60V Black Hawk integrated mission equipment package
  - Restricted programs

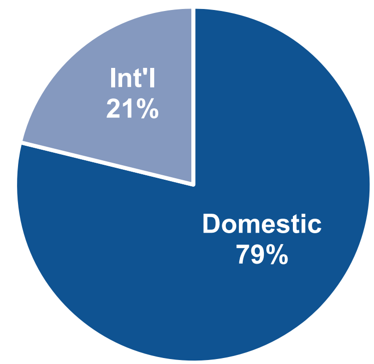
Mission Systems 2019 Sales Mix

Sales by Customer

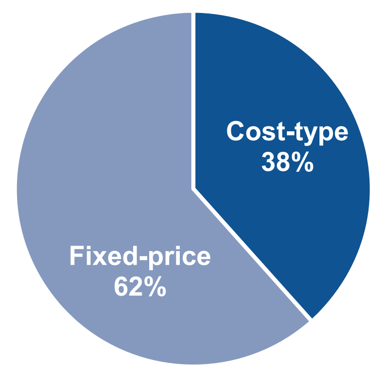


Revenue Distributions

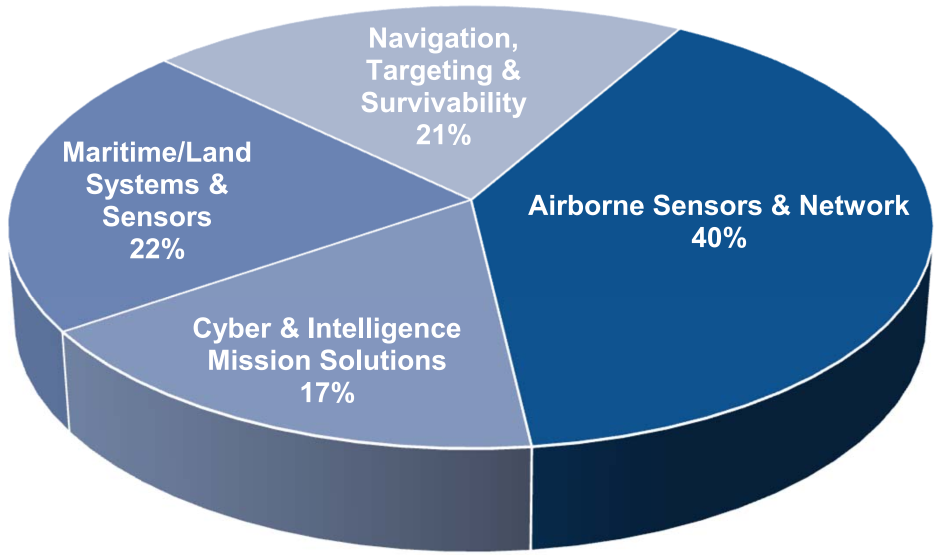
International v. Domestic



Contract Type



2019 Sales Mix



Space Systems

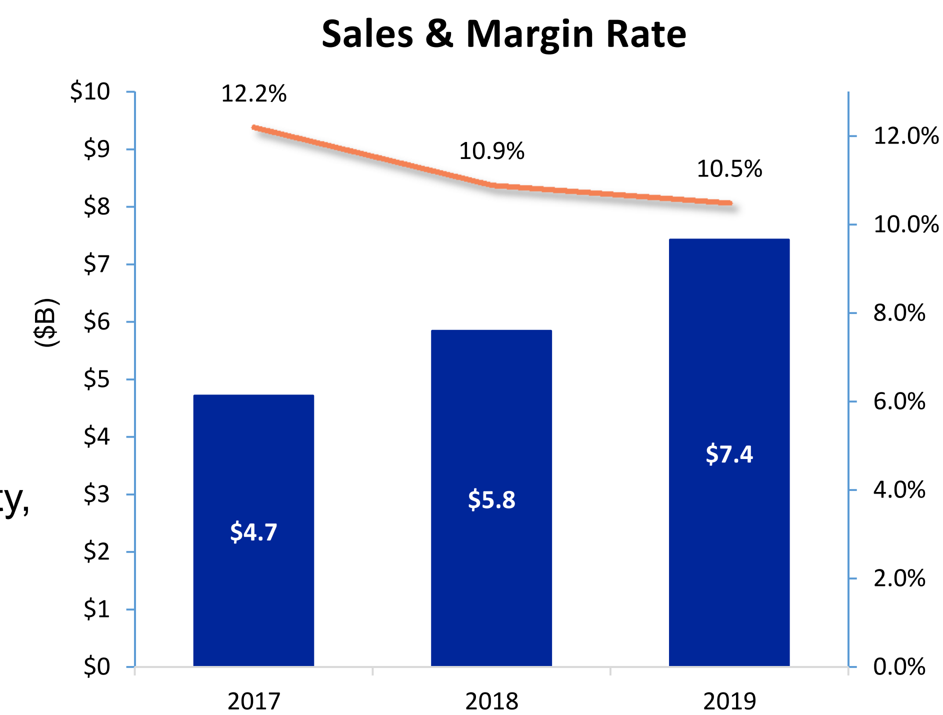
Space Systems

Performance

- Growing sector aligned with emerging government space priorities and nuclear triad recapitalization
- Large restricted footprint due to differentiated technologies supporting evolving National Security threats
- Solid margin performance and cash generation

Strategy

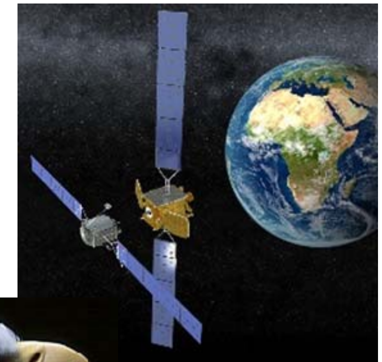
- End to end space, launch, and missile systems provider serving national security, civil & commercial customers
- Develop disruptive technologies
- Maintain focus on program execution
- Attract, develop, and maintain world class workforce



Capabilities & Key Programs

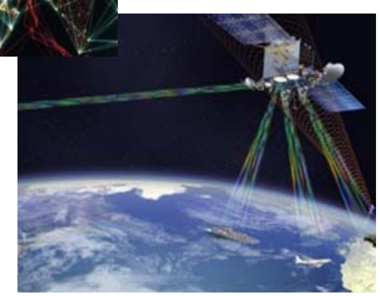
Launch & Strategic Missiles

- Competencies include strategic missile sustainment as well as the production of medium- and large-class rocket propulsion systems for human and cargo launch vehicles, hypersonic boosters and missile defense interceptors.
- **Key programs:**
  - Missile defense systems and interceptor boosters for Ground-based Midcourse Defense (GMD) system
  - Antares rocket for Commercial Resupply Services (CRS)
  - Solid rocket motors for NASA’s Space Launch System (SLS) heavy lift vehicle
  - Solid rocket motors for U.S. Navy's Trident II Fleet Ballistic Missile program
  - GBSD Technology Maturation and Risk Reduction (TMRR)
  - Intercontinental Ballistic Missile (ICBM) Ground Subsystem Support Contract (GSSC)



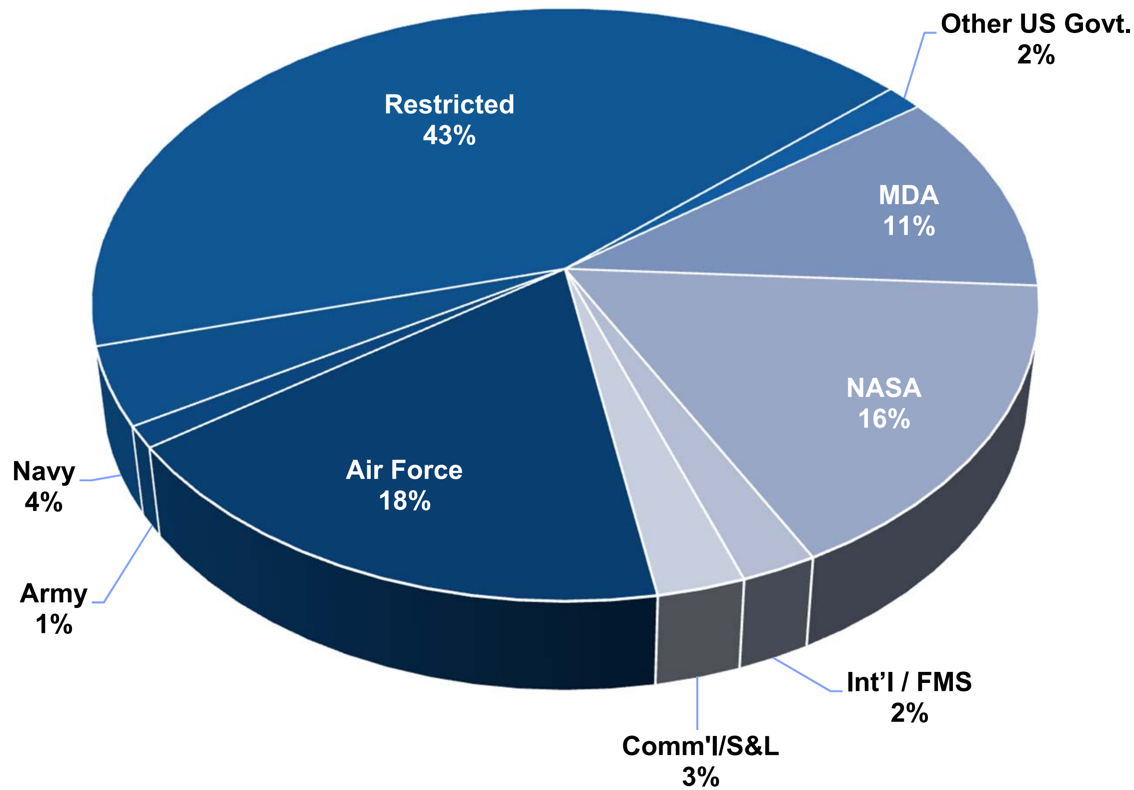
Space

- Designs, develops, manufactures and integrates spacecraft systems, subsystems, sensors, payloads and ground systems to deliver mission capability to national security, science and environmental, communications, on-orbit servicing, and human-rated space systems for earth orbit and deep-space exploration missions.
- **Key programs:**
  - Restricted
  - Cygnus spacecraft used in CRS contracts with NASA
  - Advanced Extremely High Frequency (AEHF) and Enhanced Polar System (EPS) payloads
  - Next-Generation Overhead Persistent Infrared Program (OPIR) satellites and payloads
  - James Webb Space Telescope (JWST)



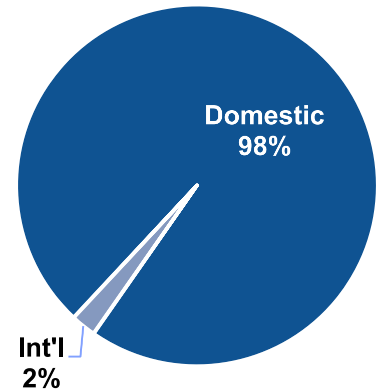
Space Systems 2019 Sales Mix

Sales by Customer



Revenue Distributions

International v. Domestic



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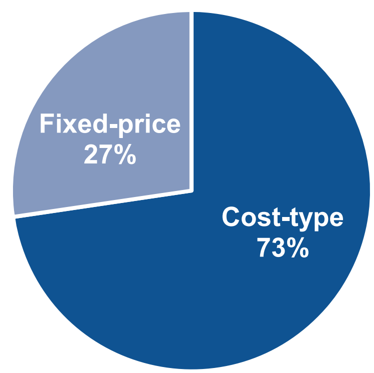
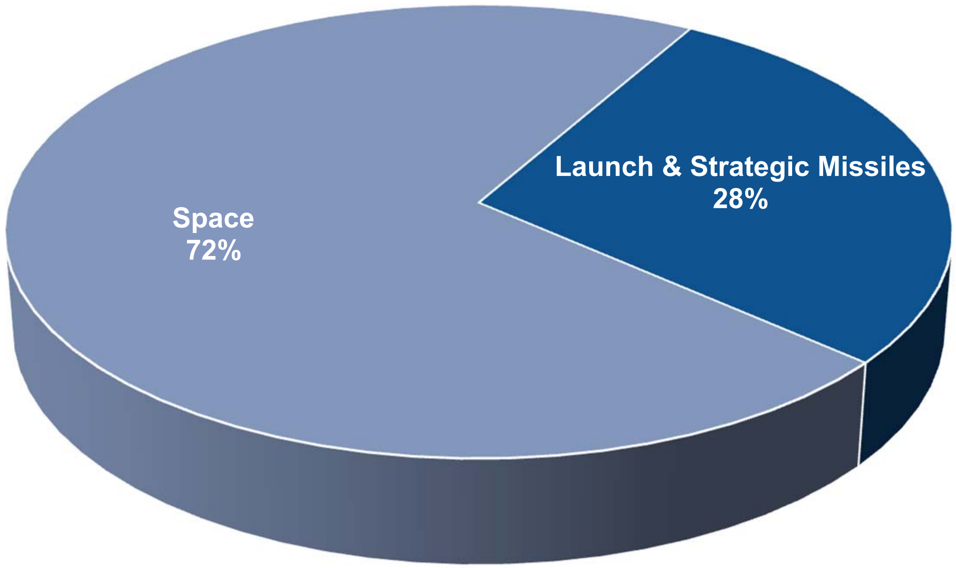
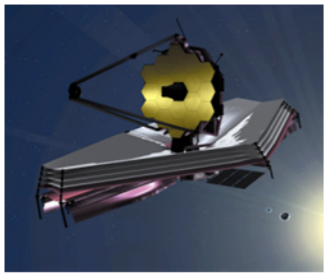


2019 Sales Mix





NOC 2020 Guidance

2020 Guidance as of July 30, 2020

2020 financial guidance, as well as outlook, trends, expectations and other forward looking statements provided by the company for 2020 and beyond, reflect the company's judgment based on the information available to the company as of July 30, 2020. The company is increasing its 2020 financial guidance based on year-to-date performance and its most current outlook for the remainder of the year. The company’s 2020 financial guidance reflects the impacts experienced to date from the global COVID-19 pandemic (discussed in the company’s Form 10-Qs), and what the company currently anticipates, based on what the company understands as of July 30, 2020, to be the impacts on the company for the remainder of the year. The company’s updated financial guidance assumes generally that the most significant adverse impacts from the pandemic on the company’s business, financial position, results of operations or cash flows occurred in the second quarter of 2020. However, the company cannot predict how the pandemic will evolve or what impact it will continue to have, and there can be no assurance that the company’s underlying assumptions are correct. As discussed more fully in the company’s Form 10-Qs (for Q1 and Q2), and among other factors, disruptions to the company’s operations (or those of its customers or supply chain), additional costs, disruptions in the market, and impacts on programs or payments relating to the global COVID-19 pandemic, as of July 30, 2020 and as it may evolve, can be expected to affect the company’s ability to achieve guidance or meet expectations. In addition, the government budget, appropriations and procurement processes can impact our customers, programs and financial results. These processes, including the timing of appropriations and the occurrence of an extended continuing resolution and/or prolonged government shutdown, as well as a breach of the debt ceiling, can impact the company's ability to achieve guidance or meet expectations.

2020 Guidance as of July 30, 2020*(1)

2020 (millions, except per share amounts)	As of 4/29/2020(1)	As of 7/30/2020(1)
Sales	35,000 – 35,400	**35,300 – 35,600**
Segment operating margin %(2)(3)	11.3 – 11.5%	**11.3 – 11.5%**
Total Net FAS/CAS pension adjustment(4)	~1,600	**~1,600**
Unallocated corporate expense		
Intangible asset amortization and PP&E step-up depreciation	~315	**~315**
Other items	~250	**~250**
Operating margin %	10.8 – 11.0%	**10.8 – 11.0%**
Interest expense	~590	**~590**
Effective tax rate %	~16.5%	**~16.5%**
Weighted average diluted shares outstanding	~168	**~168**
MTM-adjusted EPS(2)	$21.80 – $22.20	**$22.00 – $22.40**
Capital expenditures	~1,350	**~1,350**
Free cash flow(2)	3,150 – 3,450	**3,150 – 3,550**

* *2020 guidance contemplates Northrop Grumman is awarded the contract for the next phase of the Ground Based Strategic Deterrent program in the third quarter of 2020 in accordance with the U.S. Air Force's current acquisition strategy.*

(1) *2020 financial guidance, as well as outlook, trends, expectations and other forward looking statements provided by the company for 2020 and beyond, reflect the company's judgment based on the information available to the company as of July 30, 2020. The company is increasing its 2020 financial guidance based on year-to-date performance and its most current outlook for the remainder of the year. The company's 2020 financial guidance reflects the impacts experienced to date from the global COVID-19 pandemic (discussed in the company's Form 10-Qs), and what the company currently anticipates, based on what the company understands as of July 30, 2020, to be the impacts on the company for the remainder of the year. The company's updated financial guidance assumes generally that the most significant adverse impacts from the pandemic on the company's business, financial position, results of operations or cash flows occurred in the second quarter of 2020. However, the company cannot predict how the pandemic will evolve or what impact it will continue to have, and there can be no assurance that the company's underlying assumptions are correct. As discussed more fully in the company's Form 10-Qs (for Q1 and Q2), and among other factors, disruptions to the company's operations (or those of its customers or supply chain), additional costs, disruptions in the market, and impacts on programs or payments relating to the global COVID-19 pandemic, as of July 30, 2020 and as it may evolve, can be expected to affect the company's ability to achieve guidance or meet expectations. In addition, the government budget, appropriations and procurement processes can impact our customers, programs and financial results. These processes, including the timing of appropriations and the occurrence of an extended continuing resolution and/or prolonged government shutdown, as well as a breach of the debt ceiling, can impact the company's ability to achieve guidance or meet expectations.*

(2) *Non-GAAP metric. See Appendix.*

(3) *Effective April 1, 2020, certain unallowable costs previously included in segment operating results are now reported in Unallocated corporate expense within operating income.*

(4) *Total Net FAS/CAS pension adjustment is presented as a single amount consistent with our historical presentation, and includes $800 million of expected CAS pension cost and $800 million of expected FAS pension benefit. $410 million of FAS (service-related) pension cost is reflected in operating income and $1,210 million of FAS (non-service) pension benefit is reflected below operating income. CAS pension cost continues to be recorded in operating income.*

NORTHROP GRUMMAN

2020 Sector Guidance as of July 30, 2020*(1)

	As of 4/29/2020(1)	As of 7/30/2020(1)
Aeronautics Systems		
Sales $B	Low 11	**Low to Mid 11**
OM Rate	~10%	**~10%**
Defense Systems		
Sales $B	Mid 7	**Mid 7**
OM Rate	Mid 10%	**Mid 10%**
Mission Systems		
Sales $B	High 9	**High 9**
OM Rate	Low to Mid 14%	**Low to Mid 14%**
Space Systems		
Sales $B	Low 8	**Low 8**
OM Rate	Low to Mid 10%	**Low to Mid 10%**

* *2020 guidance contemplates Northrop Grumman is awarded the contract for the next phase of the Ground Based Strategic Deterrent program in the third quarter of 2020 in accordance with the U.S. Air Force's current acquisition strategy.*

(1) *2020 financial guidance, as well as outlook, trends, expectations and other forward looking statements provided by the company for 2020 and beyond, reflect the company's judgment based on the information available to the company as of July 30, 2020. The company is increasing its 2020 financial guidance based on year-to-date performance and its most current outlook for the remainder of the year. The company's 2020 financial guidance reflects the impacts experienced to date from the global COVID-19 pandemic (as discussed in the company's Form 10-Qs), and what the company currently anticipates, based on what the company understands as of July 30, 2020, to be the impacts on the company for the remainder of the year. The company's updated financial guidance assumes generally that the most significant adverse impacts from the pandemic on the company's business, financial position, results of operations or cash flows occurred in the second quarter of 2020. However, the company cannot predict how the pandemic will evolve or what impact it will continue to have, and there can be no assurance that the company's underlying assumptions are correct. As discussed more fully in the company's Form 10-Qs (for Q1 and Q2), and among other factors, disruptions to the company's operations (or those of its customers or supply chain), additional costs, disruptions in the market, and impacts on programs or payments relating to the global COVID-19 pandemic, as of July 30, 2020 and as it may evolve, can be expected to affect the company's ability to achieve guidance or meet expectations. In addition, the government budget, appropriations and procurement processes can impact our customers, programs and financial results. These processes, including the timing of appropriations and the occurrence of an extended continuing resolution and/or prolonged government shutdown, as well as a breach of the debt ceiling, can impact the company's ability to achieve guidance or meet expectations.*

2020 – 2022 Pension Estimates* as of 1/30/20

	2020E	2021E	2022E
Total Net FAS/CAS adjustment	~1,600	~1,750	~1,800
CAS	~800	~950	~910
FAS service expense	~(410)	~(390)	~(360)
FAS non-service benefit	~1,210	~1,190	~1,250
Required Funding	~100	~100	~750

** Assumes a 3.39% discount rate and an 8% long-term rate of return for all years presented*

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Pension Sensitivities[(1)]

Mark-to-Market/ Net Pension Liability		Inc/(Dec) to Expense ($M)
Discount rate	+25 bps	~(1,000)
	-25 bps	~1,100
Plan asset returns	+100 bps	~(300)
	-100 bps	~300

Non-Service FAS		Inc/(Dec) to Expense ($M)
Discount rate	+25 bps	~50
	-25 bps	~(55)
Plan asset returns	+100 bps	~(25)
	-100 bps	~25

(1) From 2020 discount rate of 3.39% and assumed net pension asset returns of 8.0%

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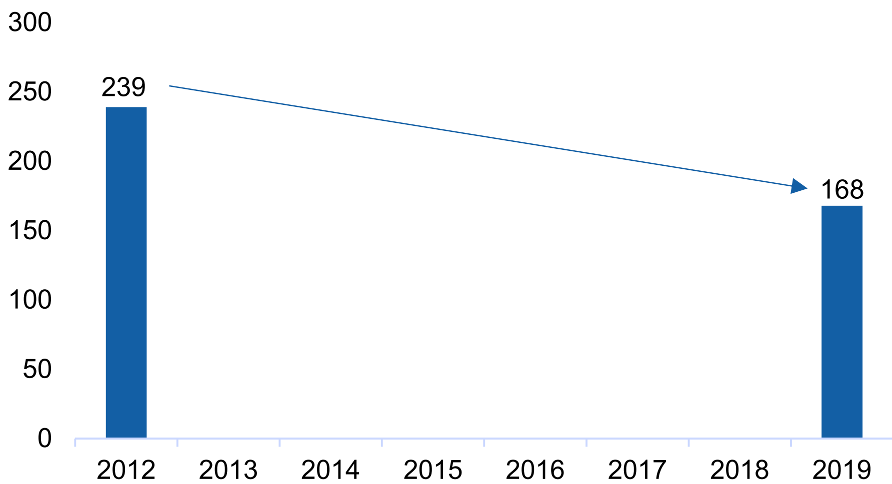
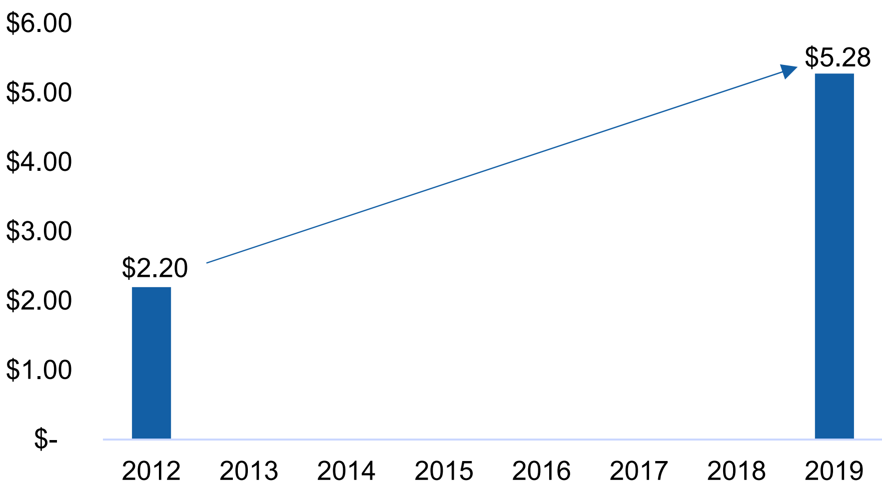
Consistent Return of Cash to Shareholders

Shares Outstanding



Annualized Dividend



Share Repurchases

- **60M share repurchase program completed in October 2015 @ average price of ~$125 per share**
- **>50% reduction in shares outstanding since 2003 @ average price of $86.70 per share**
- **$1 billion ASR announced in Q4 2018 completed in Jan. 2019, retiring 3.84 million shares @ average price of ~$260.**

Dividends

- **20% Dividend increase in 2018, including:**
  - **10% off-cycle increase in January**
  - **9% increase in May**
- **10% Dividend increase in May 2019**
- **10% Dividend increase in May 2020**

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2019 ESG Report Card

- Dow Jones Sustainability North America Index for the fourth consecutive year
- AA rating from MSCI for environmental, social and governance management and performance
- One of Corporate Responsibility Magazine's 100 Best Corporate Citizens
- One of DiversityInc's Top 50 Companies for Diversity for the tenth year in a row
- Number one for both veterans and people with disabilities
- Received the highest ranking for the fifth year in a row on the Disability Equality Index
- Named a “Best Place to Work For Disability Inclusion”
- Achieved a perfect score on the Corporate Equality Index and designated a “Best Place to Work for LGBTQ Equality”
- A leadership score of A- in CDP’s 2019 climate change program for the eighth consecutive year
- Ranking by Indeed as one of the 50 Top-Rated Workplaces

Appendix

Non-GAAP Definitions

Non-GAAP Financial Measures Disclosure: This presentation contains non-GAAP (accounting principles generally accepted in the United States of America) financial measures, as defined by SEC (Securities and Exchange Commission) Regulation G and indicated by a footnote in the presentation. Definitions for the non-GAAP measures are provided below and reconciliations are provided in this presentation. Other companies may define these measures differently or may utilize different non-GAAP measures.

MTM-adjusted diluted EPS: Diluted earnings per share excluding the per share impact of any potential MTM (expense) benefit and related tax impacts. This measure may be useful to investors and other users of our financial statements as a supplemental measure in evaluating the company's underlying financial performance per share by presenting the company's diluted earnings per share results before the non-operational impact of pension and OPB actuarial gains and losses.

Segment operating income and segment margin rate: Segment operating income and segment operating margin rate (segment operating income divided by sales) reflect total earnings from our four segments, including allocated pension expense recognized under CAS, and excluding unallocated corporate items and FAS pension expense. These 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 should not be considered in isolation or as alternatives to operating results presented in accordance with GAAP.

Free cash flow: Net cash provided by operating activities less capital expenditures. We use free cash flow as a key factor in our planning for, and consideration of, acquisitions, stock repurchases and the payment of dividends. This 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.

Non-GAAP Reconciliations – Segment Operating Income

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	Three Months Ended December 31		Year Ended December 31	
$ millions	2019	2018	2019	2018
Sales	$ 8,721	$ 8,156	$ 33,841	$ 30,095
Segment operating income	1,024	927	3,909	3,447
Segment operating margin rate	11.7%	11.4%	11.6%	11.5%
Reconciliation to operating income				
Net FAS (service)/CAS pension adjustment	$ 119	$ 173	$ 465	$ 613
Unallocated corporate expense:				
Intangible asset amortization and PP&E step-up depreciation	(98)	(93)	(390)	(220)
MTM-related deferred state tax benefit	81	29	81	29
Other unallocated corporate expense	10	(93)	(96)	(89)
Unallocated corporate expense	(7)	(157)	(405)	(280)
Operating income	$ 1,136	$ 943	$ 3,969	$ 3,780
Operating margin rate	13.0%	11.6%	11.7%	12.6%

Non-GAAP Reconciliations –
MTM-adjusted net earnings and earnings per share

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($ millions, except per share amounts)	Three Months Ended December 31 2019	Three Months Ended December 31 2018	Year Ended December 31 2019	Year Ended December 31 2018
MTM-adjusted net earnings				
Net earnings	$ (409)	$ 356	$ 2,248	$ 3,229
MTM expense	1,800	655	1,800	655
MTM-related deferred state tax benefit[1]	(81)	(29)	(81)	(29)
Federal tax benefit of items above[1]	(361)	(131)	(361)	(131)
After-tax MTM adjustment	$ 1,358	$ 495	$ 1,358	$ 495
MTM-adjusted net earnings	$ 949	$ 851	$ 3,606	$ 3,724
MTM-adjusted per Share Data				
Diluted EPS[2]	$ (2.43)	$ 2.06	$ 13.22	$ 18.49
MTM expense per share	10.63	3.80	10.59	3.76
MTM-related deferred state tax benefit per share[1]	(0.48)	(0.17)	(0.48)	(0.17)
Federal tax benefit of items above per share[1]	(2.13)	(0.76)	(2.12)	(0.75)
After-tax MTM adjustment per share	$ 8.02	$ 2.87	$ 7.99	$ 2.84
Dilution adjustments[2]	$ 0.02	$ –	$ –	$ –
MTM-adjusted diluted EPS[2]	$ 5.61	$ 4.93	$ 21.21	$ 21.33

[1] Based on the statutory federal tax rate and a blended state tax rate for all periods presented.

[2] Fourth quarter 2019 diluted EPS excludes the dilutive effect of awards granted to employees under stock-based compensation plans as such awards would be antidilutive. MTM-adjusted diluted EPS is calculated using weighted-average diluted shares outstanding of 169.3 million.

Non-GAAP Reconciliations – Free Cash Flow

	Three Months Ended December 31		%	Year Ended December 31		%
$ millions	2019	2018	Change	2019	2018	Change
Net cash provided by operating activities	$ 2,464	$ 2,377	4%	$ 4,297	$ 3,827	12%
Less: capital expenditures	(471)	(463)	2%	(1,264)	(1,249)	1%
Free cash flow	$ 1,993	$ 1,914	4%	$ 3,033	$ 2,578	18%

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