

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

FORM 10-K

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

For the fiscal year ended December 31, 2002

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

For the transition period from
to

Commission file number
1-16411

NORTHROP GRUMMAN CORPORATION

(Exact name of registrant as specified in its charter)

DELAWARE

(State or other jurisdiction of
incorporation or organization)

95-4840775

(I.R.S. Employer Identification
Number)

1840 Century Park East, Los Angeles, California 90067

www.northropgrumman.com

(Address of principal executive offices and internet site)

(310) 553-6262

(Registrant's telephone number, including area code)

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

Title of each class

Common Stock, \$1 par value

Name of each exchange on which registered

New York Stock Exchange
Pacific Exchange

Series B Convertible Preferred Stock

7.25% Equity Security Units

New York Stock Exchange

New York Stock Exchange

Securities Registered pursuant to Section 12(g) of the Act:

None

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 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 is an accelerated filer (as defined in Exchange Act Rule 12b-2).

Yes

No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

As of March 7, 2003, 182,889,368 shares of Common Stock were outstanding, and the aggregate market value of the Common Stock (based upon the closing price of the stock on the New York Stock Exchange) of the Registrant held by nonaffiliates was approximately \$15,085 million.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Proxy Statement for the 2003 Annual Meeting of Stockholders. Part III

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PART I

Item 1. Business

Originally formed in California in 1939, Northrop Corporation was reincorporated in Delaware in 1985. In 1994 the company purchased the outstanding common stock of Grumman Corporation and, effective May 18, 1994, Northrop Corporation was renamed Northrop Grumman Corporation (the company). On April 2, 2001, NNG, Inc., a newly formed Delaware holding company, exchanged its common shares for all of the outstanding Northrop Grumman Corporation common shares on a one-for-one basis, through a merger in which Northrop Grumman Corporation became a subsidiary of NNG, Inc. In connection with this merger, NNG, Inc. changed its name to Northrop Grumman Corporation and the former Northrop Grumman Corporation changed its name to Northrop Grumman Systems Corporation (Northrop Systems).

In April 2001, the company purchased approximately 97 percent of the common stock and approximately 59 percent of the preferred stock of Litton Industries, Inc. (Litton). The company issued 13,000,000 shares of its common stock and 3,500,000 shares of its preferred stock and paid cash for the balance of the Litton shares. In May and June 2001, the company acquired all of the remaining shares of Litton common and preferred stock for cash.

In November 2001, pursuant to a tender offer that expired on November 29, 2001, the company purchased approximately 80.7 percent of the outstanding shares of Newport News Shipbuilding Inc. (Newport News). For the year ended December 31, 2001, the company accounted for the remaining 19.3 percent of Newport News common shares as minority interest. On January 18, 2002, the company acquired the remaining 19.3 percent of Newport News shares not purchased in the tender offer.

On December 11, 2002, the company issued 69.4 million shares in exchange for all outstanding shares of TRW Inc. The company completed the sale of TRW's Automotive business (Auto) to The Blackstone Group on February 28, 2003. The company received approximately \$4.7 billion, comprised of \$3.9 billion in cash and debt retained by Auto, a \$600 million payment-in-kind note and a 19.6 percent investment in the new enterprise. Cash proceeds from the sale, along with cash received from completion of the TRW acquisition will be used primarily to pay down debt. In connection with the acquisition of TRW, the company entered into a formal stipulation and consent decree (Final Judgment) with the United States Department of Justice that was filed in the U. S. District Court for the District of Columbia on December 11, 2002. Key provisions of the consent decree are intended to assure that the merger will not impede fair and open competition related to certain electronic satellite payloads. The consent decree does not require the divestiture of any businesses and will permit the company to operate its businesses and those of TRW as planned. The retained portions of TRW represent the new Mission Systems and Space Technology sectors discussed more fully herein. Additional information describing the aforementioned mergers and acquisitions is contained in the "Acquisitions" footnote to the Consolidated Financial Statements in Part II, Item 8.

The company operates in seven business sectors: Electronic Systems, Newport News, Ship Systems, Information Technology, Integrated Systems, Mission Systems and Space Technology. For financial reporting purposes the Electronic Systems, Information Technology, Integrated Systems, Mission Systems and Space Technology sectors are each reportable segments. In accordance with the provisions of Statement of Financial Accounting Standards (SFAS) No. 131 – *Disclosures about Segments of an Enterprise and Related Information*, Newport News and Ship Systems results are aggregated and reported as the Ships segment.

In 2002, the company decided to sell the majority of the businesses comprising its Component Technologies operating sector, and also sold two of the businesses in its Electronic Systems sector, Ruggedized Displays and Electron Devices. These businesses, Auto and the aerostructures business sold in 2000 are reported as discontinued operations. Additional information is contained in the "Dispositions and Discontinued Operations" footnote to the Consolidated Financial Statements in Part II, Item 8.

Electronic Systems is a leading designer, developer and manufacturer of a wide variety of advanced defense electronics and systems. Electronic Systems provides airborne radar systems, secondary surveillance systems, inertial navigation systems and sensors, electronic warfare systems, precision weapons, air traffic control systems, air

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defense systems communications systems, space systems, marine systems, oceanic and naval systems, integrated avionics systems and automation and information systems. Headquartered in Baltimore, Maryland the sector includes the Aerospace Electronic Systems, C4ISR&N, Defensive Electronic Systems, Navigation Systems, and Space Systems divisions. Operations not included in these divisions are reported as "Other". Key products include fire control radars for the F-16 fighter aircraft, the F-22 air dominance fighter, the F-35 joint strike fighter, and the Longbow Apache helicopter; the AWACS airborne early warning radar; Joint STARS air-to-ground surveillance radar sensor; Longbow Hellfire missile; tactical military radars, countrywide air defense systems, airborne electronic countermeasures systems, sophisticated undersea warfare systems and naval propulsion and power generation systems. Electronic Systems has 51 locations worldwide, 19 international offices and approximately 22,000 employees.

Newport News' primary business is the design, construction, repair, maintenance, overhaul, life-cycle support and refueling of nuclear-powered aircraft carriers and the design, life-cycle support and construction of nuclear-powered submarines for the U.S. Navy. Newport News is the nation's sole designer, builder and refueler of nuclear-powered aircraft carriers and only one of two companies capable of designing and building nuclear-powered submarines. Major programs are the Nimitz-class nuclear powered aircraft carriers and the Virginia-class submarine program. The sector also provides after-market services for a wide array of naval and commercial vessels. Headquartered in Newport News, Virginia, the sector has approximately 18,000 employees.

Ship Systems is one of the nation's leading full service systems providers for the design, engineering, construction, and life cycle support of major surface ships for the U.S. Navy, U.S. Coast Guard and international navies, and for commercial vessels of all types. Major programs for the U.S. Navy include the WASP LHD 1 Class and San Antonio LPD 17 Class amphibious assault ships, the Arleigh Burke DDG 51 and next generation DD(X) destroyers. The company is also a partner in the Coast Guard's Deepwater modernization program and produces double-hulled crude oil tankers. Headquartered in Pascagoula, Mississippi, with primary operations in Pascagoula, Mississippi; New Orleans, Louisiana; Gulfport, Mississippi; and Tallulah, Louisiana, as well as in fleet support offices in the U.S. and Japan. Ship Systems has more than 16,000 employees.

The Information Technology segment consists of four lines of business: Government Information Technology, Enterprise Information Technology, Technology Services, and Commercial Information Technology. Government Information Technology covers a wide range of large-scale systems integration, solutions and services programs. This work is performed for government customers at the DOD, federal, state and local levels, and covers command, control, communications, computers, intelligence, surveillance and reconnaissance (C⁴ISR), training and simulation; science and technology; and information systems markets. Enterprise Information Technology provides enterprise-wide infrastructure, training and simulation, mission support, and science and technology solutions and services to the defense and civil marketplace, including the delivery and integration of commercially available computers, networks, hardware, software, and peripherals. Technology Services include base and range support, training and simulation, information systems, and state and local information technology services. Commercial Information Technology provides complete IT outsourcing services directed at the commercial market. In addition, this sector provides information technology services to commercial customers and to all Northrop Grumman's sectors. Headquartered in Herndon, Virginia, the sector employs more than 23,000 professionals located in 500 sites worldwide.

Integrated Systems is a leader in the design, development and production of airborne early warning, electronic warfare and surveillance and battlefield management systems. Integrated Systems includes the Air Combat, Airborne Early Warning & Electronic Warfare Systems, and Airborne Ground Surveillance & Battle Management Systems divisions. Integrated Systems is the prime contractor for the Joint STARS advanced airborne targeting and battle management system, Global Hawk and the B-2 Spirit stealth bomber. The sector has principal roles in the F/A-18 Hornet strike fighter and F-35 joint strike fighter programs. Integrated Systems is upgrading the EA-6B Prowler electronic countermeasures aircraft and produces the E-2C Hawkeye early warning aircraft. Headquartered in El Segundo, California, the sector has approximately 12,000 employees.

Mission Systems, headquartered in Reston, Virginia, is a leading global system integrator of complex, mission-enabling systems for government, military and business clients. The organization's technology leadership spans four business areas: Command, Control and Intelligence Systems, Federal and Civil Information Systems,

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Missile Systems, and Technical Services. Products and services are focused on the fields of command and control; strategic missiles; missile and air defense; airborne reconnaissance; unmanned aerial vehicles; intelligence management and processing; electro-magnetic and infrared analysis and decision support systems. Mission Systems has 15,000 employees in more than 300 locations around the world.

Space Technology develops a broad range of systems at the leading edge of space, defense and electronics technology. The sector creates products for U.S. government and commercial customers that contribute significantly to the nation's security and leadership in science and technology. Its business areas focus on the design and manufacture of spacecraft systems and subsystems; electronic systems, including communication systems for space and defense; commercial telecommunications products; digital broadband space payloads; space science instruments; advanced avionics systems; high energy laser systems; and spacecraft products, including solar arrays and reflectors. Headquartered in Redondo Beach, California, Space Technology has approximately 9,000 employees in more than 25 locations around the world.

The company's principal executive offices are located at 1840 Century Park East, Los Angeles, California 90067. The company's telephone number is (310) 553-6262. The company's home page on the Internet is www.northropgrumman.com. The company makes web site content available for information purposes only. It should not be relied upon for investment purposes, nor is it incorporated by reference into this Form 10-K.

Throughout this Form 10-K, the company incorporates by reference information from parts of other documents filed with the Securities and Exchange Commission (SEC). The SEC allows the company to disclose important information by referring to it in this manner, and you should review this information.

The company's annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and proxy statement for the company annual shareholders' meeting, as well as any amendments to those reports, are available free of charge through the company web site as soon as reasonably practicable after electronic filing of such material with the SEC. You can learn more about the company by reviewing the company SEC filings on the company web site. The company SEC reports can be accessed through the investor relations page of the company web site. The SEC also maintains a web site at www.sec.gov that contains reports, proxy statements and other information regarding SEC registrants, including Northrop Grumman.

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Item 2. Properties

The major locations, general status of the company's interest in the property, and identity of the industry segments that use the property described are indicated in the following table.

Location	Property Interest
Albuquerque, New Mexico (3) (5) (a) (c)	Leased
Annapolis, Maryland (1) (a) (b) (d) (e)	Owned, Leased
Apopka, Kansas (1) (b)	Owned
Arlington, Virginia (1) (3) (4) (5) (7) (a) (e)	Leased
Aurora, Colorado (3) (5) (a) (e)	Owned, Leased
Avondale, Louisiana (2) (a) (c) (e)	Owned, Leased
Azusa, California (1) (a) (b) (c) (d) (e)	Owned, Leased
Baltimore, Maryland (1) (3) (5) (a) (c) (e)	Leased
Bellevue, Nebraska (3) (5) (a) (c)	Leased
Bethpage, New York (1) (4) (a) (b) (c) (d) (e)	Owned
Bourg-Les-Valence, France (1) (b)	Owned
Brea, California (7) (b)	Leased
Burlington, Canada (3) (5) (7) (a) (b)	Owned, Leased
Carson, California (5) (a)	Leased
Chantilly, Virginia (3) (5) (6) (a) (c)	Leased
Charlottesville, Virginia (1) (3) (a) (b) (e)	Owned, Leased
Cincinnati, Ohio (1) (b)	Leased
Clearfield, Utah (5) (a)	Leased
Coleshill, United Kingdom (7) (b)	Leased
Colorado Springs, Colorado (1) (3) (5) (a) (c)	Owned, Leased
Dallas, Texas (1) (3) (4) (5) (a) (b) (d) (e)	Leased
El Segundo, California (3) (4) (6) (a) (b) (c) (d) (e)	Owned, Leased
Elkridge, Maryland (1) (a) (c) (d)	Leased
Enfield, Canada (1) (b)	Owned
Fairfax, Virginia (3) (5) (a) (e)	Owned, Leased
Falls Church, Virginia (3) (5) (a)	Leased
Freiburg, Germany (1) (b) (c) (e)	Owned, Leased
Gaithersburg, Maryland (1) (3) (a)	Leased
Garland, Texas (1) (b)	Owned
Gulfport, Mississippi (2) (a) (b)	Owned, Leased
Hagerstown, Maryland (1) (e)	Leased
Harahan, Louisiana (2) (c)	Leased
Hawthorne, California (3) (4) (a) (b) (c) (d) (e)	Owned, Leased
Heidelberg, Germany (1) (b)	Owned
Herndon, Virginia (1) (3) (a) (c)	Leased
Hicksville, New York (4) (d) (e)	Owned
Hollywood, Maryland (4) (a)	Leased
Hunt Valley, Maryland (1) (a) (b) (e)	Owned, Leased
Huntsville, Alabama (1) (3) (5) (a) (b) (c) (e)	Owned, Leased
Irving, Texas (4) (a)	Leased
Jacksonville, Florida (2) (4) (a) (c) (d) (e)	Leased
Lake Charles, Louisiana (4) (a) (b) (e)	Owned, Leased
Lanham, Maryland (1) (3) (5) (a)	Leased

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Lexington, Kentucky (3) (4) (a) (c)	Owned, Leased
Linthicum, Maryland (1) (a) (b) (c) (e)	Owned, Leased
Los Angeles, California (1) (5) (6) (7) (a) (c)	Leased
Manhattan Beach, California (6) (a) (d)	Leased
McLean, Virginia (3) (5) (a) (e)	Leased
Melbourne, Florida (4) (a) (b) (c) (e)	Owned, Leased
New Malden, United Kingdom (1) (b) (e)	Leased
Newport News, Virginia (2) (3) (5) (a) (b) (c) (d) (e)	Owned, Leased
Northridge, California (1) (b)	Leased
Norwalk, Connecticut (1) (b)	Leased
Oakland, California (3) (5) (a)	Leased
Olathe, Kansas (7) (a)	Owned
Palmdale, California (4) (a) (b) (c) (d) (e)	Owned, Leased
Pascagoula, Mississippi (2) (a) (b) (c) (d) (e)	Owned, Leased
Point Mugu, California (4) (a) (b) (c) (e)	Owned, Leased
Pomezia Rome, Italy (1) (b)	Owned
Rancho Carmel, California (6) (a) (d) (e)	Owned
Reading, Massachusetts (3) (a) (c)	Leased
Redondo Beach, California (6) (a) (b) (c) (d) (e)	Owned, Leased
Reston, Virginia (3) (5) (a)	Leased
Rolling Meadows, Illinois (1) (3) (a) (b) (c) (e)	Owned, Leased
Sacramento, California (5) (e)	Leased
Salt Lake City, Utah (1) (b) (c)	Owned, Leased
San Bernadino, California (5) (a)	Leased
San Clemente, California (6) (a) (b) (c) (d) (e)	Owned, Leased
San Diego, California (1) (2) (3) (4) (5) (6) (a) (b) (c) (d) (e)	Owned, Leased
San Jose, California (1) (3) (5) (a)	Leased
San Pedro, California (3) (a) (c) (e)	Leased
Santa Isabel, Puerto Rico (1) (b) (e)	Leased
Sierra Vista, Arizona (1) (3) (5) (a) (c)	Leased
St. Augustine, Florida (4) (a) (b) (c) (e)	Owned, Leased
Sunnyvale, California (1) (3) (5) (a) (b)	Owned, Leased
Sykesville, Maryland (1) (b)	Owned
Tallulah, Louisiana (2) (b)	Leased
Tempe, Arizona (1) (4) (5) (a) (b)	Owned, Leased
Toronto, Canada (1) (b) (e)	Owned, Leased
Utica, New York (4) (7) (a) (b)	Owned, Leased
Virginia Beach, Virginia (3) (4) (a) (c)	Owned, Leased
Warner Robins, Georgia (1) (3) (4) (6) (a) (c)	Owned, Leased
Washington, District of Columbia (2) (3) (4) (5) (a)	Leased
Westwego, Louisiana (2) (a) (c)	Owned, Leased
Williamsville, New York (1) (a) (b)	Leased
Woodland Hills, California (1) (a) (b) (c)	Owned, Leased
York, Pennsylvania (7) (e)	Owned

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Following each described property are numbers indicating the reporting segments utilizing the property:

- (1) Electronic Systems
- (2) Ships
- (3) Information Technology
- (4) Integrated Systems
- (5) Mission Systems
- (6) Space Technology
- (7) General Corporate Asset

Following each described property are letters indicating the types of facilities located at each location:

- (a) office
- (b) manufacturing
- (c) warehouse
- (d) research and testing
- (e) other

Government-owned facilities used or administered by the company consist of approximately 2 million square feet at various locations across the United States.

The company believes its properties are well-maintained and in good operating condition and that the productive capacity of the company's properties is adequate to meet current contractual requirements for the foreseeable future.

Item 3. Legal Proceedings

Various claims and legal proceedings arise in the ordinary course of business and are pending against the company and its properties. Based upon the information available, the company does not believe that the resolution of any of these proceedings will have a material adverse effect upon its operations or financial condition.

Departments and agencies of the U.S. Government have the authority to investigate various transactions and operations of the company and the results of such investigations may lead to administrative, civil or criminal proceedings, the ultimate outcome of which could be fines, penalties, repayments, compensatory or treble damages. U.S. Government regulations provide that certain findings against a contractor may lead to suspension or debarment from future U.S. Government contracts or the loss of export privileges for a company or an operating division or subdivision. Suspension or debarment could have a material adverse effect on the company because of its reliance on government contracts. Based on available information, the company does not believe, but can give no assurance, that any matter resulting from a U.S. Government investigation would have a material adverse effect on its results of operations or financial condition. Matters described below include cases in which the U.S. Government is a party. The company is unable to predict whether or not adverse decisions in these matters would have a material adverse effect on the company's financial condition.

As previously reported, in October 1999 in U.S. ex rel. *Jordan v. Northrop Grumman Corporation*, the company was served with a fifth amended complaint. The action was filed by the government in the United States District Court of the Central District of California in May 1995. The complaint alleges that the company violated the civil False Claims Act by knowingly supplying BQM-74C aerial target drones that contained various defective components between 1988 and 1998. The government seeks to recover damages up to approximately \$210 million plus penalties under theories of fraud, payment by mistake, unjust enrichment, breach of warranty and breach of contract. Damages awarded pursuant to the False Claims Act may be trebled by the court. The company denies the allegations and intends to vigorously defend this matter. Trial is set for April 1, 2003.

As previously reported, in August 1992 in U.S. ex rel. *Rex Robinson v. Northrop Grumman Corporation*, in the United States District Court for the Northern District of Illinois unsealed a complaint brought by four individuals in the name of the United States of America. The action was filed on August 10, 1989, seeking damages under the *qui tam* provision of the civil False Claims Act. On July 28, 1992, the government declined to intervene in this action. Plaintiffs seek damages of approximately \$113 million, plus penalties. Damages under the False Claims Act can be trebled. In 2001, the Civil Division of the U.S. Attorney's Office filed a motion to intervene in the action, which motion was granted on October 12, 2001. The company denies the allegations and intends to vigorously defend the action.

During 1996, in U.S. ex rel. *Bagley v. TRW Inc.*, the U.S. Department of Justice (DOJ) advised TRW Inc. (TRW) that it had been named as a defendant in lawsuits brought by a former employee originally filed under seal in 1994 and 1995 in the United States District Court for the Central District of California under the *qui tam* provisions of the civil False Claims Act. The DOJ subsequently advised that it would intervene in the litigation. In a consolidated complaint filed jointly by the former employee and the DOJ, it is alleged that TRW misclassified various costs and improperly charged those costs to certain of its federal contracts, that the United States has incurred substantial damages, and that TRW is liable for approximately \$56 million in single damages, subject to trebling, plus penalties, post-judgment interest, costs (including attorneys' fees) and "all other proper relief." All substantive allegations against TRW have been denied in its answer to the consolidated complaint. The company denies the allegations and intends to vigorously defend this matter. Trial is scheduled for November 2003.

On February 3, 2003, the Department of Justice filed a civil False Claims Act case against Newport News Shipbuilding, Inc. in the United States District Court for the Eastern District of Virginia in U.S. v. Newport News Shipbuilding, Inc. The government seeks single damages in an amount in excess of \$72 million, plus penalties, costs and interest. Damages may be trebled under the False Claims Act. The complaint alleges that the company improperly charged certain independent research and development costs to its government contracts with respect to the years 1994 through 1999. The company denies the allegations and intends to vigorously defend the matter.

The putative class action lawsuits filed against TRW relating to the company's then-proposed offer to acquire TRW, reported in TRW's Form 10-Q for the quarter ended March 31, 2002, have been dismissed with

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prejudice. The putative class action lawsuit filed against TRW on behalf of a proposed class of TRW shareholders in the United States District Court for the Northern District of Ohio was dismissed on October 3, 2002. The two putative class action lawsuits filed against TRW on behalf of a proposed class of TRW shareholders in Common Pleas Court, Cuyahoga County, Ohio, were dismissed on December 2, 2002.

In July and August 1998, three shareholder derivative lawsuits, respectively encaptioned *Zabielski v. Kent Kresa, et al.*, *Harbor Finance Partners v. Kent Kresa, et al.*, and *Clarren v. Kent Kresa, et al.*, were filed in the Superior Court of California for the County of Los Angeles. These lawsuits each contain similar allegations that the directors of the company and certain of its officers breached their fiduciary duties in connection with the shareholder vote approving the proposed acquisition of the company by Lockheed Martin Corporation, and that certain defendants engaged in stock trades in violation of federal and state securities laws. The lawsuits are purportedly brought on the company's behalf and do not seek relief against the company. On January 31, 2001, the State Court dismissed these actions with prejudice and plaintiffs subsequently filed a timely appeal. Oral argument took place on February 18, 2003, and the matter stands submitted. The defendants deny the allegations made in these actions and intend to vigorously defend the actions.

Environmental Matters

On December 18, 2000, the Mississippi Department of Environmental Quality (MDEQ) delivered to the Ingalls subsidiary of Litton, a notice of violation alleging use of non-compliant coatings, opacity violations and VOC emissions violations. The MDEQ subsequently requested that Ingalls, now named Northrop Grumman Ship Systems, Inc., perform an air permit compliance review. In the course of negotiations with respect to the review and required corrective actions the MDEQ has advised the company that it will seek penalties in excess of \$100,000 in connection with these matters.

On March 13, 2002, Lucas Western Inc. received written notice from the New York State Department of Environmental Conservation (DEC) that certain alleged violations of the Environmental Conservation Law of New York State by the Utica facility operated by Lucas Western had been referred for enforcement action. The alleged violations include discharge of pollutants to waters of the State without a permit and the discharge of material to the waters of the State in contravention of established water quality standards. The DEC is seeking payment of a penalty as well as a compliance plan for the elimination of such alleged discharges, including confirmatory sampling and sampling of any sediments and soil excavated during removal of the discharge. Lucas Western Inc. became an indirect wholly-owned subsidiary of the company upon the acquisition of TRW Inc. in the fourth quarter of 2002. The company believes the ultimate resolution of this matter will not have a material effect on the company's financial condition or results of operations.

Other Matters

The Company continues to cooperate with the previously disclosed SEC investigation pertaining to alleged failures to update disclosures in the joint proxy statement and prospectus issued by Northrop Grumman and Lockheed Martin Corporation on January 22, 1998 in connection with a meeting of Northrop Grumman's shareholders to approve the then-proposed (but subsequently abandoned) merger of the two companies.

Like many other industrial companies in recent years, and as a result of acquisition activities, the company is a defendant in lawsuits alleging personal injury as a result of exposure to asbestos integrated into its premises and certain historical products. The company no longer incorporates asbestos in any currently manufactured products. Many of these claims have been dismissed with no payment and the remaining resolved claims have involved amounts that were not material either singly or in the aggregate. Based on the information available to the company as of the date of filing of this report, the company does not believe that disposition of any or all of these matters would have a material adverse effect upon it.

NORTHROP GRUMMAN CORPORATION**Executive Officers of the Registrant**

The following individuals were the elected officers of the company as of March 7, 2003:

<u>Name</u>	<u>Age</u>	<u>Office Held</u>	<u>Since</u>	<u>Business Experience Last Five Years</u>
Kent Kresa	64	Chairman and Chief Executive Officer	2001	Chairman, President and Chief Executive Officer
Ronald D. Sugar	54	President and Chief Operating Officer	2001	President, Litton Industries, Inc.; Prior to May 2001 President and Chief Operating Officer of Litton Industries, Inc. (2000-2001); President and Chief Operating Officer of TRW Aerospace & Information Systems and Member of the Chief Executive Office of TRW, Inc. (1998-2000); Executive Vice President and General Manager of the TRW Automotive Electronics Group (1996-1998)
Herbert W. Anderson	63	Corporate Vice President and President, Information Technology Sector	2001	Corporate Vice President, President and Chief Executive Officer, Logicon, Inc.; Prior to January 1999, Corporate Vice President and General Manager, Data Systems & Services Division (1995-1998)
Frank G. Brandenburg	56	Corporate Vice President and President, Component Technologies Sector	2001	President, Component Technologies Sector; Prior to May 2001, Senior Vice President, Electronic Components and Materials Group, Litton Industries, Inc.; President and Chief Executive Officer of EA Industries Inc. (1997-1999);
Wesley G. Bush	41	Corporate Vice President and President, Space Technology Sector	2003	Corporate Vice President of Northrop Grumman Corporation; Prior to December 2002, Executive Vice President of TRW Inc. and President and Chief Executive Officer of TRW Aeronautical Systems (2001-2002); Vice President and General Manager, TRW Ventures, TRW Space & Electronics Group (2000-2001); Vice President and General Manager, Telecommunications Division, TRW Space & Electronics Group (1999); Vice President, Planning and Business Development, TRW Space and Electronics Group (1998).
Philip A. Dur	58	Corporate Vice President and President, Ship Systems Sector	2001	Vice President, Electronic Systems Sector; Prior to December 1999, Vice President, Worldwide Business Development and Strategy, Tenneco, Inc.

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<u>Name</u>	<u>Age</u>	<u>Office Held</u>	<u>Since</u>	<u>Business Experience Last Five Years</u>
J. Michael Hateley	56	Corporate Vice President and Chief Human Resources and Administrative Officer	2000	Vice President, Personnel; Prior to January 1999, Vice President Human Resources, Security and Administration, Military Aircraft Systems Division
Robert W. Helm	51	Corporate Vice President, Government Relations	1994	
Robert P. Iorizzo	62	Corporate Vice President and President, Electronic Systems Sector	2001	Vice President and General Manager of Command, Control, Communications, Intelligence and Naval Systems Division, Electronic Systems Sector
John H. Mullan	60	Corporate Vice President and Secretary	1999	Acting Secretary; Prior to May 1998 Senior Corporate Counsel
Albert F. Myers	57	Corporate Vice President and Treasurer	1994	
Rosanne P. O'Brien	59	Corporate Vice President, Communications	2000	Vice President, Corporate Communications; Prior to 1999, Vice President, Corporate Communications, Allegheny Teledyne
Thomas C. Schievelbein	49	Corporate Vice President and President, Newport News Sector	2001	Executive Vice President and Chief Operating Officer, Newport News Shipbuilding Inc.; Prior to March 1999, Executive Vice President, Newport News Shipbuilding Inc. (1995-1999)
Scott J. Seymour	52	Corporate Vice President and President, Integrated Systems Sector	2002	Vice President, Integrated Systems Sector
W. Burks Terry	52	Corporate Vice President and General Counsel	2000	Vice President, Deputy General Counsel and Sector Counsel; Prior to 1998 Vice President and Assistant General Counsel
Richard B. Waugh, Jr.	59	Corporate Vice President and Chief Financial Officer	1993	
Donald C. Winter	55	Corporate Vice President and President, Mission Systems Sector	2002	Executive Vice President of TRW Inc. and President and Chief Executive Officer, TRW Systems; Prior to 2002, Executive Vice President of TRW Inc. and General Manager, TRW Systems (2000-2001); Vice President and Deputy General Manager for Group Development, TRW Space & Electronics (1998-1999)
Sandra J. Wright	47	Corporate Vice President and Controller	2001	Corporate Controller; Prior to May 2001, Vice President and Controller of Litton Industries, Inc. (2000-2001); Vice President and Controller of Aerojet, a Gen Corp company (1999-2000) and Director of Financial Planning of Aerojet previously

NORTHROP GRUMMAN CORPORATION**Item 4. Submission of Matters to a Vote of Security Holders**

a) Special Meeting –

A special meeting of stockholders of Northrop Grumman Corporation was held December 11, 2002.

b) The matter voted upon at the meeting and the results of the vote are as follows:

	Votes For	Votes Against	Votes Abstaining	Broker Non- Votes
Issuance of shares of Northrop Grumman common stock pursuant to the agreement and plan of merger providing for Northrop Grumman's acquisition of TRW Inc. through a merger of a wholly-owned subsidiary of Northrop Grumman into TRW Inc.	89,042,870	7,364,979	780,367	0

PART II**Item 5. Market for Registrant's Common Equity and Related Stockholder Matters**

The information required by this Item is contained in Part II, Item 8 of this Annual Report on Form 10-K.

Item 6. Selected Financial Data

The data for the periods 1998 to 2000 presented in the following table, Selected Financial Data, have been adjusted to exclude the company's discontinued operations of aerostructures except for number of employees at year-end, floor area, and all balance sheet data, including net working capital, total assets, debt, long-term obligations and shareholders' equity. All data presented for 2001 and 2002 has been adjusted to exclude discontinued operations of the Component Technologies sector, the automotive business of TRW and the Ruggedized Displays and Electron Devices businesses, except for floor area, net working capital, current ratio and total assets.

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Selected Financial Data

<i>Years ended December 31, \$ in millions, except per share</i>	2002	2001	2000	1999	1998
Net sales to					
United States Government	\$ 14,207	\$ 10,417	\$ 6,662	\$ 6,716	\$ 6,426
Other customers	2,999	2,595	956	900	941
Total net sales	\$ 17,206	\$ 13,012	\$ 7,618	\$ 7,616	\$ 7,367
Operating margin	\$ 1,391	\$ 1,033	\$ 1,098	\$ 954	\$ 752
Income from continuing operations before cumulative effect of accounting change	697	459	625	474	193
Basic earnings per share, from continuing operations before cumulative effect of accounting change	5.82	5.22	8.86	6.84	2.82
Diluted earnings per share, from continuing operations before cumulative effect of accounting change	5.72	5.17	8.82	6.80	2.78
Cash dividends per common share	1.60	1.60	1.60	1.60	1.60
Net working capital	4,462	473	(162)	329	666
Current ratio	1.39 to 1	1.09 to 1	.94 to 1	1.13 to 1	1.28 to 1
Total assets	\$ 42,266	\$ 20,818	\$ 9,622	\$ 9,285	\$ 9,536
Long-term debt	9,398	5,038	1,605	2,000	2,562
Total long-term obligations and preferred stock	16,571	8,327	3,015	3,564	4,319
Long-term debt as a percentage of shareholders' equity	65.6%	68.2%	41.0%	61.4%	89.9%
Operating margin as a percentage of					
Net sales	8.1	7.9	14.4	12.5	10.2
Average segment assets	6.6	8.8	14.1	11.7	9.0
Income from continuing operations, net of tax, as a percentage of					
Net sales	4.1	3.5	8.2	6.2	2.6
Average assets	2.2	3.0	6.6	5.0	2.0
Average shareholders' equity	6.4	8.1	17.4	15.5	7.1
Research and development expenses					
Contract	\$ 922	\$ 847	\$ 900	\$ 1,147	\$ 1,478
Noncontract	406	330	318	195	189
Payroll and employee benefits	6,926	4,896	2,581	2,768	2,821
Number of employees at year-end	117,300	93,300	39,300	44,600	49,600
Number of shareholders at year-end	28,212	17,880	11,750	11,173	11,774
Depreciation	\$ 332	\$ 246	\$ 175	\$ 162	\$ 179
Amortization of purchased intangibles	164	129	92	92	90
Amortization of goodwill		201	114	99	90
Maintenance and repairs	150	163	96	79	74
Rent expense	233	219	122	101	92
Floor area (<i>in millions of square feet</i>)					
Owned	30.8	30.4	14.3	18.8	19.2
Commercially leased	20.9	16.2	9.8	10.6	10.6
Leased from United States Government	2.1	2.7	2.9	7.5	7.6

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

BUSINESS CONDITIONS

Northrop Grumman provides technologically advanced, innovative products, services, and solutions in defense and commercial electronics, information technology, systems integration, space technology, mission systems, and nuclear and non-nuclear shipbuilding and systems. As a prime contractor, principal subcontractor, partner, or preferred supplier, Northrop Grumman participates in many high-priority defense and commercial technology programs in the United States and abroad. While Northrop Grumman is subject to the usual vagaries of the marketplace, it is also affected by the unique characteristics of the defense industry and by certain elements peculiar to its own business mix. Lockheed Martin Corporation, The Boeing Company and Raytheon Company are among the largest companies in the defense industry at this time. Northrop Grumman, the second largest defense contractor, competes against these and other companies for a number of programs, both large and small. Intense competition and long operating cycles are both key characteristics of Northrop Grumman's business and the defense industry. It is common in this industry for work on major programs to be shared among a number of companies. A company competing to be a prime contractor may, upon ultimate award of the contract, turn out to be a subcontractor. It is not uncommon to compete with customers and, simultaneously on other contracts, to be either a supplier to or a customer of such competitor. The nature of major defense programs, conducted under binding contracts, allows companies that perform well to benefit from a level of program continuity unknown in many industries. Northrop Grumman conducts most of its business with the U.S. Government, principally the Department of Defense (DOD). The company also conducts business with foreign governments and makes domestic and international commercial sales.

The defense requirements of the United States and NATO countries have shifted to being able to respond to one or more regional conflicts, terrorist acts, homeland security, and proactive threat identification. Such engagements may require unilateral or cooperative initiatives, ranging from passive surveillance to active engagement, deterrence, policing or peacekeeping. In addition, the DOD's strategy continues to be affected by the general public's concern for placing military or civilian personnel at risk. As a result of these trends, both the United States and NATO countries are increasingly relying on sophisticated weapon systems that provide long-range surveillance and intelligence, battle management and precision strike capabilities combined with the ability to rapidly deploy complete defensive platforms around the world. Accordingly, defense procurement spending is expected to be weighted towards the development and procurement of advanced electronics and software that enhance the capabilities of individual weapons systems and provide for the real-time integration of individual surveillance, information management, strike and battle management platforms.

United States defense contractors have benefited from the upward trend in overall defense spending over recent years. Defense spending in NATO countries has stabilized, while they continue to increase their focus upon the development and procurement of advanced electronics and information systems capabilities. Although the ultimate size of future defense budgets remains uncertain, current indications are that the defense budget will increase over the next five years. U.S. Government programs in which Northrop Grumman either participates, or strives to participate, must compete with other programs for consideration during our nation's budget formulation and appropriation processes. Budget decisions made in this environment will have long-term consequences for the size and structure of Northrop Grumman and the entire defense industry. While the ultimate distribution of the budget remains uncertain, the company believes that its technologies and programs will be viewed favorably in the upcoming strategic review and budget process.

Northrop Grumman has historically concentrated its efforts in high technology areas such as stealth, airborne surveillance, battle management, precision weapons, systems integration, defense electronics and information technology. Through its acquisitions of Litton Industries, Inc. (Litton), Newport News Shipbuilding Inc. (Newport News) and TRW Inc. (TRW) the company now has a significant presence in space technology; command, control & intelligence; federal and civil information systems; missile systems; and the manufacture of a broad range of ships including aircraft carriers and submarines. The company believes that its programs are a high priority for national defense, but there remains the possibility that one or more of them may be reduced, extended or terminated.

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In the event of termination for the government's convenience, contractors are normally protected by provisions covering reimbursement for costs incurred subsequent to termination. The company received a termination for convenience notice on the Tri-Service Standoff Attack Missile (TSSAM) program in February 1995. In December 1996 the company filed a lawsuit against the U.S. Government in the U.S. Court of Federal Claims seeking the recovery of approximately \$750 million for uncompensated performance costs, investments and a reasonable profit on the program. In prior years the company had charged to operations in excess of \$600 million related to this program. Northrop Grumman is unable to predict whether it will realize some or all of its claims, none of which are recorded on its balance sheet, from the U.S. Government on the TSSAM contract.

Prime contracts with various agencies of the U.S. Government and subcontracts with other prime contractors are subject to numerous procurement regulations, including the False Claims Act and The International Traffic in Arms Regulation promulgated under the Arms Export Control Act, with noncompliance found by any one agency possibly resulting in fines, penalties, debarment or suspension from receiving additional contracts with all U. S. Government agencies. Given the company's dependence on U.S. Government business, suspension or debarment could have a material adverse effect on the company's future.

The company does not make use of business arrangements or other business activities that involve so-called off-balance sheet, variable interest or special purpose entities.

An individual company's success in the competitive defense industry depends upon its ability to develop and market its products, as well as its ability to provide the people, facilities, equipment and financial capacity needed to deliver those products with maximum efficiency. It is necessary to maintain, as the company has, sources for raw materials, fabricated parts, electronic components and major subassemblies. In this manufacturing and systems integration environment, effective oversight of subcontractors and suppliers is as vital to success as managing internal operations. Northrop Grumman's operating policies are designed to achieve these objectives. The company also believes that it maintains good relations with its employees, approximately 19 percent of whom are covered by 37 collective bargaining agreements. The company currently expects to complete negotiation of 11 collective bargaining agreements in 2003. Two of these agreements covering over 6,000 employees in the Ships segment are in current negotiations which are expected to be completed during the first quarter of 2003. It is not expected that these negotiations will either individually or collectively cause a material adverse effect on the operations of the company.

The company provides certain product warranties that require repair or replacement of non-conforming items for a specified period of time. Most of the company's product warranties are provided under government contracts and are generally recoverable from the customer.

Critical Accounting Policies

The company's established policies are outlined in the footnotes to the Consolidated Financial Statements (contained in Part II, Item 8 of this Form 10-K) entitled "Summary of Significant Accounting Policies". As part of its oversight responsibilities, management evaluates the propriety of its accounting methods as new events occur. Management believes that its policies are applied in a manner which provides the reader of the company's financial statements a current, accurate and complete presentation of information in accordance with U.S. Generally Accepted Accounting Principles. Principal accounting practices that require the use of assumptions and judgments are outlined below:

Revenue Recognition

As a defense contractor engaging in long-term contracts, the company extensively utilizes the cost-to-cost type and the units-of-delivery type of percentage-of-completion method of accounting. Application of this accounting method requires the use of estimates of costs to be incurred for the design, manufacture and delivery of aircraft carriers, submarines, aircraft and subassemblies, radars, intricate components and systems for space communications as well as the engineering, development and integration of software systems and other highly technical products. Such costs are typically incurred over a period of several years and estimation of these costs requires the use of judgment. The cost estimation process is based upon the professional knowledge and experience of the company's engineers, program managers and financial professionals. Factors that are considered in estimating the work to be

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completed and ultimate contract recovery include the availability and productivity of labor, the nature and complexity of the work to be performed, the effect of change orders, the availability of materials, the effect of any delays in performance, availability and timing of funding from the customer, and the recoverability of any claims included in the estimates to complete. A significant change in an estimate on one or more programs could have a material effect on the company's results of operations. Contract cost estimates are updated at least annually and more frequently in certain circumstances. Sales under cost-reimbursement contracts are recorded as costs are incurred. Certain contracts contain profit incentives based upon performance relative to predetermined targets that may occur during or subsequent to delivery of the product. Incentives which can be reasonably estimated are recorded over the performance period of the contract. Incentives which cannot be reasonably estimated are recorded when awarded. Certain contracts contain provisions for the redetermination of price based upon future economic conditions. Contract change orders and claims are included in sales when they can be reasonably estimated and realization is probable.

Purchase Accounting and Goodwill

The company applies the purchase method of accounting to its acquisitions. Under this method, the purchase price is allocated to the underlying tangible and intangible assets acquired and liabilities assumed based upon their respective fair market values, with the excess recorded as goodwill. Such fair market value assessments require judgments and estimates which can be affected by contract performance and other factors over time that may cause final amounts to differ from original estimates. The company evaluates the recovery of recorded goodwill amounts annually, or when evidence of potential impairment exists. The evaluation requires judgment associated with factors used to test recoverability.

Litigation, Commitments and Contingencies

The company is subject to a range of claims, lawsuits, environmental matters and administrative proceedings that arise in the ordinary course of business. Estimating liabilities and costs associated with these matters requires judgment and assessment based upon professional knowledge and experience of management and its legal counsel. In accordance with SFAS No. 5 – *Accounting for Contingencies*, amounts are recorded as charges to earnings when management has determined that it is probable that a liability has been incurred and the amount of the loss can be reasonably estimated. The ultimate resolution of any such exposure to the company may vary from earlier estimates as further facts and circumstances become known.

Retirement Benefits

Assumptions used in determining projected benefit obligations and the fair values of plan assets for the company's pension plans and other post-retirement benefits plans are regularly evaluated by management in consultation with outside actuaries who are relied upon as experts. In the event that the company determines that changes are warranted in the assumptions used, such as the discount rate, expected long term rate of return, or health care cost, future pension and post-retirement benefit expenses could increase or decrease.

With respect to the previously described critical accounting policies, management believes that the application of judgments and assessments has been consistently applied and has produced financial information which fairly depicts the results of operations for the years presented.

Acquisitions and Divestures

The current composition of Northrop Grumman Corporation is the result of a series of strategic acquisitions, mergers and divestures. In 1998 and 1999, the company acquired several businesses that strategically fit within its operating sectors. Inter-National Research Institute Inc. (INRI) was acquired in 1998 and was integrated into the Information Technology sector. In 1999, Ryan Aeronautical, an operating unit of Alleghany Teledyne Incorporated, the Information Systems Division of California Microwave, Inc., and Data Procurement Corporation (DPC), were acquired and integrated into Integrated Systems, Electronic Systems and Information Technology, respectively.

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In 2000, the company acquired Navia Aviation AS, Comptek Research, Inc., Federal Data Corporation, and Sterling Software, Inc., (known as Sterling's Federal Systems Group). Navia was integrated into Electronic Systems. The Comptek units were integrated within the Integrated Systems, Electronic Systems and Information Technology sectors. Federal Data and Sterling were both integrated into Information Technology.

On July 24, 2000, the company completed the sale of its commercial aerostructures (Aerostructures) business to The Carlyle Group. Aerostructures was principally a major producer of commercial aircraft subassemblies, the majority of which were sold to The Boeing Company.

In 2001, the company purchased Litton Industries, Inc. (Litton), Electronics and Information Systems Group of Aerojet-General Corporation (EIS) and 80.7 percent of Newport News. On January 18, 2002, the company completed the acquisition of the remaining shares of Newport News and now owns 100 percent of Newport News. Newport News is the nation's sole designer, builder and refueler of nuclear-powered aircraft carriers and one of only two domestic companies capable of designing and building nuclear-powered submarines. To complete the acquisition, the company issued an additional 3.2 million shares of its common stock and paid cash for the balance of the Newport News shares. In total, the company issued 16.6 million shares of its common stock for the acquisition of Newport News. These shares were valued at \$95.22 per share for purchase accounting purposes. In accordance with generally accepted accounting principles, this value was determined based on the average closing stock price of the company's common stock from December 3, 2001, through December 7, 2001. Following the completion of the acquisition, the company eliminated the 19.3 percent minority interest from its financial statements.

The Litton, Newport News and EIS acquisitions were accounted for using the purchase method of accounting. Under the purchase method of accounting, the purchase price is allocated to the underlying tangible and intangible assets acquired and liabilities assumed based on their respective fair market values, with the excess recorded as goodwill. As of December 31, 2002, the company has completed the fair market value and accounting conformance evaluation process for these acquisitions and all related adjustments have been reflected in these financial statements. The Litton business units operating results are included from the acquisition date in the company's segment data as follows: Litton's advanced electronics business is included in Electronic Systems; Litton's information systems business is included in Information Technology; Litton's ship business is included in Ships. Litton's electronic components and materials business, Component Technologies, is classified as discontinued operations. EIS was integrated into Electronic Systems and Newport News is included in the Ships segment.

In 2001, the company accrued \$119 million in restructuring costs related to the acquisition of Litton. These costs included \$29 million to exit a business, \$31 million to close down redundant facilities and \$59 million to terminate and relocate employees. Of the total amount accrued, \$5 million was expensed directly to the income statement and \$114 million was accounted for as purchase accounting adjustments to the opening balance sheet of Litton. For the period from April 2, 2001 to December 31, 2001 the company utilized \$25 million of the balance sheet accrual. In 2002, the company accrued an additional \$13 million of costs to close down redundant facilities in relation to this acquisition. During 2002, the company utilized \$57 million of the balance sheet accrual. In addition, \$1 million was reversed to the income statement as it is no longer required. At December 31, 2002, \$49 million of accrued restructure costs remained, including \$25 million in other current liabilities, \$20 million in other long-term liabilities and \$4 million in liabilities of businesses held for sale.

In December 2002, the company purchased 100 percent of the common stock of TRW Inc. (TRW). The company issued approximately 69.4 million shares of its common stock at an exchange ratio of .5357 for each TRW share, with cash paid in lieu of any fractional share of the company's stock which otherwise would be issued to the TRW shareholders. These shares were valued at \$107.31 per share for purchase accounting purposes. In accordance with generally accepted accounting principles, this value was determined based on the average closing stock price of the company's common stock from October 15, 2002, through October 21, 2002. In connection with the acquisition of TRW, the company entered into a formal stipulation and consent decree (Final Judgment) with the United States Department of Justice that was filed in the U.S. District Court for the District of Columbia on December 11, 2002. Key provisions of the consent decree are intended to assure that the merger will not impede fair and open competition related to certain electronic satellite payloads. The consent decree does not

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require the divestiture of any businesses and will permit the company to operate its business and those of TRW as planned. TRW's defense business units will be operated as two separate sectors, Mission Systems and Space Technology. TRW's automotive business (Auto) was sold in February, 2003.

The acquisition of TRW, which is valued at approximately \$12.5 billion, including the assumption of TRW's debt of \$4.8 billion, is accounted for using the purchase method of accounting. The company is in the early stages of determining the fair market value of assets acquired and liabilities assumed. These financial statements reflect preliminary estimates of the fair market value for only purchased intangibles, retiree benefits assets and liabilities and debt as well as preliminary estimates of adjustments necessary to conform TRW to the company's accounting policies. Auto is included in the total TRW valuation and is valued and recorded at its estimated sale price, which represents its fair market value. The final determination of the fair market value of assets acquired and liabilities assumed and final allocation of the purchase price may differ significantly from the amounts included in these financial statements. Adjustments to the purchase price allocations are expected to be finalized by the fourth quarter of 2003, and will be reflected in future filings. There can be no assurance that such adjustments will not be material.

Discontinued Operations

The company completed the sale of Auto to The Blackstone Group on February 28, 2003. The company received approximately \$4.7 billion, comprised of \$3.9 billion in cash and debt retained by Auto, a \$600 million payment-in-kind note and a 19.6 percent investment in the new enterprise. Cash proceeds from the sale will be used primarily to reduce debt.

In October 2002, Northrop Grumman completed the sale of two Electronic Systems sector businesses, Electron Devices and Ruggedized Displays for \$135 million. During the third quarter of 2002, the company concluded that the Component Technologies businesses did not fit with the company's long-term plan and decided to sell the businesses. The company completed the sale of the Component Technologies VEAM business units in the first quarter of 2003 and expects to complete the sale of the remaining businesses by September 30, 2003. Therefore, in accordance with SFAS No. 144 – *Accounting for the Impairment or Disposal of Long-Lived Assets*, the results of operations of these businesses are reported as discontinued operations, net of applicable income taxes, for all periods presented. In addition, the assets and liabilities of these businesses and of Auto have been classified as held for sale.

BUSINESS SEGMENTS

The company is aligned into seven business sectors: Electronic Systems, Newport News, Ship Systems, Information Technology, Integrated Systems, Mission Systems and Space Technology. For financial reporting purposes each business sector is a reportable segment with the exception of Newport News and Ship Systems which are aggregated and reported as the Ships segment in accordance with the provisions of SFAS No. 131 – *Disclosures about Segments of an Enterprise and Related Information*. Segment reporting for Mission Systems and Space Technology, acquired from TRW on December 11, 2002, will commence in the first quarter of 2003 as 2002 results for these new segments were not material to the company. The preliminary valuations of TRW assets and liabilities are included in the Consolidated Statement of Financial Position as of December 31, 2002.

Electronic Systems

The Electronic Systems segment comprises five product lines: Aerospace Electronic Systems; Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance, and Naval (C⁴ISR&N) Systems; Defensive Electronic Systems; Navigation Systems; and Space Systems; plus three smaller lines referred to collectively as "Other". The segment's expertise is in the ability to conceive, design, produce, integrate, and support high performance sensors, intelligence and processing systems that operate in diverse and challenging environments, from undersea to outerspace.

Aerospace Electronic Systems products include ground-based and airborne Radio Frequency (RF) and Electro-Optical/Infrared (EO/IR) sensors, and integrated sensor suites which meet military surveillance, precision-strike and threat-warning needs. These products are categorized into three types of systems: combat avionics

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systems, land combat systems, and airborne surveillance systems. Combat avionics systems include radar and electro-optic avionics systems that meet the needs of targeting and strike missions for armed forces worldwide, such as: the AN/APG-66/68 airborne fire control radar series installed onboard F-16 fighters; the next-generation air-superiority radar for the U.S. Air Force's F-22 aircraft; and the fire control radar and other key avionics systems for the new F-35 Joint Strike Fighter. Land combat systems include the Longbow APG-78 fire control radar and the Longbow Hellfire missile for the U.S. Army's AH 64D Apache attack helicopter and the British WAH-64 Westland Apache. Land combat systems also include the Brilliant Anti-Tank (BAT) anti-armor submunition that uses passive acoustic, infrared and millimeter wave sensors to find, attack and destroy moving tanks and other armored vehicles. Airborne surveillance systems include: the Airborne Warning and Control System (AWACS) radar, which is integrated on Boeing 707 and 767 aircraft; the Multirole Electronically Scanned Array (MESA), and airborne surveillance systems being developed for installation on Boeing 737 aircraft for the Royal Australian Air Force; the Multi-Platform Radar Technology Insertion Program (MP-RTIP), which will significantly improve the performance of Joint Surveillance Target Attack Radar System (Joint STARS), while creating new air-to-ground surveillance missions and opportunities; and the E-2C Radar Modernization Program.

C⁴ISR&N Systems encompass products in the areas of: airspace management systems; command, control, communications, computers, intelligence, surveillance, reconnaissance and targeting (C⁴ISRT) networked systems; advanced naval platforms; oceanic and naval systems; and marine systems. Airspace management systems include air defense and air traffic control radar systems, and associated systems used by domestic and international customers. C⁴ISRT networked systems include ground-based intelligence, surveillance and reconnaissance processing systems used by the DOD such as the U.S. Army's Tactical Exploitation System, the U.S. Navy's next-generation Naval Fires Network, and the U.S. Air Force's Intelligence, Surveillance, and Reconnaissance Manager. Advanced naval platforms include shipboard mission systems integration and management for domestic and international navies and mission systems for the U.S. Navy LHD-8. Oceanic and naval systems products include the Advanced Sea and Land (SEAL) Delivery System mini-submarine, the SPQ-9B shipboard radar, advanced mine hunting sensors and processors, and submarine subsystems. Marine systems include: power generation machinery, advanced propulsion systems, and missile launchers used for naval applications; and integrated bridge systems, navigation systems, and radars for both commercial and naval ships. Communications products provide reliable solutions for commercial and defense applications including co-site and spread spectrum systems communication, navigation and surveillance systems, specialized satellite communications ground terminals, an array of communications gateways and message processing systems, and fully integrated voice communications systems for air traffic control and command, control and communications applications.

Defensive Electronic Systems provides electronic warfare and targeting products in several product lines: RF countermeasures, EO/IR countermeasures, targeting systems, automatic test equipment, simulation products, and laser systems. RF countermeasures products include radar warning receivers, electronic warfare suite controllers, self-protection jammers, electronic support measures, special receivers, and integrated electronic warfare systems. These products protect fixed-wing and rotary-wing aircraft, as well as surface ships, submarines and satellites RF threats. EO/IR countermeasures products include the NEMESIS Directional Infrared Countermeasures (DIRCM) system, which protects fixed-wing and rotary-wing aircraft from shoulder-launched, infrared-guided threats. Targeting systems products include the Litening II targeting pod, which provides 24-hour adverse-weather strike capabilities. Defensive Electronic Systems also provides: automatic test equipment to evaluate and assess the health of defense electronics and electro-optic systems quickly and efficiently; simulation and evaluation equipment to assess the performance of defense electronic systems; and laser systems for military applications, including laser rangefinders, laser target locators and laser target designators.

Navigation Systems products cover military aircraft electronic systems, military land and sea electronic systems, and commercial systems. Military aircraft electronic systems are sold globally to customers in fixed-wing and rotary-wing aircraft markets. Products and services include navigation systems, flight certified computers and cockpit displays, identification friend or foe systems, and complete systems integration. Three key programs in this category are U.S. Marine Corps attack and utility helicopter upgrades, Blackhawk helicopter modernization, and Euro Fighter aircraft upgrades. Military land and sea electronic systems are provided to customers in four categories: missiles, vehicles, ships, and sub-surface (submarines and acoustical devices). Products include battlefield

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situational awareness systems, interrogators/transponders, secondary surveillance radars, and all-optical fiber-optic acoustics systems for surveillance. Commercial systems are sold in the commercial air transport and space products markets. Products include inertial navigation and reference systems, altitude and heading/reference systems, and global positioning systems.

Space Systems products include visible, infrared, and RF payloads and the associated ground processing for spaceborne remote sensing applications, which cover environmental monitoring, missile warning, and surveillance. Space Systems provides payloads for the Defense Meteorological Satellite Program (DMSP), the National Polar-Orbital Operational and Environmental Satellite Systems (NPOESS), the Defense Support Program (DSP), Space-Based Infrared Surveillance (SBIRS) High, as well as other classified programs. For SBIRS High, mission level systems engineering and integration are also provided. In addition, Space Systems provides ground systems in support of national and tactical missile warning and defense systems, including DSP, SBIRS High, and the Space Tracking Surveillance System (STSS), formerly SBIRS Low.

Other product lines include government systems, logistics services, and systems development and technology. Government systems provides products in two areas: homeland security and automation and information (such as material handling and sorting for postal services). Logistics services provides a wide range of logistics support for a variety of customers. Systems development and technology provides the technology base for current and future Electronic Systems products.

Ships

The Ships segment combines two operating sectors, Newport News and Ship Systems and includes the following products and services: Aircraft Carriers, Surface Combatants, Amphibious and Auxiliary, Submarines, Commercial and International, and Services and Other.

Newport News is currently constructing the *Ronald Reagan*, the ninth *Nimitz*-class aircraft carrier, with delivery scheduled for 2003, and the *George H.W. Bush*, the tenth *Nimitz*-class carrier, which is scheduled for delivery in 2008. CVN (21), the next generation of nuclear aircraft carrier is currently in the design phase with a construction contract anticipated in 2007. CVN (21) will provide significant new technologies that will result in manning reductions, improved war fighting capability, and a new nuclear propulsion plant design. The sector also provides ongoing maintenance for the U.S. Navy's vessels through overhaul, refueling and repair work. The company possesses unique expertise in servicing nuclear naval systems, and is the only private shipyard presently capable of refueling nuclear-powered aircraft carriers. Such aircraft carrier maintenance work is generally assigned by the U.S. Navy based on the type of work, location and cost. The company is currently overhauling and refueling carrier *Dwight D. Eisenhower* which began in 2001. Each *Nimitz*-class aircraft carrier will be refueled once in its 50-year life. The sector estimates that the remaining *Nimitz*-class aircraft carriers could be refueled over the next 30 to 40 years, although no assurances can be given as to the number of *Nimitz*-class carriers that will be refueled or that the sector will receive these awards.

Ship Systems builds Surface Combatants, which includes the design and construction of the Arleigh Burke DDG 51 Class Aegis guided missile destroyers, design of DD(X), the Navy's future transformational surface combatant class, and the Coast Guard's Deepwater Modernization Program. The latter two programs were awarded in 2002. Ship Systems is one of two prime contractors designing and building DDG 51 Class destroyers, which provide primary anti-aircraft and anti-ship missile protection for the U.S. Navy fleet. Seven Arleigh Burke Class Destroyers are currently under construction with an additional four ships in backlog. The DD(X) program is a \$2.9 billion development contract to develop and test eleven Engineering Development Models (EDMs) including an Integrated Electric Propulsion System (IPS), an all composite low signature deckhouse with embedded radar and communication apertures, a new stealthy hull form, and a new Peripheral Vertical missile Launching System (PVLs). The contract further provides for incorporating these advanced technologies into the design of the next generation destroyer, DD(X). These technologies are also to be incorporated into the next generation Cruiser, CG(X), the Littoral Combat Ship (LCS) and many ships already in the fleet as well as other future new ship classes. Construction of the first DD(X) is currently scheduled to begin in 2006. Ship Systems and Lockheed Martin are joint venture partners for the Coast Guard's Deepwater Modernization Program. Ship

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Systems has design and production responsibility for all surface ship assets including three new classes of cutters. The program is currently a 20-year program with the surface ship content representing \$8.1 billion.

Ship Systems is also responsible for Amphibious and Auxiliary programs, which include the design and construction of amphibious assault ships for the U.S. Navy, including the WASP LHD 1 Class, the San Antonio LPD 17 Class ships and the Bob Hope Fast Sealift Auxiliary. Ship Systems is the sole provider for the LHD class of large-deck, 40,500-ton multipurpose amphibious assault ships, which serve as the centerpiece of an Amphibious Ready Group. Currently the LHD 8 is in the final stages of design and is a significant upgrade from the preceding seven sister ships. The design and production of the LHD 8 is a \$1.4 billion program with delivery scheduled for 2007. Ship Systems is also the sole provider of the LPD17 class of ships, which function as amphibious transports. Four LPD Class ships are currently under contract with a value of \$3 billion. Ship Systems also builds Sealift ships for the Military Sealift Command. These very large ships are used for prepositioning U.S. military vehicles and equipment overseas. One Sealift ship was delivered in 2002, bringing the total to date to six on this seven-ship contract. The seventh ship will be delivered in 2003.

Newport News is one of two builders of U.S. Navy nuclear-powered submarines. In February 1997, the sector and Electric Boat Corporation (Electric Boat), a wholly-owned subsidiary of General Dynamics Corporation, reached an agreement to cooperatively build the first four new nuclear attack submarines of the *Virginia*-class. With Electric Boat serving as the prime contractor and lead designer, each company will construct certain portions of each submarine, with final assembly, testing, outfitting, and delivery alternating between the two yards. The contract for the first flight of *Virginia*-class submarines was awarded to the Newport News/Electric Boat team in 1998. The period of performance on this contract spans 10 years as submarines in this class typically have a 6 to 7 year build cycle. The current schedule calls for the delivery of the *Virginia* by Electric Boat in 2004 followed over the balance of the contract by the *Texas* (Newport News), the *Hawaii* (Electric Boat), and the *North Carolina* (Newport News). Electric Boat and Newport News are currently in negotiation with the U.S. Navy for the second flight of 5 *Virginia*-class submarines with options for an additional two. The second flight of *Virginia*-class submarines will also be co-produced with Electric Boat. Management estimates that the *Virginia*-class program could total up to 30 submarines, although no assurances can be given as to the number of submarines that ultimately will be built by the sector.

Ship Systems is under contract to produce five Polar Tankers, included in Commercial and International; two ships have been delivered. These tankers will transport one million barrels of crude oil from Alaska to west coast refineries and are fully compliant with the Oil Pollution Act of 1990. The remaining three ships are expected to be delivered in 2003, 2004, and 2005. In 2002, Ship Systems delivered two overhauled frigates to Venezuela with warranty the only remaining contractual obligation. Ship Systems is under contract with the Israeli Government to perform feasibility studies to increase the size and capabilities of the SA'AR 5 Class corvettes. Ship Systems designed and built three ships of this class in the early 1990's.

Included in Services and Other are short-duration government and commercial ship repair contracts. The company has ship repair facilities in the U.S. Navy's largest homeports of Norfolk, VA and San Diego, CA.

Information Technology

The Information Technology segment consists of four lines of business: Government Information Technology, Enterprise Information Technology, Technology Services, and Commercial Information Technology.

Government Information Technology covers a wide range of large-scale systems integration, solutions and services programs. This work is performed for government customers at the DOD, federal, state and local levels, and covers command, control, communications, computers, intelligence, surveillance and reconnaissance (C⁴ISR); training and simulation; science and technology; and information systems markets. Government Information Technology has the lead for the company's Homeland Security efforts. Homeland Security solutions include information security systems, such as detection and vulnerability assessments; communications systems such as C⁴ISR, mobile/wireless networks, cyber-warfare, local area networks, and air traffic control systems; intelligence and analysis systems, protecting our customers' networks from cyber attacks; training systems, such as modeling and simulation; and response and recovery systems, such as computer aided dispatch/911 emergency response systems. In the C⁴ISR market, Information Technology supports the development, testing and fielding of

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command and control systems for its primary customers, principally the DOD. Specialty areas include systems integration, mission critical software and support, systems engineering, tactical data links, information security, independent validation and verification, geographic information systems, orbital analysis, and national intelligence systems and services. In the training and simulation market, the segment is a prime developer and operator of modeling, simulation and analysis systems, computer-driven war-gaming and training, flight simulations, knowledge management systems and mission readiness exercises. These services are provided to the U.S. Navy, Air Force, Army, Special Operations Command, NASA, and the Missile Defense Agency. In the science and technology market, work includes analysis of weapons of mass destruction effects, high-energy laser technology development and neural network applications. This technical and scientific support is provided to the U.S. Air Force Research Labs and the Defense Threat Reduction Agency. The information systems market is large and diverse. As a full service provider, the sector offers a complete range of services such as large-scale systems integrations, enterprise-wide infrastructure solutions, high performance computing, electronic commerce, large-scale database design, systems modernization and integration, disaster recovery and planning, enterprise resource planning, data center management, seat management, health solutions, air traffic controls, cyber warfare/information security systems, financial systems, logistics systems, and complete network-centric warfare operations. Customers include state and local governments, federal agencies such as the General Services Administration, Federal Aviation Administration, Department of Health and Human Services, the Department of Justice, the Department of State, and all branches of the DOD. The Software Engineering Institute's Capability Maturity Model-Integration (CMMI) system engineering/software engineering level 5 rating, the highest engineering rating, has been achieved within this line of business.

Enterprise Information Technology provides enterprise-wide infrastructure and internet solutions and services to the defense and civil marketplace, including the delivery and integration of commercially available computers, networks, hardware, software and peripherals. Customers include the Veterans Administration, Department of State, Department of Justice, Department of Treasury, all branches of the DOD, NASA, and state and local government agencies.

Technology Services include base and range support, training and simulation, information systems, and state and local information technology services. Contracts include support of systems, logistics support, facilities management services, flight systems and simulation services, mission integration and planning support, operation and support of simulation enhanced training programs, systems integration, information security, data center management, and systems engineering and networking. In 2002, the company's state and local group also entered the worldwide electronic election services market, to license and manufacture electronic voting systems. Primary customers of Technology Services include the U.S. Army, U.S. Air Force, NASA, and state and local government agencies.

Commercial Information Technology provides complete IT outsourcing services directed to the commercial market. This work includes desktop and server management, hardware and software maintenance, help desk support, systems administration, network design, systems modernization and integration, and facility management services. Customers include information technology outsourcing providers, original equipment manufacturers, integrators and resellers.

Integrated Systems

Air Combat Systems (ACS), Airborne Early Warning and Electronics Warfare (AEW/EW) systems and Airborne Ground Surveillance and Battle Management (AGS/BM) systems are the three product lines within the Integrated Systems segment.

Included in ACS are: F/A-18 and F-35 subcontract work, the Global Hawk and Fire Scout Unmanned Aerial Vehicles (UAVs), the Navy Unmanned Combat Aerial Vehicle (UCAV-N), the Multi-Platform Radar Technology Insertion Program (MP-RTIP), B-2 bomber post-production contracts, a family of aerial targets, support of out-of-production F-5/T-38 aircraft, and advanced systems and technology solutions. Integrated Systems is the principal subcontractor to The Boeing Company on the F/A-18 program. The F/A-18 is designed to execute a variety of air-to-air and air-to-surface missions. Principally deployed by the U.S. Navy on aircraft carriers, it also has been purchased by several other nations as a land-based combat aircraft. Northrop Grumman is

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responsible for approximately 40 percent of the aircraft, including the full integration of the center and aft fuselage and vertical tail sections and associated subsystems. Current business includes production of the F/A-18E/F Super Hornet model and support of prior models of the aircraft still in service.

On the F-35, Integrated Systems is teamed with Lockheed Martin Corporation and BAE Systems. The F-35 is a multi-mission, multi-service weapon system, which is being developed as an affordable fighter/attack platform with variants to be optimized for the U.S. Air Force, U.S. Marine Corps, U.S. Navy, U.K. Royal Navy and U.K. Royal Air Force, while maintaining a very high percentage of platform commonality. The F-35 is currently in the System Development and Demonstration (SDD) phase of the program. Plans call for more than 3,000 aircraft over the life of the program, with an initial 22 aircraft to be produced in the \$19 billion SDD phase, although no assurances can be given regarding the ultimate number of aircraft to be produced. The Integrated Systems sector is responsible for the detailed design and integration of the center fuselage and weapon bay, a large part of systems engineering, mission system software, ground and flight test support, signature/low observables development, and support of modeling and simulation activities. The total program is valued at approximately \$200 billion and is intended to be a cornerstone of future defense capability for the United States, the United Kingdom and their allied partners. The F-35 is designed to replace the A-10, the AV-8 Harrier, the F-16 and the F/A-18.

The company is a leader in the unmanned systems market. Global Hawk is a high altitude endurance UAV being developed for the U.S. Air Force to perform various intelligence, surveillance and reconnaissance (ISR) missions from high altitudes for long periods of time. The program is completing a successful advanced concept technology demonstration phase and has now entered the SDD phase, which is being conducted concurrently with a Low Rate Initial Production (LRIP) program. Fire Scout is a UAV being developed for the U.S. Navy to perform tactical ISR missions in a naval environment, taking off and landing vertically. The program is currently in LRIP, with production plans still to be determined. UCAV-N is being developed for the U.S. Navy to be a highly survivable UAV capable of both ISR and combat missions. This program is in the early stages of development.

Integrated Systems is the prime systems integration contractor for the MP-RTIP. The objective of the program is to upgrade current aircraft and unmanned vehicles with an advanced technology radar subsystem, which includes higher resolution and greater accuracy. The product of the MP-RTIP development program is a Ground Moving Target Indicator (GMTI) capability, in the form of an Active Electronically Scanned Array (AESA) radar, that can be integrated onto multiple U.S. platforms and is suitable for use by NATO. ACS is the prime contractor for the B-2 bomber. While production deliveries of the B-2 bomber have been completed, the company continues to perform upgrades and support activity. Advanced systems include future strike aircraft concepts and performing systems engineering studies as part of NASA's Space Launch Initiative.

AEW/EW products include the E-2C (Hawkeye) Airborne Early Warning and the EA-6B (Prowler) Electronic Warfare aircraft. The E-2C has been in active service with the U.S. Navy since 1973 and is employed by the air forces of five other nations. AEW/EW is currently performing a multi-year contract to produce 22 E-2C aircraft for the U. S. Navy, one aircraft for France, and two aircraft for Taiwan. The E-2C is kept current through technological upgrades of its mission systems, the latest of which is the Hawkeye 2000 configuration. The company is developing the next generation capability which includes mission computer and sensor enhancements called the Advanced Hawkeye under a Pre-System Development and Demonstration contract with the U.S. Navy. The EA-6B is the armed services' only offensive tactical radar jamming aircraft. The company is currently developing the next generation mission system for this aircraft under the ICAP (Increased Capability) III contract.

The major product included in AGS/BM is the E-8 Joint STARS. AGS/BM is the prime contractor on Joint STARS, which detects, locates, classifies, tracks and targets potentially hostile ground movement in all weather conditions. It is designed to operate around the clock in constant communication through secure data links with Air Force command posts, Army mobile ground stations, or centers for military analysis far from the point of conflict. Current business includes production, Total Systems Support Responsibility (TSSR), and upgrades to the weapons systems in service. Internationally, AGS/BM is actively involved in the development of a NATO Alliance Ground Surveillance system to provide a Joint STARS-like capability to that organization.

Mission Systems

The Mission Systems segment is a leading global system integrator of complex, mission-enabling systems. The segment consists of four lines of business: Command, Control and Intelligence Systems; Federal and Civil Information Systems; Missile Systems; and Technical and Management Services.

Command, Control and Intelligence Systems provides command, control, communications, computers, and intelligence support to the U.S. Department of Defense, principally the intelligence community and the U.S. Air Force, Army, Navy and Marine Corps. Offerings in the intelligence market include signals intelligence and exploitation systems; system engineering and integration; operations, maintenance and engineering; and enterprise engineering. The space control, information operations and Air Force command and control (C²) markets include enterprise and system engineering; ground segment C²; information analysis, planning and decision aids; Computer Network Operations (CNO); systems with embedded information assurance; data collection; modeling and product generation; system simulation and integration and test; spacecraft C² systems; payload control and terminal software; and C² infrastructure products. In the integrated command, control, communications and computers (C⁴) market, the focus is on legacy C⁴ systems, object force C⁴, air defense artillery C², and network operations. In the logistics automation market, work includes Army and tactical global combat service support; legacy standard Army management information systems; Army knowledge on-line; and linkage to fielded C⁴ systems. In the platform integration and UAV market, the segment supports the Hunter corps and division tactical UAV system; light and heavy joint service nuclear, biological and chemical reconnaissance systems; and tactical operation centers.

Federal and Civil Information Systems provides information technology services to domestic and foreign government customers at the federal, state and/or local levels. In the federal network integration market, the focus is on converged enterprise networks and network design, planning, engineering, integration and support. In the federal security market, segment offerings include an integrated product to link legacy, commercial off-the-shelf, and emerging technologies into a network-centric standards-based platform; a tactical physical security solution supporting deployed forces; comprehensive assessment of security threats, vulnerabilities, risks, and business impacts for physical and cyber assets; a technology-oriented suite of integrated security solutions for physical and cyber security; and a complete set of business continuity and disaster recovery solutions. For the federal enterprise information technology market, the segment provides enterprise-wide architecture; systems integration; storage area network consolidation; financial asset tracking; secure document technology; knowledge management; and collaborative systems including advanced video teleconferencing. In the state and local information technology market, the segment focuses on public health data systems; labor unemployment insurance systems; child welfare and support enforcement systems; and operations and maintenance. Work in the public safety market includes prime integration for civilian command centers for public safety, transportation and airport security; statewide wireless communications systems; automated and criminal identification systems; integrated justice information systems; and C² and mobile data integration.

Missile Systems supports the Integrated Missile Defense system and the Intercontinental Ballistic Missile (ICBM) Program. The Integrated Missile Defense system market includes shooters, sensors, battle management C², communications, modeling and simulation, and test and evaluation. For this market, the segment provides wargames, modeling and simulation; system test and integration; targets and countermeasures, missile system engineering, and trainers to the Missile Defense Agency, Boeing and Lockheed Martin. As prime contractor for the ICBM Program Office, the segment offers ICBM domain knowledge; program management; systems engineering and integration; and sustainment and modernization services.

Technical and Management Services primarily supports the U.S. Departments of Defense, Labor and Justice. In the information technology market, the segment offers full life cycle design and information systems integration and operations. In the systems engineering and analytic services market, the focus is on electromagnetic and infrared analysis; decision support with modeling tools; systems effectiveness evaluation; engineering prototypes and integration; and simulation modeling for training resource allocation. For the training and combat support market, the segment provides full-scale exercise design, execution and analysis; multi-media training design and delivery; and operational support of warfighting and peacekeeping (e.g., linguists and subject matter experts). In the operations and maintenance market, offerings include base operating services; equipment maintenance; logistics

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and administrative support and freight forwarding services; biometrics; and biological agent detection. Work in the military training market includes maneuver and logistics training; force-on-force exercise development and control; force modernization and integration; and new equipment training and fielding. In the job corps market, the segment provides educational and vocational training; residential living; placement and transition services; logistics services; and web-based general education development training.

Space Technology

The Space Technology sector develops a broad range of systems at the leading edge of space, defense and electronics technology. The sector creates products primarily for the U.S. government that contribute significantly to the nation's security and leadership in science and technology. This business primarily consists of the following major business areas: Civil Space; Missile Defense; Satellite Communications (SatCom); Intelligence, Surveillance & Reconnaissance (ISR); and Radio Systems.

The Civil Space business area produces spacecraft, instruments and services for some of our nation's most challenging space science missions, earth observation systems and weather satellite systems. A variety of products and services are provided, including mission and systems engineering services, spacecraft and instrument systems, mission operations and propulsion systems. Customers include NASA, National Oceanic and Atmospheric Administration (NOAA), and the DOD. Major programs include the recently awarded James Webb Space Telescope (JWST), National Polar-orbiting Operational Environmental Satellite System (NPOESS), Earth Observation System (EOS) and the legacy space telescope program Chandra, currently in operation.

Missile Defense produces space-based systems that detect, track and destroy missiles and help to counter today's widely proliferating ballistic threats. Key capabilities and products include system integration, spacecraft, directed energy and kinetic energy weapons, and tactical lasers. The newly formed Missile Defense Agency (MDA) is the primary customer. Major programs include the Space Tracking Surveillance System (STSS formerly SBIRS-Low), Airborne Laser (ABL), and Mobile Tactical High Energy Laser (MTHL).

The SatCom business area demonstrates the sector's leadership in complex satellite communication systems and broadband payloads. Key customers are satellite prime contractors in support of the DOD and other government agencies. Major programs include Advanced Extremely High Frequency (AEHF) payload, and communication payload for the legacy Milstar program, currently in operation.

In the ISR business area the sector's capabilities give the nation's monitoring systems a global reach and enhance national security. Addressing requirements in space-based intelligence, surveillance and reconnaissance systems, the sector provides mission and systems engineering, satellite systems and mission operations. Customers are predominantly restricted, as are the major programs. Also part of this business area, Defense Support Program (DSP) has been monitoring ballistic missile launches for the Air Force for decades.

In the Radio Systems business area the sector has been pioneering software-defined radio technology and applying the results to advanced integrated Communications, Navigation and Identification (CNI) systems, radios, and avionics integration software. The sector's avionics system represents the "eyes and ears" of the F-35 Joint Strike Fighter, F/A-22 Raptor jet fighter and Comanche attack/reconnaissance helicopter. Customers for these programs include Air Force, Army, Navy and prime government contractors.

In addition, the sector maintains a Technology business area that consists primarily of government funded Research and Development (R&D) contracts in support of the five business areas described above. Technology also includes several small technology-based product areas that sell advanced electronics, mechanical devices, and laser products to both government and commercial customers.

SEGMENT FINANCIAL DATA

In the following table of segment and major customer data, revenue from the United States Government includes revenue from contracts on which Northrop Grumman is the prime contractor as well as those on which the company is a subcontractor and the ultimate customer is the U.S. Government. The company's discontinued operations are excluded from all of the data elements in this table, except for assets by segment. Northrop Grumman's income statements do not include TRW's post-acquisition results because they were not material. Only the TRW backlog acquired and assets at December 31, 2002, are included in the following table.

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The company, effective December 31, 2002, revised the way it measures the profitability of its operating segments to better reflect its operating results. Pension and other retiree benefit expenses are now included in the sectors' cost of sales to the extent that these costs are currently recognized under government Cost Accounting Standards (CAS). In order to reconcile from segment operating margin to total company operating margin, these amounts are reported under the caption "Reversal of CAS pension expense included above." Total GAAP pension income or expense continues to be reported separately as a reconciling item under the caption "Pension income or expense." The reconciling item captioned "Unallocated expenses" includes unallocated corporate expenses, state tax provisions, and other retiree benefit expenses. Segment results for all periods presented have been conformed to the new method of measuring profitability.

Foreign sales amounted to approximately \$1.3 billion, \$1.3 billion and \$600 million for the years ended December 31, 2002, 2001 and 2000, respectively. All of the company's segments engage in international business, for which the company maintains a large number of sales representatives and consultants who are not employees of the company. Foreign sales by their very nature are subject to greater variability in risk than the company's domestic sales, particularly to the U.S. government. International sales and services subject the company to numerous stringent U.S. and foreign laws and regulations, including, without limitation, regulations relating to import-export control, repatriation of earnings, exchange controls, the Foreign Corrupt Practices Act and the anti-boycott provisions of the U.S. Export Administration Act. Failure by the company or its sales representatives or consultants to comply with these laws and regulations could result in administrative, civil or criminal liabilities and could in the extreme case result in suspension of the company's export privileges, which could have material adverse consequences.

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RESULTS OF OPERATIONS BY SEGMENT AND MAJOR CUSTOMER

<i>Years ended December 31, \$ in millions</i>	2002	2001	2000
Net Sales			
Electronic Systems			
United States Government	\$ 2,966	\$ 2,830	\$ 2,102
Other customers	2,120	1,591	692
Intersegment sales	253	166	121
	5,339	4,587	2,915
Ships			
United States Government	4,445	1,487	
Other customers	251	392	
Intersegment sales	16	1	
	4,712	1,880	
Information Technology			
United States Government	3,700	3,231	1,457
Other customers	467	491	228
Intersegment sales	70	61	32
	4,237	3,783	1,717
Integrated Systems			
United States Government	3,096	2,869	3,103
Other customers	161	121	36
Intersegment sales	16	11	11
	3,273	3,001	3,150
Intersegment eliminations	(355)	(239)	(164)
Total net sales	\$17,206	\$ 13,012	\$ 7,618
Operating Margin			
Electronic Systems	\$ 435	\$ 350	\$ 157
Ships	306	19	
Information Technology	249	173	103
Integrated Systems	331	265	306
	1,321	807	566
Adjustments to reconcile to total operating margin:			
Unallocated expenses	(105)	(134)	(42)
Pension income	90	335	538
Reversal of CAS pension expense included above	100	43	42
Reversal of royalty income included above	(15)	(18)	(6)
Total operating margin	\$ 1,391	\$ 1,033	\$ 1,098

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<i>Years ended December 31, \$ in millions</i>	2002	2001	2000
Contract Acquisitions			
Electronic Systems	\$ 5,676	\$ 5,261	\$ 4,228
Ships	5,334	11,608	
Information Technology	4,320	4,216	2,018
Integrated Systems	3,472	2,222	2,979
Mission Systems	2,748		
Space Technology	1,308		
Total acquisitions	\$ 22,858	\$ 23,307	\$ 9,225
Funded Order Backlog			
Electronic Systems	\$ 6,303	\$ 5,713	\$ 4,873
Ships	10,367	9,729	
Information Technology	1,589	1,436	942
Integrated Systems	3,738	3,523	4,291
Mission Systems	2,748		
Space Technology	1,308		
Total backlog	\$ 26,053	\$ 20,401	\$ 10,106
Assets			
Electronic Systems	\$ 5,446	\$ 5,764	\$ 4,069
Ships	6,532	6,040	
Information Technology	2,178	2,099	1,247
Integrated Systems	2,173	2,088	2,238
Mission Systems	4,759		
Space Technology	4,829		
Segment assets	25,917	15,991	7,554
General corporate	6,728	3,620	2,068
Assets of businesses held for sale	9,621	1,207	
Total assets	\$ 42,266	\$ 20,818	\$ 9,622
Capital Expenditures			
Electronic Systems	\$ 263	\$ 195	\$ 118
Ships	76	44	
Information Technology	45	46	22
Integrated Systems	134	79	124
General corporate	3	3	1
Total expenditures	\$ 521	\$ 367	\$ 265
Depreciation and Amortization			
Electronic Systems	\$ 226	\$ 301	\$ 236
Ships	147	82	
Information Technology	44	90	32
Integrated Systems	78	102	112
General corporate	1	1	1
Total depreciation and amortization	\$ 496	\$ 576	\$ 381

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MEASURES OF VOLUME

Certain prior year amounts in the tables titled "Contract Acquisitions", "Net Sales" and "Backlog" have been reclassified to conform to current year reporting.

Contract Acquisitions

Contract acquisitions tend to fluctuate from year to year and are determined by the size and timing of new and add-on orders. The existing funded order backlog as of the purchase date of businesses acquired is reported as contract acquisitions. The variability resulting from multiyear orders and funding, as well as acquiring businesses, are reflected in the following table.

Contract Acquisitions

\$ in millions

	2002	2001	2000
Electronic Systems			
Aerospace Electronic Systems	\$ 1,137	\$ 1,325	\$ 2,204
C ⁺ ISR&N	2,002	1,222	981
Defensive Electronic Systems	830	793	605
Navigation Systems	741	1,352	
Space Systems	615	231	158
Other	613	602	422
	5,938	5,525	4,370
Ships			
Aircraft Carriers	1,622	4,577	
Surface Combatants	1,638	3,194	
Amphibious and Auxiliary	1,184	2,301	
Submarines	828	609	
Commercial and International	(16)	837	
Services and Other	109	216	
Intrasegment eliminations	(64)	(82)	
	5,301	11,652	
Information Technology			
Government Information Technology	2,834	2,584	1,067
Enterprise Information Technology	766	848	285
Technology Services	673	687	518
Commercial Information Technology	200	241	181
Intrasegment eliminations	(83)	(84)	
	4,390	4,276	2,051
Integrated Systems			
Air Combat Systems	2,131	1,001	1,725
Airborne Early Warning/Electronic Warfare	832	789	715
Airborne Ground Surveillance/Battle Management	526	445	576
Intrasegment eliminations	(1)	(2)	(26)
	3,488	2,233	2,990
Mission Systems			
	2,748		
Space Technology			
	1,308		
Intersegment eliminations	(315)	(379)	(186)
Total acquisitions	\$22,858	\$ 23,307	\$ 9,225

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Electronic Systems acquisitions in 2002 were 7 percent higher than in 2001. Aerospace Electronic Systems (AES) includes funding in 2002 of \$116 million for the F-35, \$83 million for the Longbow missile multi-year contract, and \$82 million for the BAT program. C4ISR&N reflects increased awards for international air defense systems and \$150 million of funding for the Trident program. Defensive Electronic Systems includes a \$165 million award for ALQ-135 electronic countermeasures for the Korea F-15. Space Systems includes \$335 million of additional funding on the SBIRS High program.

Electronic Systems acquisitions in 2001 were 26 percent higher than in 2000. Results reported in 2001 include opening backlog acquired in the purchases of Litton and EIS of \$1.3 billion and \$43 million, respectively. AES includes funding in 2001 of \$255 million for the Wedgetail program, \$148 million for the BAT program and \$124 million for the Longbow missile multi-year contract. In C4ISR&N higher awards for air defense systems contributed to higher acquisitions in 2001 than in 2000. Navigation Systems in 2001 reflects \$820 million in Litton opening backlog acquired. In 2000, AES reflected a \$1.1 billion award for the radar, electronic warfare systems, integrated Forward Looking Infra-Red (FLIR) targeting systems and common testers for United Arab Emirates (UAE) F-16 Aircraft. AES includes funding for the Longbow missile multi-year contract of \$245 million in 2000.

Ships segment acquisitions in 2002 include \$875 million of funding for the DD(X) program, included in the Surface Combatants business area, and \$590 million for LHD, included in the Amphibious and Auxiliary area. Newport News 2002 acquisitions included \$1.6 billion of aircraft carrier funding and \$828 million of funding for the submarine program. Negative acquisitions in the Commercial and International area incorporate a \$39 million dollar de-acquisition on the Polar Tanker program. In June 2002 Ships signed a Memorandum of Understanding (MOU) with the U.S. Navy and General Dynamics' Bath Iron Works to reallocate construction responsibilities for the San Antonio (LPD 17) class amphibious assault ships and certain USS Arleigh Burke (DDG 51) class Aegis guided missile destroyers. As a result of this agreement, Ship Systems sector will assume responsibility for the construction of all 12 San Antonio class LPDs, and will also assume responsibility for the program's life cycle support. In exchange, Bath Iron Works will construct DDG 102, a contract that was won by Ship Systems in December 2001. Bath Iron Works will also be awarded future DDG work as determined by the Department of the Navy.

Ships segment acquisitions in 2001 include backlog acquired in the Litton and Newport News transactions of \$10.5 billion. In 2001, Surface Combatants included a \$370 million contract award for an Aegis class large destroyer. Amphibious and Auxiliary for 2001 included a contract for \$113 million for the advanced procurement of material for Landing Platform Dock (LPD) 21, the fifth ship of the class. Commercial and International reported the 2001 de-acquisition of the Project America cruise ship program.

Information Technology acquisitions increased by 3 percent in 2002 over 2001. Government Information Technology (GIT) secured a major contract win with the Immigration and Naturalization Service (INS) to provide Information Technology infrastructure and support services, key elements in assisting the border enforcement and immigration benefits missions of the agency. The \$228 million INS contract positions the company to assist the new Department of Homeland Security with its Information Technology needs. In 2002, Technology Services funding for the Joint Base Operations Support Contract (J-BOSC) contract of \$268 million was received. Under this contract, which was won in 1998 and has a five-year basic performance period with a five-year option, the segment provides base operations support for NASA's Kennedy Space Center and the U.S. Air Force's 45th Space Wing, which includes Cape Canaveral Air Station and Patrick Air Force Base. Technology Services also received a \$100 million contract win to provide electronic benefits transfer services to the state of Illinois which positions the company as a key provider to state government.

Information Technology acquisitions were 108 percent higher in 2001 over 2000 which reflected Litton opening backlog acquired of \$585 million. Government Information Technology acquisitions in 2001 include the effect of acquired backlog of \$513 million and contract awards for the three businesses acquired in 2000. Technology services includes acquisitions of \$322 million in 2001 for J-BOSC.

Integrated Systems acquisitions in 2002 were 56 percent higher than 2001. Funding in 2002 reflects \$784 million of funding for the F/A-18 contracts and \$271 million for the F-35 SDD contract. ACS continues to record incremental B-2 bomber funding which increased to \$388 million in 2002 from \$346 million

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in 2001 for ongoing development work, spares and other customer support for the operational aircraft program. ACS still expects to receive future post production business, such as airframe depot maintenance, repair of components, operational software changes, and product improvement modifications.

Integrated Systems acquisitions in 2001 were 25 percent lower compared with the 2000 fiscal year principally due to the timing of contract awards on major programs. Acquisitions in 2000 included funding of \$1.1 billion for the multi-year buy for 72 F/A-18E/F shipsets. AEW/EW includes funding for the multi-year buy for twenty five E-2C aircraft of \$133 million in 2002, \$231 million in 2001 and \$247 million in 2000. AGS/BM includes orders for two , one, and one Joint STARS aircraft in 2002, 2001 and 2000, respectively.

Backlog acquired and included in acquisitions for 2002 as a result of completion of the TRW transaction was \$2.7 billion for the Mission Systems segment and \$1.3 billion for the Space Technology segment.

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Sales

Year-to-year sales vary less than contract acquisitions and reflect performance under new and ongoing contracts.

Net Sales

<i>\$ in millions</i>	2002	2001	2000
Electronic Systems			
Aerospace Electronic Systems	\$ 1,536	\$ 1,353	\$ 956
C ⁴ ISR&N	1,405	1,166	968
Defensive Electronic Systems	780	693	511
Navigation Systems	668	591	
Space Systems	437	245	157
Other	513	539	323
	5,339	4,587	2,915
Ships			
Aircraft Carriers	2,076	208	
Surface Combatants	872	674	
Amphibious and Auxiliary	845	522	
Submarines	581	54	
Commercial and International	212	396	
Services and Other	209	89	
Intrasegment eliminations	(83)	(63)	
	4,712	1,880	
Information Technology			
Government Information Technology	2,697	2,237	815
Enterprise Information Technology	750	829	229
Technology Services	657	571	522
Commercial Information Technology	216	230	151
Intrasegment eliminations	(83)	(84)	
	4,237	3,783	1,717
Integrated Systems			
Air Combat Systems	1,915	1,600	1,722
Airborne Early Warning/Electronic Warfare	759	740	780
Airborne Ground Surveillance/Battle Management	600	663	674
Intrasegment eliminations	(1)	(2)	(26)
	3,273	3,001	3,150
Intersegment eliminations	(355)	(239)	(164)
Total sales	\$17,206	\$ 13,012	\$ 7,618

Electronics Systems segment sales increased by \$752 million or 16 percent in 2002 as compared with 2001. Growth in 2002 principally reflects a \$184 million increase at AES due to increased volume on the F-22, F-35, BAT, Firefinder and Longbow missile programs. C⁴ISR&N sales increased by \$239 million in 2002 principally due to higher volume on international programs. The Space Systems business area contributed an additional \$192 million as a result of increased volume on SBIRS High.

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Electronics Systems segment sales in 2001 reflect the addition of the Litton and EIS businesses which accounted for approximately \$1.2 billion of increased sales as compared with 2000, contributing \$101 million to AES, \$194 million to C⁴ISR&N, \$641 million to Navigation Systems, \$159 million to Defensive Electronic Systems and \$66 million to Space Systems. AES increased sales in 2001 also reflect higher F-16 block 60 combat avionics systems, Longbow and BAT sales. Defensive Electronic Systems reflects higher EO/IR and targeting systems sales. Higher sales in "Other" are due to increased automation and information systems sales. For 2003, the company expects Electronic Systems segment sales to be between \$5.9 billion and \$6.1 billion.

Ships segment sales increased substantially in 2002 as compared with 2001, principally due to inclusion of the two ship businesses acquired in 2001 for a full year. In 2003 the company expects Ships sales to be just over \$5 billion.

Information Technology sales increased by 12 percent in 2002 as compared with 2001. This increase principally results from inclusion of a full year of Litton operations in 2002. Information Technology sales increased by \$2.1 billion in 2001 over 2000. The Litton business acquired in 2001 and the three businesses acquired in 2000 accounted for approximately \$2 billion of the increase, contributing \$1.3 billion to Government Information Technology and \$457 million to Enterprise Information Technology. For 2003, the company expects Information Technology sales to be between \$4.7 billion and \$4.9 billion.

Integrated Systems segment sales increased 9 percent in 2002 over 2001 principally from a \$143 million increase in F-35 sales and a \$145 million increase in Global Hawk sales. Integrated Systems sales in 2001 declined 5 percent as compared to 2000, primarily as a result of lower B-2 revenue which decreased by \$273 million. The production phase of the B-2 program was substantially completed in 2000. Ongoing development work, spares and other customer support for the operational aircraft program continues. Integrated Systems revenue for 2003 is expected to be approximately \$3.6 billion to \$3.8 billion.

For 2003, Mission Systems sales are expected to be approximately \$3.9 billion and Space Technology sales are expected to be approximately \$2.5 billion.

Funded Order Backlog

The year-end funded order backlog is the sum of the previous year-end funded order backlog plus the year's contract acquisitions minus the year's sales. Backlog is converted into the following years' sales as costs are incurred or deliveries are made. It is expected that approximately 68 percent of the 2002 year-end backlog will be converted into sales in 2003.

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Backlog

<i>\$ in millions</i>	2002	2001	2000
Electronic Systems			
Aerospace Electronic Systems	\$ 2,480	\$ 2,879	\$ 2,907
C ⁴ ISR&N	1,423	826	770
Defensive Electronic Systems	1,009	959	859
Navigation Systems	834	761	
Space Systems	288	110	124
Other	461	361	298
	6,495	5,896	4,958
Ships			
Aircraft Carriers	3,915	4,369	
Surface Combatants	3,286	2,520	
Amphibious and Auxiliary	2,118	1,779	
Submarines	802	555	
Commercial and International	213	441	
Services and Other	27	127	
Intrasegment eliminations		(19)	
	10,361	9,772	
Information Technology			
Government Information Technology	1,036	899	552
Enterprise Information Technology	131	115	96
Technology Services	349	333	217
Commercial Information Technology	73	89	78
	1,589	1,436	943
Integrated Systems			
Air Combat Systems	1,980	1,764	2,363
Airborne Early Warning/Electronic Warfare	1,266	1,193	1,144
Airborne Ground Surveillance/Battle Management	492	566	784
	3,738	3,523	4,291
Mission Systems	2,748		
Space Technology	1,308		
Intersegment eliminations	(186)	(226)	(86)
Total backlog	\$ 26,053	\$ 20,401	\$ 10,106

Total U.S. Government orders, including those made on behalf of foreign governments (FMS), comprised 84 percent of the backlog at the end of 2002 compared with 82 percent at the end of 2001 and 75 percent at the end of 2000. Total foreign customer orders, including FMS, accounted for 13 percent of the backlog in 2002 compared with 13 percent of the backlog at the end of 2001 and 22 percent at the end of 2000. Domestic commercial business in backlog was 5 percent at the end of 2002 compared with 7 percent at the end of 2001 and 5 percent at the end of 2000.

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MEASURES OF PERFORMANCE

Effective January 1, 2002, the company adopted SFAS No. 142 – *Goodwill and Other Intangible Assets*, which changes the accounting for goodwill from an amortization method to an impairment-only approach and eliminates amortization of goodwill. In order to report on a comparable basis, operating results discussed herein have been adjusted to exclude goodwill amortization and are presented below. Further details are contained in the “Goodwill and Other Purchased Intangible Assets” footnote contained in the notes to the financial statements under Item 8 of this Form 10-K.

<i>\$ in millions</i>	2002	2001	2000
Adjusted segment operating margin			
Electronic Systems	\$ 435	\$ 430	\$ 220
Ships	306	50	
Information Technology	249	231	123
Integrated Systems	331	297	337
Adjusted segment operating margin	1,321	1,008	680
Adjustments to reconcile to adjusted total operating margin:			
Unallocated expenses	(105)	(134)	(42)
Pension income	90	335	538
Reversal of CAS pension expense included above	100	43	42
Reversal of royalty income included above	(15)	(18)	(6)
Adjusted total operating margin	1,391	1,234	1,212
Goodwill amortization		(201)	(114)
Segment operating margin as reported	\$ 1,391	\$ 1,033	\$ 1,098

The company’s operating margin for 2002 was \$1,391 million compared with adjusted operating margin of \$1,234 in 2001 and adjusted operating margin of \$1,212 million in 2000. During 2001, the company’s operations substantially changed as a result of the Litton, EIS and Newport News acquisitions. The 2002 results reflect the first full year with these acquired businesses. These acquisitions have significantly increased the size of the company in the two year period and produced one of the largest defense contractors in the nation. The TRW acquisition was completed on December 11, 2002. The company’s 2002 income statement does not include TRW’s post-acquisition results because they were not material. The company is continuing the integration of the various businesses acquired to optimize operating performance.

Electronic Systems segment operating margin in 2002 was \$435 million compared with adjusted operating margin of \$430 million in 2001 and \$220 million in 2000. Operating margin for 2002 includes a pre-tax charge of \$65 million for the F-16 Block 60 fixed price combat avionics program, offsetting margin improvements across the sector. The charge resulted from increased costs associated with the complexity of the final design for the integrated electronic warfare system portion of the sensor suite being delivered for the Block 60 aircraft. The complexity of the design, finalized during the third quarter, and the associated material costs, exceeded that of the originally proposed configuration. The contract, which is currently in the EMD and transition to production phases, is expected to be completed in 2007. Development work inherently has more uncertainty as to future events than production work and therefore more variability in estimates of costs to complete the work. As work on these contracts progresses through the development stage into production, the risks associated with estimating the costs of development are reduced. While management has used its best judgment to estimate costs, future events could result in either upward or downward adjustments to those estimates. Approximately half of the increase in 2001 operating margin over 2000 is due to the addition of the Litton and EIS businesses. The remainder of the increase is primarily due to improved performance in land combat systems and automation and information. For 2003 management expects operating margin of nearly 10 percent of sales.

Ships segment operating margin was \$306 million in 2002 compared with adjusted operating margin of \$50 million in 2001. The increase is principally due to the Newport News and Litton acquisitions. Results in 2002

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include a third-quarter pretax charge of \$87 million recorded upon completion of a comprehensive review of the estimated costs to complete the three remaining Polar Tanker ships. The increased estimate-to-complete reflects a reduced learning curve experience ship to ship as well as one-time schedule penalties. The remaining three ships are scheduled for delivery in 2003, 2004 and 2005. The 2002 results also reflect an \$11 million increase in operating margin in the LPD program as a result of improved performance and completion of the assessment of the LPD/DDG swap agreement with Bath Iron Works. Also during the year the company reached an agreement to sell the partially complete structures and material associated with its cancelled commercial cruise ship program to Norwegian Cruise Line and successfully concluded negotiations on the majority of the program's vendor terminations resulting in a positive pretax third-quarter adjustment of \$69 million recorded to reverse previously established reserves. Following American Classic Voyages Co.'s (AMCV) bankruptcy filing on October 19, 2001, Ships stopped work on Project America, an AMCV cruise ship program to build two 1,900-passenger cruise ships. This decision followed negotiations with the U.S. Maritime Administration, which had decided not to continue the guaranteed funding necessary to complete the construction of the ships. As a result, Ships recorded a pretax charge to operating margin totaling \$60 million in 2001. Ships also reported a downward operating margin adjustment of \$13 million on the Polar Tanker program in 2001. For 2003 management expects operating margin as a percent of sales in the mid-6 percent range.

Information Technology segment operating margin in 2002 was \$249 million compared with adjusted operating margin of \$231 million in 2001 and \$123 million in 2000. Operating margin for 2002 includes a \$20 million favorable pretax adjustment resulting from the restructuring of a Technology Services contract and a \$16 million charge recorded on the contract with Oracle relating to Oracle's Enterprise License Agreement with the State of California. In an effort to maintain solid customer relations, in July 2002 Northrop Grumman and Oracle rescinded the contract with the state. The increase in operating margin in 2001 over 2000 reflects the addition of the Litton business and the three businesses acquired in late 2000 as well as higher Enterprise Information Technology operating margin. For 2003, management expects operating margin as a percent of sales to be nearly 6 percent.

Integrated Systems segment operating margin in 2002 was \$331 million compared with adjusted operating margin of \$297 million in 2001 and \$337 million in 2000. The 2002 results reflect improved performance on the B-2 and E-2C programs as well as higher F-35 sales. In 2001, Integrated Systems reported a \$20 million positive adjustment for Joint STARS contract closeouts, improved Joint STARS operating margin, and downward cumulative margin rate adjustments on unmanned vehicle contracts totaling \$10 million. Results for 2001 also reflect lower B-2 volume. In 2000, the last three B-2's were delivered under the production contract. Following the award of the last increment of production funding for the B-2, the company began recording future operating margin increases on all production aircraft as these units were delivered and accepted by the customer. At the time each unit was delivered, an assessment was made of the status of the production contract to estimate the amount of any probable additional margin available beyond that previously recognized. That unit's proportionate share of any such unrecognized remaining balance was then recorded. The company believes that this method allowed margin improvements to be recognized on a more demonstrable basis. All 15 production units have been delivered. Integrated Systems 2000 results reflect upward cumulative margin rate adjustments totaling \$16 million on the F/A-18E/F program and the effect of nonrecurring relocation and realignment costs associated with the sale of the commercial aerostructures business and the relocation of the sector's headquarters. For 2003 operating margin as a percent of sales is expected to be between 8 percent and 8.5 percent.

For 2003, management estimates operating margin as a percent of sales to be approximately 6 percent for Mission Systems and between 6.5 percent and 7 percent for Space Technology. These estimates were developed using preliminary estimates for fair value and conformance adjustments, including an estimate for annual purchased intangibles amortization expense of \$52 million for each sector. Management is still in the preliminary stages of determining fair value and conformance adjustments and the actual results could differ significantly from the estimates used.

Operating margin in 2002 includes pension income of \$90 million compared with \$335 million in 2001 and \$538 million in 2000. The lower pension income in 2002 and 2001 is principally the result of negative asset

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returns in 2001 and 2000. While in both years the company's pension fund returns exceeded benchmark indices, they posted a negative return of 4.9 percent in 2001 and a negative return at slightly less than breakeven in 2000. In 2002 the funds posted a negative return of 10 percent. For 2003, the company has lowered its assumption for expected long-term rate of return on plan assets from 9.5 percent to 9 percent to better reflect current long-term expectations for the plans' portfolios. The company has also lowered its assumption for the discount rate for obligations from 7 percent to 6.5 percent to reflect current rates as of December 31, 2002 for high-quality corporate long term bonds. As a result of the negative return on assets in 2002, the change in assumptions, and the inclusion of the TRW pension plans, the company expects to record pension expense, in accordance with SFAS No. 87 – *Employers Accounting for Pensions*, in 2003 of approximately \$600 million. Pension expense recognized under government Cost Accounting Standards (CAS), and which is therefore generally recoverable under government contracts, is estimated to be \$260 million for 2003. The company estimates pension plan contributions in 2003 to be approximately \$350 million. Starting in July 2003 the pension benefit for most employees, principally those participating in Northrop and Litton heritage plans, will be based upon new criteria, whereby employees earn age and service points over the employment period. Subsequent to the 2003 initial phase in, other exempt and non-exempt plans will be conformed to the new model. No settlement or curtailments will arise as a result of these changes. Union plans will not be affected by these plan modifications. Pension estimates for 2003 contemplate the plan changes.

Interest income in 2002 declined to \$11 million compared with \$33 million in 2001 and \$29 million in 2000. Interest income in 2001 and 2000 included interest earned on the note received in partial payment for the sale of Aerostructures. The note was collected in 2001. Interest income in all years includes interest earned on the temporary investment of excess cash.

Interest expense for 2002 was \$422 million as compared with \$373 million in 2001 and \$175 million in 2000. The 2002 increase as compared with 2001 reflects higher average debt levels resulting from the acquisitions completed in 2001. The increase in 2001 as compared with 2000 resulted from the company's initial financing activities related to the acquisitions of Litton, EIS and Newport News. Total debt was \$9.6 billion at the end of 2002 compared to \$5.5 billion at the end of 2001 and \$1.6 billion at the end of 2000. The 2002 year end balance includes \$4.8 billion of debt acquired upon completion of the TRW transaction on December 11, 2002. Following the sale of Auto in the first quarter of 2003, the company has commenced the first phase of its debt reduction plan. Interest expense net of interest income for 2003 is estimated to be approximately \$470 million.

The company's effective federal income tax rate on income from continuing operations was 31 percent in 2002, 37 percent in 2001, and 36 percent in 2000. The lower rate in 2002 reflects the elimination of goodwill amortization, most of which is non-deductible, upon adoption of SFAS No. 142 – *Goodwill and Other Intangible Assets*. In 2003, the company's effective federal income tax rate is expected to decrease to 28 percent, due to increased research and development credits.

Income (loss) from discontinued operations in 2002 and 2001 includes the results of operations of the Electron Devices and Ruggedized Displays businesses, which were sold in 2002, and the Component Technologies sector. Loss from discontinued operations in 2002 includes a goodwill impairment loss of \$186 million. The amount reported for 2000 includes the commercial aerostructures business, which was sold in that year.

The loss on disposal of discontinued operations includes any gain or loss from completed dispositions as well as the estimated loss from those businesses expected to be sold at a loss, where the sale has not yet been completed. Gains realized on the sale of any discontinued businesses are reported in the period in which their divestiture is complete.

Effective January 1, 2002, the company adopted SFAS No. 142 – *Goodwill and Other Intangible Assets*, implemented required disclosure provisions and eliminated the amortization of goodwill. During the second quarter of 2002, the company completed the first step of the required initial test for potential impairment of goodwill on the balance sheet at January 1, 2002. The company used a discounted cash flow approach, corroborated by comparative market multiples, where appropriate, to determine the fair value of reporting units. The results indicated potential impairment only in the reporting units of the Component Technologies sector due

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to unfavorable market conditions. During the third quarter of 2002, the company completed the measurement of the Component Technologies goodwill impairment as of January 1, 2002, and recorded a noncash charge of \$432 million, or \$3.67 per diluted share, which is reported in the caption "Cumulative effect of accounting change". For additional information see the "Goodwill and Other Purchased Intangible Assets" footnote to the consolidated condensed financial statements contained in this report on Form 10-K.

MEASURES OF LIQUIDITY AND CAPITAL RESOURCES

The following table is a condensed summary of the detailed cash flow information contained in the Consolidated Statements of Cash Flows. Amounts listed below are reported in the Consolidated Statements of Cash Flows as follows: cash from customers and cash to employees and suppliers of services and materials are included in cash from operating activities; cash from buyers of assets and cash to sellers of assets and suppliers of facilities are included in cash from investing activities; and cash from and to lenders and cash to shareholders are included in cash from financing activities.

<i>Years ended December 31,</i>	2002	2001	2000
Cash came from			
Customers	94%	75%	92%
Lenders	3	18	
Shareholders		4	
Buyers of assets/other	3	3	8
	100%	100%	100%
Cash went to			
Employees and suppliers of services and materials	89%	70%	80%
Sellers of assets	2	18	9
Lenders	7	10	9
Suppliers of facilities/other	1	1	1
Shareholders	1	1	1
	100%	100%	100%

In 2002 cash provided from operating activities was \$1,689 million as compared with the \$817 million generated in 2001 and the \$1,010 million generated in 2000. The increased level of cash provided in 2002 principally results from inclusion of the Litton and Newport News acquisitions for a full year, increased operating margin over 2001 and accelerated cash collections. The lower level of cash provided by operating activities in 2001 primarily reflected nonrecurring cash payments of approximately \$700 million related to the Litton, Newport News and EIS acquisitions, including change in control payments to employees and funding of pension plans. Also in 2001, the company reached a settlement agreement for antitrust and patent infringement lawsuits filed by Litton against Honeywell, Inc. Under the agreement, Honeywell agreed to pay the company \$440 million in cash, \$220 million of which was paid equally in 2001 and 2002. The entire \$440 million balance due was recorded as a fair value purchase accounting adjustment to accounts receivable on the Litton opening balance sheet. Interest expense payments increased by \$168 million in 2001 over 2000 as a result of the increase in debt to fund the business acquisitions. In 2000 cash from operations benefited from lower interest payments, reflecting the lower level of debt, and higher cash advances from customers.

Net working capital (current assets less current liabilities) at December 31, 2002, includes amounts reported as assets and liabilities of businesses held for sale which encompasses the assets and liabilities of discontinued businesses, Component Technologies sector and Auto. Applicable amounts for the prior year have been revised to conform to the 2002 presentation. Excluding these items, net adjusted working capital at December 31, 2002, was a negative \$566 million, primarily due to increased current taxes payable and customer advances.

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Adjusted net working capital at December 31, 2001 was a negative \$604 million mainly due to valuation reserves established in purchase accounting and an increase in the current portion of long-term debt arising from the company's financing activities. One of the largest components of the change in tax liabilities is the tax expense related to long-term contracts. With the completion of the B-2 EMD contract, federal and state income taxes that have been deferred during the performance of this contract will become payable. The contract was completed in the fourth quarter of 2002 with associated federal taxes of approximately \$1 billion paid in March 2003.

In accordance with SFAS No. 87 – *Employers' Accounting for Pension* the company's balance sheet at December 31, 2002, includes the recognition of an additional minimum pension liability. This adjustment was a non-cash \$994 million after-tax reduction of equity, which did not effect earnings and is potentially reversible should the performance of the capital markets improve or interest rates increase.

In 2002, cash generated from operating activities was sufficient to finance capital expenditures, pay dividends to shareholders, and reduce debt prior to completion of the TRW acquisition which included the assumption of \$4.8 billion of short-term and long-term obligations. In 2001, cash generated from operating activities, combined with cash from financing activities, was sufficient to finance capital expenditures, pay dividends to shareholders, and acquire new businesses. In 2000, cash generated by operating activities and the sale of Aerostructures provided sufficient cash flows to finance capital expenditures, pay dividends to shareholders, reduce debt and acquire new businesses. For 2003, the company expects cash from operating activities to be approximately \$1.1 billion to \$1.3 billion, before the \$1 billion B-2 tax payment.

Cash used in investing activities was \$118 million in 2002 compared to \$3.2 billion in 2001 and \$78 million in 2000. In 2002, the company sold two businesses for cash of \$135 million, incurred \$55 million for transaction costs pertaining to the acquisition of TRW, and spent approximately \$166 million in cash to complete the Newport News acquisition. In 2002 the company acquired TRW in an all stock transaction. In 2001, three businesses were acquired, two for cash and stock and one for cash, for a total cash expenditure of \$3,061 million. Four businesses were acquired in 2000, three for cash and one for stock, for a total cash expenditure of \$510 million. In 2002, capital expenditures were \$538 million, including \$30 million for capitalized software costs. In 2001, capital expenditures were \$393 million, including \$47 million for capitalized software costs, up from \$274 million in 2000, including \$32 million for capitalized software costs. Increasing levels of capital expenditures are primarily due to the acquired companies and to provide the productive capacity to perform existing contracts, prepare for future contracts, and conduct R&D in the pursuit of developing opportunities. Capital expenditure commitments at December 31, 2002, were approximately \$250 million, including \$6 million for environmental control and compliance purposes. For 2003 capital expenditures are expected to be approximately \$720 million, including approximately \$60 million for capitalized software costs. In 2001, the company received \$148 million, collecting in full the note received in the sale of Aerostructures. The sale of this operation generated \$668 million in cash in 2000. The company completed the sale of Auto to The Blackstone Group on February 28, 2003. The company received approximately \$4.7 billion, comprised of \$3.9 billion in cash and debt retained by Auto, a \$600 million payment-in-kind note and a 19.6 percent investment in the new enterprise. In March, 2003 the company commenced the first phase of its debt reduction plan by offering to purchase a range of debt securities, due 2004 to 2021, with interest rates ranging from 6.05 percent to 9.375 percent and a outstanding value of approximately \$2.85 billion. The offers were extended with a fixed spread over market of 35 to 95 basis points. The company will use a portion of the cash proceeds from the recent sale of Auto to finance the purchase of securities tendered pursuant to the offers. As of March 18, 2003 the company had repurchased 85.7 percent of the face value of the debt securities offered. The company has retained certain liabilities associated with the Auto business as well as the Aeronautical Systems business that TRW divested in 2002. The settlement of these liabilities is not expected to have a material effect on the company's financial position, results of operations, or cash flows.

Cash of \$623 million was used in financing activities in 2002 as compared to \$2,532 million provided in 2001 and \$755 million used in 2000. The use of cash in 2002 results from principal payments of long-term debt of \$500 million and dividends paid to shareholders of \$205 million. In December 2002, the company issued approximately 69.4 million shares of common stock in exchange for all of the outstanding shares of TRW in a transaction valued at approximately \$12.5 billion dollars, including the assumption of long-term debt of \$4.8 billion. For further discussion see the Acquisitions and Divestures section contained elsewhere in the Management Discussion and Analysis.

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In February 2001, Northrop Systems issued \$1.5 billion of indebtedness pursuant to its senior debt indenture consisting of \$750 million of 7.125 percent notes due 2011 and \$750 million of 7.75 percent debentures due 2031. In connection with the closing of the Litton acquisition, the company entered into unsecured senior credit facilities with lenders which initially provided for borrowings of up to \$5 billion (the "Credit Facilities") and which replaced the company's previous credit agreement. The Credit Facilities consisted of a \$2.5 billion 364-day revolving credit facility and a \$2.5 billion five-year revolving credit facility. The 364-day facility was terminated in December 2001. At December 31, 2002 and 2001, \$2.5 billion was available under the five-year revolving credit facility. Borrowings under the Credit Facilities, together with the proceeds of the February 2001 issuance of notes and debentures, were used to finance the Litton acquisition and to pay related expenses, to retire and refinance a portion of the Litton debt, and to finance continuing operations. Borrowings under the Credit Facilities bear interest at various rates, including adjusted LIBOR, or an alternate base rate plus, in each case, an incremental margin based on the company's credit rating. The Credit Facilities also provide for a facility fee on the daily aggregate amount of commitments under the revolving facilities (whether or not utilized). The facility fee is also based on the company's credit rating level.

In connection with the Litton acquisition the company issued 3.5 million shares of mandatorily redeemable Series B Convertible Preferred Stock in April 2001. Each share of Series B preferred stock has a liquidation value of \$100 per share. The liquidation value, plus accrued but unpaid dividends, is payable on April 4, 2021, the mandatory redemption date. The company has the option to redeem all, but not less than all, of the shares of Series B preferred stock at any time after seven years from the date of issuance for a number of shares of the company's common stock equal to the liquidation value plus accrued and unpaid dividends divided by the current market price of common stock determined in relation to the date of redemption. Each share of preferred stock is convertible, at any time, at the option of the holder into the right to receive shares of the company's common stock. Initially, each share is convertible into .911 shares of common stock, subject to adjustment. Holders of preferred stock are entitled to cumulative annual cash dividends of \$7 per share, payable quarterly. In any liquidation of the company, each share of preferred stock will be entitled to a liquidation preference before any distribution may be made on the company's common stock or any series of capital stock that is junior to the Series B preferred stock. In the event of a fundamental change in control of the company, holders of Series B preferred stock also have specified exchange rights into common stock of the company or into specified securities or property of another entity participating in the change in control transaction.

Upon the acquisition of TRW on December 11, 2002, TRW Automotive Inc. (TAI) became a subsidiary of Northrop Grumman Corporation. As of December 31, 2002, TAI has outstanding 100,000 shares of Series A Convertible Preferred Stock (TAI Series A) and 30,000 shares of Series B Preferred Stock (TAI Series B) (of which 14,000 shares are owned by Northrop Grumman) with a per share liquidation preference of \$1,000 plus accrued and unpaid dividends. The dividend rate of TAI Series A and B is 12 percent per year, payable quarterly, subject to increase if certain financial covenants are not maintained. TAI Series A and B shares are redeemable at the holders' option upon the sale of substantially all of the assets of TAI. The redemption, at the liquidation preference price, would be on May 29, 2003 or the holders may elect to defer such redemption until December 10, 2004. TAI Series B shares are redeemable at the holders' option on each of the 6th through 19th anniversaries and at any time after the 20th anniversary of the original issuance date. TAI may redeem the Series B shares on the 5th, 10th, 15th, and 20th anniversary dates. Holders of TAI Series B stock also may require Northrop Grumman Space & Mission Systems Corp. (formerly TRW Inc.) to repurchase the shares at the second anniversary of issuance and Northrop Grumman Space & Mission Systems Corp. may redeem these shares on the third anniversary of issuance.

On February 28, 2003, the company sold all the assets of TAI to the Blackstone Group and TAI Series A and Series B became redeemable at the holders option. The company received notification that the holder of all TAI Series A shares and 2,000 TAI Series B shares has elected to have these shares redeemed on May 29, 2003. The company has also received notification that the holder of 14,000 TAI Series B shares intends to exercise its sale redemption election on December 10, 2004. These instruments are reported as "Minority interest" in the Consolidated Statements of Financial Position as of December 31, 2002.

In November 2001, the company issued 9.2 million shares of common stock and 6.9 million equity security units, generating cash proceeds of \$1.45 billion. The proceeds were used to reduce existing debt and for general corporate purposes. Each equity security unit, issued at \$100 per unit, initially consists of a contract to purchase

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shares of Northrop Grumman common stock on November 16, 2004, and a \$100 senior note due 2006. The senior notes due 2006 are reported as long-term debt. The senior notes initially bear interest at 5.25 percent per annum, and each equity security unit also pays a contract adjustment payment of 2.0 percent per annum, for a combined yield on the equity security unit of 7.25 percent per annum. Each purchase contract which is part of the equity security units will obligate the holder thereof to purchase, for \$100, the following number of shares of the company's common stock based on the average closing price of the company's common stock over the 20 day trading period ending on the third trading day immediately preceding November 16, 2004: (i) 0.9262 shares if the average closing price equals or exceeds \$107.97, (ii) a number of shares having a value equal to \$100.00 if the average closing price is less than \$107.97 but greater than \$88.50 and (iii) 1.1299 shares if the average closing price is less than or equal to \$88.50. Prior to November 16, 2004, holders of equity security units have the opportunity to participate in a remarketing of the senior note component.

During 1996, the U.S. Department of Justice (DOJ) advised TRW that it had been named as a defendant in lawsuits brought by a former employee originally filed under seal in 1994 and 1995 in the United States District Court for the Central District of California under the quitam provisions of the civil False Claims Act. The DOJ subsequently advised that it would intervene in the litigation. In a consolidated complaint filed jointly by the former employee and the DOJ, it alleged that TRW misclassified various costs and improperly charged those costs to certain of its federal contracts, that the United States has incurred substantial damages, and that TRW is liable for approximately \$56 million in single damages, subject to trebling, plus penalties, post-judgment interest, costs (including attorney's fees) and "all other proper relief." All substantive allegations against TRW have been denied in its answer to the consolidated complaint. The company intends to vigorously defend this matter. Trial is scheduled for November 2003.

On February 3, 2003, the Department of Justice filed a civil False Claims Act case against Newport News Shipbuilding, Inc. in the United States District Court for the Eastern District of Virginia. The government seeks single damages in an amount in excess of \$72 million, plus penalties, costs and interest. Damages may be trebled under the False Claims Act. The complaint alleges that the company improperly charged certain independent research and development cost to its government contracts with respect to the years 1994 through 1999. The company denies the allegations and intends to vigorously defend the matter.

The IRS is presently completing its audits of the B-2 program through the tax years ending December 31, 2000. Upon completion of these audits, the IRS may adopt a position that the B-2 program was completed in a year prior to 2002, which would create the potential for additional interest expense. Although it is not possible to predict the outcome of the tax audits at this time, management believes that its tax accounting for the B-2 program reflects the appropriate timing of contract completion.

In the ordinary course of business, the company utilizes standby letters of credit and other arrangements with financial institutions, principally to guarantee the future performance on certain company contracts. Such financial arrangements supporting contract performance totaled \$841 million at December 31, 2002 and \$684 million at December 31, 2001. Increases in the 2002 period over 2001 reflect the effect of the TRW acquisition described elsewhere in this Form 10-K. The company also maintains self-insured workers' compensation plans, which are secured by surety bonds and a general agreement of indemnity with the surety. At December 31, 2002 and 2001, there were \$439 million and \$287 million of such instruments outstanding, respectively. For all years presented the company had no material related party transactions.

To provide for long-term liquidity the company believes it can obtain additional capital from such sources as: the public or private capital markets, the further sale of assets, sale and leaseback of operating assets, and leasing rather than purchasing new assets. Cash on hand at the beginning of the year plus cash generated from operations and cash available under credit lines are expected to be sufficient in 2003 to service debt, finance capital expansion projects, pay federal income taxes and continue paying dividends to the shareholders. The company will continue to provide the productive capacity to perform its existing contracts, prepare for future contracts, and conduct R&D in the pursuit of developing opportunities. While these expenditures tend to limit short-term liquidity, they are made with the intention of improving the long-term growth and profitability of the company.

OTHER MATTERS

Environmental Issues

Federal, state and local laws relating to the protection of the environment affect the company's manufacturing operations. The company has provided for the estimated cost to complete remediation where the company has determined that it is probable that the company will incur such costs in the future, including those for which it has been named a Potentially Responsible Party (PRP) by the Environmental Protection Agency or similarly designated by other environmental agencies. The company has been designated a PRP under federal and state Superfund laws. It is difficult to estimate the timing and ultimate amount of environmental cleanup costs to be incurred in the future due to the uncertainties regarding the extent of the required cleanup and the status of the law, regulations and their interpretations. Nonetheless, to assess the potential impact on the company's financial statements, management estimates the total reasonably possible remediation costs that could be incurred by the company. Such estimates take into consideration the professional judgment of the company's environmental engineers and, when necessary, consultation with outside environmental specialists. In most instances, only a range of reasonably possible costs can be estimated. However, in the determination of accruals, the most probable amount is used when determinable and the minimum is used when no single amount is more probable. The company records accruals for environmental cleanup costs in the accounting period in which the company's responsibility is established and the costs can be reasonably estimated. The company does not anticipate and record insurance recoveries before collection is probable. Management estimates that at December 31, 2002, the range of reasonably possible future costs for environmental remediation, including Superfund sites, is \$146 million to \$202 million, of which \$156 million has been accrued. Should other PRP's not pay their allocable share of remediation costs, the company may have to incur costs in addition to those already estimated and accrued. The company makes the investments it believes will be necessary in order to comply with environmental laws; the amounts, while not insignificant, are not considered material to the company's financial position, results of operations, or cash flows.

The Nuclear Regulatory Commission, the Department of Energy and the Department of Defense regulate and control various matters relating to nuclear materials handled by the company. Subject to certain requirements and limitations, the company's government contracts generally provide for indemnity by the U.S. Government for any loss arising out of or resulting from certain nuclear risks.

New Accounting Pronouncements

In December 2002, the Financial Accounting Standards Board issued SFAS No. 148 – *Accounting for Stock-Based Compensation – Transition and Disclosure, an amendment of SFAS No. 123* which is effective for financial statements for fiscal years ending after December 15, 2002. This statement, which revises the disclosure only provisions of SFAS No. 123, will have no effect on the company's financial position, results of operations or cash flows. The provisions of this statement were adopted for the year ended December 31, 2002.

In November 2002, Financial Accounting Standards Board issued FIN 45 – *Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others*. This Interpretation elaborates on the disclosures to be made by a guarantor in its interim and annual financial statements about its obligations under certain guarantees that it has issued. It also clarifies that a guarantor is required to recognize, at the inception of a guarantee, a liability for the fair value of the obligation undertaken by issuing the guarantee. Adoption of this statement is not expected to have a significant effect on the company's financial position, results of operations or cash flows.

In June 2002, the Financial Accounting Standards Board issued SFAS No. 146 – *Accounting for Costs Associated with Exit or Disposal Activities*, which requires a liability for a cost associated with an exit or disposal activity to be recognized and measured at its fair value in the period in which the liability is incurred. This statement will be adopted January 1, 2003, and is not expected to have a significant effect on the company's financial position, results of operations or cash flows.

In April 2002, the Financial Accounting Standards Board issued SFAS No. 145 – *Rescission of FASB Statements No. 4, 44 and 64, Amendment of FASB Statement No. 13, and Technical Corrections*. This statement clarifies

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guidance related to the reporting of gains and losses from extinguishment of debt and resolves inconsistencies related to the required accounting treatment of certain lease modifications. The provisions of this statement relating to extinguishment of debt become effective for financial statements issued for fiscal years beginning after May 15, 2002. The provisions of this statement relating to lease modification are effective for transactions occurring after May 15, 2002. Adoption of this standard did not have a material effect on the company's financial position, results of operations or cash flows.

In October 2001, the Financial Accounting Standards Board issued SFAS No. 144 – *Accounting for the Impairment or Disposal of Long-Lived Assets*, which replaces SFAS No. 121 – *Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of*. SFAS No. 144 resolves implementation issues previously experienced under SFAS No. 121 and broadens the reporting of discontinued operations. This statement became effective for financial statements issued for fiscal years beginning after December 15, 2001. Adoption of this standard did not have a material effect on the company's financial position, results of operations or cash flows.

In August 2001, the Financial Accounting Standards Board issued SFAS No. 143 – *Accounting for Asset Retirement Obligations*. SFAS No. 143 addresses financial accounting and reporting for obligations associated with the retirement of tangible long-lived assets and the associated asset retirement costs. This statement becomes effective for financial statements issued for fiscal years beginning after June 15, 2002. Management is currently evaluating the effect that adoption of this standard will have on the company's results of operations and financial position.

In June 2001, the Financial Accounting Standards Board issued SFAS No. 141 – *Business Combinations*, and SFAS No. 142 – *Goodwill and Other Intangible Assets*. SFAS No. 141 requires the purchase method of accounting for business combinations initiated after June 30, 2001 and eliminates the pooling-of-interests method. Adoption of SFAS No. 141 did not have a significant effect on the company's financial position, results of operations, or cash flows. SFAS No. 142 changes the accounting for goodwill from an amortization method to an impairment-only approach. Upon adoption of this statement, amortization of goodwill, including goodwill recorded in past business combinations, ceased and an initial impairment assessment of goodwill was performed. Annual impairment tests are required thereafter. The company adopted SFAS No. 142 on January 1, 2002 and recorded an initial goodwill impairment charge of \$432 million, which is reported under the income statement caption "Cumulative Effect of Accounting Change".

FORWARD LOOKING STATEMENTS AND IMPORTANT FACTORS

Certain statements and assumptions in this report contain or are based on “forward-looking” information (that Northrop Grumman believes to be within the definition in the Private Securities Litigation Reform Act of 1995) and involve risks and uncertainties, and include, among others, statements in the future tense, and all statements accompanied by terms such as “project,” “expect,” “estimate,” “assume,” “intend”, “anticipate”, and variations thereof and similar terms. This information reflects the company’s best estimates when made, but the company expressly disclaims any duty to update this information if new data becomes available or estimates change after the date of this report. Important factors that could cause actual results to differ materially from those suggested by the company’s forward-looking statements include:

- The company depends on a limited number of customers. The company is heavily dependent on government contracts many of which are only partially funded; the termination or failure to fund one or more significant contracts could have a negative impact on our operations. The company is a supplier, either directly or as a subcontractor or team member, to the U.S. Government and its agencies as well as foreign governments and agencies. These contracts are subject to each customers’ political and budgetary constraints, changes in short-range and long-range plans, the timing of contract awards, the congressional budget authorization and appropriation processes, the government’s ability to terminate contracts for convenience or for default, as well as other risks such as contractor suspension or debarment in the event of certain violations of legal and regulatory requirements.
- Many of the company’s contracts are fixed-price contracts. While firm, fixed-price contracts allow the company to benefit from cost savings, they also expose the company to the risk of cost overruns. If the company’s initial estimates used for calculating contract prices are incorrect, the company can incur losses on those contracts. In addition, some of the company’s contracts have provisions relating to cost controls and audit rights and if the company fails to meet the terms specified in those contracts then the company may not realize their full benefits. The company’s ability to manage costs on these contracts may affect its financial condition. Lower earnings caused by cost overruns would have an adverse effect on the company’s financial results.
- The company is subject to significant competition. The company’s markets include defense and commercial areas where it competes with companies of substantial size and resources. The company’s success or failure in winning new contracts or follow on orders for its existing or future products may cause material fluctuations in the company’s future revenues and operating results.
- The company’s operations may be subject to events that cause adverse effects on its ability to meet contract obligations within anticipated cost and time constraints. The company may encounter internal problems and delays in delivery as a result of issues with respect to design, technology, licensing and patent rights, labor or materials and components that prevent the company from achieving contract requirements. The company may be affected by delivery or performance issues with key suppliers and subcontractors, as well as other factors inherent in the company’s businesses that may cause operating results to be adversely affected. Changes in inventory requirements or other production cost increases may also have a negative impact on the company’s operating results.
- The company must integrate its acquisitions successfully. Acquiring businesses is a significant challenge. If the company does not execute its acquisition and integration plans for these businesses in accordance with the company’s strategic timetable, the company’s operating results may be adversely affected. The company acquired TRW in 2002 and several businesses in 2001 including Litton and Newport News. The company believes its integration processes are well-suited to achieve the anticipated strategic and operating benefits of these acquisitions, but if the company does not perform its plans as intended, or if the company encounters unforeseen problems in the acquired businesses, or problems in those businesses subsequently develop, the company’s operating results may be adversely affected. Among the factors that may be involved would be unforeseen costs and expenses, overvalued assets, inflated contract values, previously undisclosed or undervalued liabilities, diversion of management focus, and any effects of complying with government-imposed organizational conflicts of interest rules as a result of the acquisitions.

- The company relies on continuous innovation. The company is dependent upon its ability to anticipate changing needs for defense products, military and civilian electronic systems and support, naval vessels, space technologies, and information technology. The company's success is dependent on designing new products that will respond to such requirements within customers' price limitations.
- The company faces significant challenges in the international marketplace. The company's international business is subject to changes in import and export policies, technology transfer restrictions, limitations imposed by United States law that are not applicable to foreign competitors, and other legal, financial and governmental risks.
- The company assumes that any divestiture of non-core businesses and assets will be completed successfully. The company's performance may be affected by its inability to successfully dispose of assets and businesses that do not fit with, or are no longer appropriate to, the company's strategic plan. If any sales of such businesses or assets can be made only at a loss, the company's earnings will be reduced.
- The company is subject to environmental litigation and other litigation, which, if not resolved within the company's expectation, could reduce future operating results.
- The company's pension income (expense) may fluctuate significantly. Pension income (expense) is based on assumptions of future market performance and actual performance may differ. If an event requires the company to reestimate its pension income (expense) during the year, its reported earnings could vary significantly.
- The indebtedness of the company has increased as a result of the acquisitions of Litton, EIS, Newport News, and TRW. The increase in debt has increased demands on the cash resources of the company.
- The company's tax filings are regularly examined by federal and state taxing authorities. Results of these examinations can result in tax deficiencies, cumulative interest payments, fines and penalties. Such assessments could negatively affect the company's results of operations, financial condition and/or cash flow.
- The company intends that all forward-looking statements it makes will be subject to safe harbor protection of the federal securities laws as found in Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934.

Accordingly, you should not rely on the accuracy of predictions contained in forward-looking statements. These statements speak only as of the date when they are made. The company cannot undertake any obligation to update its forward-looking statements to reflect events, circumstances, and changes in expectations or the occurrence of unanticipated events occurring after the date of those statements.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

The company is exposed to market risk, primarily related to interest rates and foreign currency exchange rates. Financial instruments subject to interest rate risk include fixed-rate long-term debt obligations, variable-rate short-term debt outstanding under the credit agreement, short-term investments, and long-term notes receivable. At December 31, 2002, the company had an immaterial amount of variable rate debt outstanding. Substantially all borrowings were fixed-rate long-term debt obligations of which a significant portion are not callable until maturity. The company's sensitivity to a 1 percent change in interest rates is tied to its \$2.5 billion credit agreement, which has no balance outstanding at December 31, 2002. The estimated expense would be 1 percent of any outstanding balance. The company may enter into interest rate swap agreements to manage its exposure to interest rate fluctuations. At December 31, 2002, no interest rate swap agreements were in effect. The company enters into foreign currency forward contracts to manage foreign currency exchange rate risk related to receipts from customers and payments to suppliers denominated in foreign currencies. Foreign currencies are traditionally

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converted to U.S. dollars upon receipt to limit currency fluctuation exposures. At December 31, 2002, the amount of foreign currency forward contracts outstanding was not material. The company does not consider the market risk exposure relating to foreign currency exchange to be material. The company does not hold or issue derivative financial instruments for trading purposes. Standby letters of credit are sometimes used by the company to guarantee future performance on its contracts. All letters of credit are short-term and denominated in U.S. dollars to avoid market risk exposures.

In connection with the TRW acquisition, the company has acquired investments in RF Micro Devices, Inc. (RFMD) and Applera Corporation—Celera Genomics Group (Celera), two publicly traded companies. The company has also acquired certain hedges that are designed to protect the forecasted cash flows resulting from the future sale of shares in these investments. These hedges also mitigate any downside risk of loss and provide for additional gain depending on market conditions at maturity.

In 2000, TRW monetized a portion of its holdings in RFMD through the execution of three forward share sale agreements. The company is now obligated under these agreements to deliver up to 4 million shares of RFMD common stock, in the aggregate, upon maturity of the contracts. Also in 2000, TRW similarly monetized its holdings of 229,354 shares in Celera through an agreement maturing in December 2003. The company is obligated under this agreement to deliver up to 229,354 shares of Celera common stock, in the aggregate, upon maturity of the contract. The actual number of shares to be delivered will be determined on the basis of a formula in the agreements. Through the setting of a floor and ceiling price, these agreements eliminate the company's exposure to downside market risk, while enabling the company to retain potential market appreciation up to the respective ceiling price. Certain terms of the agreements are summarized below:

	RFMD			Celera
	February 2003	August 2003	February 2004	December 2003
Maturity dates	February 2003	August 2003	February 2004	December 2003
Number of shares	1,333,334	1,333,334	1,333,332	229,354
Floor price per share	\$54	\$54	\$54	\$102
Ceiling price per share	79	86	93	176
Up-front proceeds as a percent of floor price	80%	78%	75%	80%

The investments in RFMD and Celera and the related hedge portion of the forward share sale agreements are carried at fair market value. Changes in fair market value of the company's shares of RFMD and Celera, including the shares monetized, are recorded in the other comprehensive income (loss) component of shareholders' equity. Any gains or losses reported in other comprehensive income (loss) will be reclassified to net income at the maturity of these agreements.

The fair value of the RFMD shares at December 31, 2002, excluding the effect of the forward share sale agreements, was approximately \$30 million. The fair value of the Celera shares at December 31, 2002, excluding the effect of the forward share sale agreement, was approximately \$2 million.

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Item 8: Financial Statements and Supplementary Data

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

December 31, \$ in millions

	2002	2001
Assets:		
Current assets		
Cash and cash equivalents	\$ 1,412	\$ 464
Accounts receivable	2,889	2,643
Inventoried costs	1,091	1,098
Deferred income taxes	662	36
Prepaid expenses and other current assets	160	125
Assets of businesses held for sale	9,621	1,207
Total current assets	15,835	5,573
Property, plant and equipment		
Land and land improvements	350	300
Buildings	1,538	1,162
Machinery and other equipment	2,948	2,189
Leasehold improvements	160	81
	4,996	3,732
Accumulated depreciation	(1,391)	(1,148)
Net property, plant and equipment	3,605	2,584
Other assets		
Goodwill, net of accumulated amortization of \$730 in 2002 and 2001	15,657	7,903
Other purchased intangible assets, net of accumulated amortization of \$760 in 2002 and \$596 in 2001	2,553	1,072
Prepaid retiree benefits cost and intangible pension asset	3,618	3,075
Deferred income taxes	174	2
Miscellaneous other assets	824	609
Total other assets	22,826	12,661
Total Assets	\$ 42,266	\$ 20,818

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<i>December 31, \$ in millions</i>	2002	2001
Liabilities and Shareholders' Equity:		
Current liabilities		
Notes payable to banks	\$ 22	\$ 30
Current portion of long-term debt	203	420
Trade accounts payable	1,427	982
Accrued employees' compensation	1,018	827
Advances on contracts	1,006	842
Contract loss provisions	453	481
Income taxes payable	1,237	137
Deferred income taxes		344
Other current liabilities	1,414	907
Liabilities of businesses held for sale	4,593	130
Total current liabilities	11,373	5,100
Long-term debt	9,398	5,038
Accrued retiree benefits	5,942	1,927
Deferred income taxes		669
Other long-term liabilities	742	221
Minority interest	139	122
Preferred stock	350	350
Shareholders' equity		
Paid-in capital		
Preferred stock, 10,000,000 shares authorized; 3,500,000 shares issued and outstanding, reported above		
Common stock, 800,000,000 shares authorized; issued and outstanding: 2002—182,602,390; 2001—108,556,081	12,511	4,451
Retained earnings	2,870	3,011
Unearned compensation	(11)	(18)
Accumulated other comprehensive loss	(1,048)	(53)
Total shareholders' equity	14,322	7,391
Total Liabilities and Shareholders' Equity	\$ 42,266	\$ 20,818

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

NORTHROP GRUMMAN CORPORATION

CONSOLIDATED STATEMENTS OF INCOME

<i>Years ended December 31, \$ in millions, except per share</i>	2002	2001	2000
Sales and service revenues			
Product sales	\$13,638	\$ 10,118	\$ 6,133
Service revenues	3,568	2,894	1,485
Total revenue	17,206	13,012	7,618
Cost of sales			
Cost of product sales	10,842	8,146	4,160
Cost of service revenues	3,262	2,561	1,286
Administrative and general expenses	1,711	1,272	1,074
Operating margin	1,391	1,033	1,098
Other income (deductions)			
Interest income	11	33	29
Interest expense	(422)	(373)	(175)
Other, net	29	34	23
Income from continuing operations before income taxes and cumulative effect of accounting change	1,009	727	975
Federal and foreign income taxes	312	268	350
Income from continuing operations before cumulative effect of accounting change	697	459	625
Income (loss) from discontinued operations, net of federal income taxes	(181)	(32)	39
Loss on disposal of discontinued operations, net of federal income taxes	(20)		(56)
Income before cumulative effect of accounting change	496	427	608
Cumulative effect of accounting change	(432)		
Net income	\$ 64	\$ 427	\$ 608
Weighted average common shares outstanding, in millions	115.5	84.5	70.6
Basic earnings (loss) per share			
Continuing operations	\$ 5.82	\$ 5.22	\$ 8.86
Discontinued operations	(1.57)	(.38)	.55
Disposal of discontinued operations	(.17)		(.80)
Before cumulative effect of accounting change	4.08	4.84	8.61
Accounting change	(3.73)		
Basic earnings per share	\$.35	\$ 4.84	\$ 8.61
Diluted earnings (loss) per share			
Continuing operations	\$ 5.72	\$ 5.17	\$ 8.82
Discontinued operations	(1.54)	(.37)	.55
Disposal of discontinued operations	(.17)		(.79)
Before cumulative effect of accounting change	4.01	4.80	8.58
Accounting change	(3.67)		
Diluted earnings per share	\$.34	\$ 4.80	\$ 8.58

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

NORTHROP GRUMMAN CORPORATION**CONSOLIDATED STATEMENTS OF COMPREHENSIVE (LOSS) INCOME**

<i>Years ended December 31, \$ in millions</i>	2002	2001	2000
Net income	\$ 64	\$ 427	\$ 608
Other comprehensive income (loss)			
Change in cumulative translation adjustment	(1)	(3)	(3)
Minimum pension liability adjustments, before tax	(1,699)	(41)	(2)
Income tax benefit	705	14	1
Other comprehensive loss, net of tax	(995)	(30)	(4)
Comprehensive loss	\$ (931)	\$ 397	\$ 604

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

NORTHROP GRUMMAN CORPORATION

CONSOLIDATED STATEMENTS OF CASH FLOWS

<i>Years ended December 31, \$ in millions</i>	2002	2001	2000
Operating Activities			
Sources of Cash			
Cash received from customers			
Progress payments	\$ 5,748	\$ 3,102	\$ 1,438
Other collections	12,322	11,148	7,003
Proceeds from litigation settlement	220	220	
Income tax refunds received	74	23	15
Interest received	69	17	17
Other cash receipts	34	24	10
Cash provided by operating activities	18,467	14,534	8,483
Uses of Cash			
Cash paid to suppliers and employees	16,278	13,251	7,250
Interest paid	334	333	165
Income taxes paid	149	126	57
Other cash payments	17	7	1
Cash used in operating activities	16,778	13,717	7,473
Net cash provided by operating activities	1,689	817	1,010
Investing Activities			
Additions to property, plant and equipment	(538)	(393)	(274)
Payments for businesses purchased, net of cash acquired	181	(3,061)	(510)
Proceeds from sale of businesses	135	18	668
Proceeds from sale of property, plant and equipment	45	86	44
Proceeds from sale of investment	29		
Collection of note receivable		148	
Other investing activities	30	(2)	(6)
Net cash used in investing activities	(118)	(3,204)	(78)
Financing Activities			
Borrowings under lines of credit	507	1,173	
Repayment of borrowings under lines of credit	(501)	(1,306)	(175)
Principal payments of long-term debt/capital leases	(500)	(119)	(485)
Proceeds from issuance of long-term debt		1,491	
Proceeds from issuance of equity security units		690	
Dividends paid	(205)	(158)	(114)
Proceeds from issuance of stock	76	825	19
Other financing activities		(64)	
Net cash (used in) provided by financing activities	(623)	2,532	(755)
Increase in cash and cash equivalents	948	145	177
Cash and cash equivalents balance at beginning of year	464	319	142
Cash and cash equivalents balance at end of year	\$ 1,412	\$ 464	\$ 319

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<i>Years ended December 31, \$ in millions</i>	2002	2001	2000
Reconciliation of Net Income to Net Cash			
Provided by Operating Activities:			
Net income	\$ 64	\$ 427	\$ 608
Adjustments to reconcile net income to net cash provided			
Depreciation	361	266	175
Amortization of intangible assets	164	379	206
Common stock issued to employees	67	46	8
Change in accounting principle	432		
Impairment of goodwill	186		
Loss on disposal of discontinued operations	20		56
Retiree benefits expense(income)	42	(257)	(492)
Decrease(increase) in			
Accounts receivable	(771)	1,298	(679)
Inventoried costs	(211)	36	77
Prepaid expenses and other current assets	38	19	(28)
Increase(decrease) in			
Progress payments	1,109	(646)	666
Accounts payable and accruals	(265)	(714)	87
Provisions for contract losses	(135)	(65)	20
Deferred income taxes	(1,513)	174	345
Income taxes payable	1,049	(9)	28
Retiree benefits	900	(75)	(92)
Increase (decrease) in net assets of businesses held for sale	124	(87)	
Other noncash transactions	28	25	25
Net cash provided by operating activities	\$ 1,689	\$ 817	\$ 1,010
Noncash Investing and Financing Activities:			
Sale of business			
Note received, net of discount			\$ 125
Purchase of businesses			
Fair value of assets acquired	\$ 20,206	\$ 11,957	\$ 910
Cash paid, net of cash acquired	181	(3,061)	(510)
Noncash stock compensation	(151)		
Common stock issued	(7,753)	(2,405)	(140)
Mandatorily redeemable preferred stock issued		(350)	
Liabilities assumed	\$ 12,483	\$ 6,141	\$ 260

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

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**CONSOLIDATED STATEMENTS OF CHANGES
IN SHAREHOLDERS' EQUITY**

<i>Years ended December 31, \$ in millions, except per share</i>	2002	2001	2000
Paid-in Capital			
At beginning of year	\$ 4,451	\$ 1,200	\$ 1,028
Stock issued in purchase of businesses	7,753	2,405	140
Stock issued in public offering		784	
Equity security units issuance fees and forward contract fees		(56)	
Employee stock awards and options	307	118	32
At end of year	12,511	4,451	1,200
Retained Earnings			
At beginning of year	3,011	2,742	2,248
Net income	64	427	608
Cash dividends	(205)	(158)	(114)
At end of year	2,870	3,011	2,742
Unearned Compensation			
At beginning of year	(18)		
Issuance of unvested stock options		(24)	
Amortization of unearned compensation	7	6	
At end of year	(11)	(18)	
Accumulated Other Comprehensive Loss			
At beginning of year	(53)	(23)	(19)
Change in cumulative translation adjustment	(1)	(3)	(3)
Change in additional minimum pension liability, net of tax	(994)	(27)	(1)
At end of year	(1,048)	(53)	(23)
Total shareholders' equity	\$14,322	\$ 7,391	\$ 3,919
Book value per share	\$ 78.27	\$ 68.08	\$ 54.38
Cash dividends per share	\$ 1.60	\$ 1.60	\$ 1.60

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

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Principles of Consolidation and Significant Accounting Estimates

The consolidated financial statements include the accounts of the company and its subsidiaries. All material intercompany accounts, transactions and profits are eliminated in consolidation.

The company's financial statements are in conformity with generally accepted accounting principles. The preparation thereof requires management to make estimates and assumptions 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 revenues and expenses during the reporting period. Estimates have been prepared on the basis of the most current and best available information and actual results could differ materially from those estimates.

Nature of Operations

Northrop Grumman provides technologically advanced, innovative products, services and solutions in defense and commercial electronics, information technology, systems integration, mission systems, space technology and nuclear and non-nuclear shipbuilding and systems. As prime contractor, principal subcontractor, partner, or preferred supplier, Northrop Grumman participates in many high-priority defense and commercial technology programs in the United States and abroad. The majority of the company's products and services are ultimately sold to the U. S. Government and the company is therefore affected by, among other things, the federal budget process.

Revenue Recognition

As a defense contractor engaging in long-term contracts, the company extensively utilizes the cost-to-cost type and the units-of-delivery type of percentage-of-completion method of accounting. Sales under cost-reimbursement contracts and construction-type contracts that provide for delivery at a low volume per year or a small number of units after a lengthy period of time over which a significant amount of costs have been incurred are accounted for using the cost-to-cost type of percentage-of-completion method of accounting. Under this method sales are recorded as costs are incurred and include estimated earned fees or profits calculated on the basis of the relationship between costs incurred and total estimated costs. Sales under construction-type contracts that provide for delivery at a high volume per year are accounted for using the units-of-delivery type of percentage-of-completion method of accounting. Under this method sales are recognized as deliveries are made and are computed on the basis of the estimated final average unit cost plus profit. Revenue on service contracts is recognized as the services are performed.

Certain contracts contain provisions for price redetermination or for cost and/or performance incentives. Such redetermined amounts or incentives are included in sales when the amounts can reasonably be determined. In the case of the B-2 bomber production contract, changes in operating margin were recognized on a units-of-delivery basis and recorded as each equivalent production unit was delivered. Amounts representing contract change orders, claims or limitations in funding, are included in sales only when they can be reliably estimated and realization is probable. In the period in which it is determined that a loss will result from the performance of a contract, the entire amount of the estimated ultimate loss is charged against income. Loss provisions are first offset against costs that are included in assets, with any remaining amount reflected in liabilities. Other changes in estimates of sales, costs and profits are recognized using the cumulative catch-up method of accounting. This method recognizes in the current period the cumulative effect of the changes on current and prior periods. Hence, the effect of the changes on future periods of contract performance is recognized as if the revised estimates had been the original estimates.

Contract Research and Development

Customer-sponsored research and development costs (direct and indirect costs incurred pursuant to contractual arrangements) are accounted for like other contracts.

Noncontract Research and Development

This category includes independent research and development costs and company-sponsored research and development costs (direct and indirect costs not recoverable under contractual arrangements). Independent research and development (IR&D) costs are included in administrative and general expenses (indirect costs allocable to U. S. government contracts) whereas company-sponsored research and development costs are not allocable to U. S. government contracts and are therefore charged against income as incurred.

Product Warranty Costs

The company provides certain product warranties that require repair or replacement of non-conforming items for a specified period of time. Most of the company's product warranties are provided under government contracts and are generally recoverable from the customer.

Environmental Costs

Environmental liabilities are accrued when the company determines it is responsible for remediation costs and such amounts are reasonably estimable. When only a range of amounts is established and no amount within the range is more probable than another, the minimum amount in the range is recorded. The company does not anticipate and record insurance recoveries before collection is probable.

Foreign Currency Forward Contracts

The company enters into foreign currency forward contracts to manage foreign currency exchange risk related to receipts from customers and payments to suppliers denominated in foreign currencies. Gains and losses from such transactions are included as contract costs. At December 31, 2002, the amount of foreign currency forward contracts outstanding was not material.

Interest Rate Swap Agreements

The company may enter into interest rate swap agreements to offset the variable-rate characteristic of certain variable-rate term loans which may be outstanding from time to time under the company's Credit Facilities. Interest on these interest rate swap agreements is recognized as an adjustment to interest expense in the period incurred. Unrealized gains(losses) on interest rate swap agreements are included in income in the period incurred. No interest rate swap agreements were in effect during the year ended December 31, 2002.

Income Taxes

Provisions for federal, foreign, state and local income taxes are calculated on reported financial statement pretax income based on current tax law and also include the cumulative effect of any changes in tax rates from those used previously in determining deferred tax assets and liabilities. Such provisions differ from the amounts currently payable because certain items of income and expense are recognized in different time periods for financial reporting purposes than for income tax purposes.

The company accounts for certain contracts in process using different methods of accounting for financial statements and tax reporting and thus provides deferred taxes on the difference between the financial and taxable income reported during the performance of such contracts.

In accordance with industry practice, state and local income and franchise tax provisions are included in administrative and general expenses.

Cash and Cash Equivalents

Cash and cash equivalents include interest-earning debt instruments that mature in three months or less from the date purchased.

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Accounts Receivable

Accounts receivable include amounts billed and currently due from customers, amounts currently due but unbilled (primarily related to contracts accounted for under the cost-to-cost type of percentage-of-completion method of accounting), certain estimated contract changes, claims in negotiation that are probable of recovery, and amounts retained by the customer pending contract completion.

Inventoried Costs

Inventoried costs primarily relate to work in process under fixed-price type contracts (excluding those included in unbilled accounts receivable as previously described). They represent accumulated contract costs less the portion of such costs allocated to delivered items. Accumulated contract costs include direct production costs, factory and engineering overhead, production tooling costs, and allowable administrative and general expenses (except for general corporate expenses and IR&D allocable to commercial contracts, which are charged against income as incurred).

In accordance with industry practice, inventoried costs are classified as a current asset and include amounts related to contracts having production cycles longer than one year.

Product inventory primarily consists of raw materials and is stated at the lower of cost or market, generally using the average cost method.

Depreciable Properties

Property, plant and equipment owned by the company are depreciated over the estimated useful lives of individual assets. Capital leases are amortized over the estimated useful lives of individual assets. Costs incurred for computer software developed or obtained for internal use are capitalized and classified in machinery and other equipment. Capitalized software costs are amortized over no more than three years. Most of these assets are depreciated using declining-balance methods, with the remainder using the straight-line method, with the following lives:

	Years
Land improvements	2-40
Buildings	2-45
Machinery and other equipment	2-40
Leasehold improvements	Length of lease

Goodwill and Other Purchased Intangible Assets

Effective January 1, 2002, the company adopted Statement of Financial Accounting Standards (SFAS) No. 142 – *Goodwill and Other Intangible Assets*, which changed the accounting for goodwill and “indefinite lived” intangibles from an amortization method to an impairment-only approach. Accordingly, amortization of goodwill, including goodwill recorded in past business combinations, ceased on December 31, 2001. Beginning in 2002, impairment tests are performed at least annually as of April 30, and more often as circumstances require. When it is determined that an impairment has occurred, an appropriate charge to operations is recorded.

Goodwill and other purchased intangible assets balances are included in the identifiable assets of the industry segment to which they have been assigned. Any goodwill impairment, as well as the amortization of other purchased intangible assets, is charged against the respective industry segment operating margin.

Forward Share Sale Agreements

The company hedges certain equity investments in publicly traded companies. These instruments protect the forecasted cash flows resulting from the contractual sale of shares in certain of the company’s investments in unconsolidated affiliates. These instruments are accounted for in accordance with SFAS No. 133 – *Accounting for Derivative Instruments and Hedging Activities*, as amended. The investments and the related hedge instruments are carried at fair market value. Changes in fair market value of the investments, including the shares monetized, are

NORTHROP GRUMMAN CORPORATION

recorded in the other comprehensive income (loss) component of shareholders' equity. Any gains or losses reported in other comprehensive income (loss) will be reclassified to net earnings at the maturity of these agreements.

Foreign Currency Translation

For operations outside the U. S. that prepare financial statements in currencies other than the U. S. dollar, results of operations and cash flows are translated at average exchange rates during the period, and assets and liabilities are translated at end-of-period exchange rates. Translation adjustments are included as a separate component of accumulated other comprehensive income (loss) in shareholders' equity.

Stock Compensation Plans

The company applies Accounting Principles Board Opinion 25 – *Accounting for Stock Issued to Employees* and related Interpretations in accounting for awards made under the plans. When stock options are exercised, the amount of the cash proceeds to the company is recorded as an increase to paid-in capital. No compensation expense is recognized in connection with the company's original issue stock options. Compensation for restricted performance stock rights is estimated and accrued over the vesting period.

<i>December 31, \$ in millions, except per share</i>	2002	2001	2000
Net income as reported	\$ 64	\$ 427	\$ 608
Stock based compensation, net of tax, included in net income as reported	43	13	9
Stock based compensation, net of tax, that would have been included in net income, if the fair value method had been applied to all awards	(65)	(26)	(21)
Pro-forma net income using the fair value method	\$ 42	\$ 414	\$ 596
Basic Earnings Per Share			
As reported	\$.35	\$ 4.84	\$ 8.61
Pro-forma	\$.16	\$ 4.69	\$ 8.44
Diluted Earnings Per Share			
As reported	\$.34	\$ 4.80	\$ 8.58
Pro-forma	\$.15	\$ 4.65	\$ 8.41

Had compensation expense been determined based on the fair value at the grant dates for stock option awards, consistent with the method of SFAS No. 123–*Accounting for Stock Based Compensation*, net income, basic earnings per share, and diluted earnings per share would have been as shown in the table above. These amounts were determined using weighted-average per share fair values for market options granted in 2002, 2001, and 2000 of \$39, \$26 and \$25 respectively. The fair value of each option grant was estimated on the date of grant using the Black-Scholes option-pricing model based on an expected life of six years and for 2002, 2001, and 2000, respectively, the following additional assumptions: dividend yield; 1.4 percent, 2.0 percent and 2.2 percent; expected volatility; 35 percent, 33 percent and 32 percent; and risk-free interest rate; 3.5 percent, 4.7 percent and 6.6 percent.

Financial Statement Reclassification

Certain amounts in the prior year financial statements and related notes have been reclassified to conform to the 2002 presentation.

NEW ACCOUNTING STANDARDS

In December 2002, the Financial Accounting Standards Board issued SFAS No. 148 – *Accounting for Stock-Based Compensation – Transition and Disclosure, an amendment of SFAS No. 123* which is effective for financial statements for fiscal years ending after December 15, 2002. This statement, which revises the disclosure only provisions of SFAS No. 123, will have no effect on the company’s financial position, results of operations or cash flows. The provisions of this statement were adopted for the year ended December 31, 2002.

In November 2002, Financial Accounting Standards Board issued FIN 45 – *Guarantor’s Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others*. This Interpretation elaborates on the disclosures to be made by a guarantor in its interim and annual financial statements about its obligations under certain guarantees that it has issued. It also clarifies that a guarantor is required to recognize, at the inception of a guarantee, a liability for the fair value of the obligation undertaken by issuing the guarantee. Adoption of this statement is not expected to have a significant effect on the company’s financial position, results of operations or cash flows.

In June 2002, the Financial Accounting Standards Board issued SFAS No. 146 – *Accounting for Costs Associated with Exit or Disposal Activities*, which requires a liability for a cost associated with an exit or disposal activity to be recognized and measured at its fair value in the period in which the liability is incurred. This statement will be adopted January 1, 2003, and is not expected to have a significant effect on the company’s financial position, results of operations or cash flows.

In April 2002, the Financial Accounting Standards Board issued SFAS No. 145 – *Rescission of FASB Statements No. 4, 44 and 64, Amendment of FASB Statement No. 13, and Technical Corrections*. This statement clarifies guidance related to the reporting of gains and losses from extinguishment of debt and resolves inconsistencies related to the required accounting treatment of certain lease modifications. The provisions of this statement relating to extinguishment of debt become effective for financial statements issued for fiscal years beginning after May 15, 2002. The provisions of this statement relating to lease modification are effective for transactions occurring after May 15, 2002. Adoption of this standard did not have a material effect on the company’s financial position, results of operations or cash flows.

In October 2001, the Financial Accounting Standards Board issued SFAS No. 144 – *Accounting for the Impairment or Disposal of Long-Lived Assets*, which replaces SFAS No. 121 – *Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of*. SFAS No. 144 resolves implementation issues previously experienced under SFAS No. 121 and broadens the reporting of discontinued operations. This statement became effective for financial statements issued for fiscal years beginning after December 15, 2001. Adoption of this standard did not have a material effect on the company’s financial position, results of operations or cash flows.

In August 2001, the Financial Accounting Standards Board issued SFAS No. 143 – *Accounting for Asset Retirement Obligations*. SFAS No. 143 addresses financial accounting and reporting for obligations associated with the retirement of tangible long-lived assets and the associated asset retirement costs. This statement becomes effective for financial statements issued for fiscal years beginning after June 15, 2002. Management is currently evaluating the effect that adoption of this standard will have on the company’s results of operations and financial position.

In June 2001, the Financial Accounting Standards Board issued SFAS No. 141 – *Business Combinations*, and SFAS No. 142 – *Goodwill and Other Intangible Assets*. SFAS No. 141 requires the purchase method of accounting for business combinations initiated after June 30, 2001 and eliminates the pooling-of-interests method. Adoption of SFAS No. 141 did not have a significant effect on the company’s financial position, results of operations, or cash flows. SFAS No. 142 changes the accounting for goodwill from an amortization method to an impairment-only approach. Upon adoption of this statement, amortization of goodwill, including goodwill recorded in past business combinations, ceased and an initial impairment assessment of goodwill was performed. Annual impairment tests are required thereafter. The company adopted SFAS No. 142 on January 1, 2002 and recorded an initial goodwill impairment charge of \$432 million, which is reported under the income statement caption “Cumulative effect of accounting change”.

NORTHROP GRUMMAN CORPORATION**DISPOSITIONS AND DISCONTINUED OPERATIONS**

In October 2002, Northrop Grumman completed the sale of two Electronic Systems sector businesses, Electron Devices and Ruggedized Displays for \$135 million. During the third quarter of 2002, the company concluded that the Component Technologies businesses did not fit with the company's long-term plan and decided to sell the businesses. The company concluded the sale of the Component Technologies VEAM business units in the first quarter of 2003 and intends to conclude the sale of the remaining businesses by September 30, 2003. Therefore, the results of operations of these businesses are reported as discontinued operations, net of applicable income taxes, for all periods presented in accordance with SFAS No. 144 – *Accounting for the Impairment or Disposal of Long-Lived Assets*. The company completed its agreement to sell TRW's automotive business (Auto) to The Blackstone Group on February 28, 2003. The company received approximately \$4.7 billion, comprised of \$3.9 billion in cash and debt retained by Auto, a \$600 million payment-in-kind note and a 19.6 percent investment in the new enterprise. Cash proceeds from the sale will be used primarily to reduce debt. The company has retained certain liabilities associated with the Auto business as well as the Aeronautical Systems business that TRW divested in 2002. The settlement of these liabilities is not expected to have a material effect on the company's financial position, results of operations, or cash flows.

Effective July 24, 2000, the company completed the sale of its commercial aerostructures (Aerostructures) business to The Carlyle Group. Aerostructures was principally a major producer of commercial aircraft subassemblies, the majority of which were sold to The Boeing Company. The sale price was composed of \$668 million in cash and a promissory note for \$175 million, which was paid in full in 2001. A \$56 million after-tax loss on the sale, which includes the settlement and curtailment of various pension and other post-retirement benefit plans, the write-off of goodwill, and final assessment of the value of the promissory note, was recorded in 2000. The results of operations from Aerostructures, prior to its disposal, are reported as discontinued operations.

The company's Consolidated Statements of Income and related footnote disclosures have been restated to reflect these businesses as discontinued operations for the periods presented. The Consolidated Statements of Cash Flows for 2002 and 2001 have been restated, however the Consolidated Statements of Cash Flows for 2000 has not been restated.

Operating results of the discontinued businesses are as follows:

<i>\$ in millions</i>	2002	2001	2000
Sales	\$ 631	\$ 546	\$ 669
(Loss) income from discontinued operations	\$ (180)	\$ (28)	\$ 61
Income tax expense	(1)	(4)	(22)
(Loss) income from discontinued operations, net of tax	\$ (181)	\$ (32)	\$ 39
Loss on disposal of discontinued operations	\$ (9)		\$ (16)
Income tax expense	(11)		(40)
Loss on disposal of discontinued operations, net of tax	\$ (20)		\$ (56)

Tax rates vary between discontinued operations and the company's effective tax rate due to the non-deductibility of goodwill for tax purposes.

NORTHROP GRUMMAN CORPORATION

The major classes of assets and liabilities for these discontinued businesses were as follows:

<i>(\$ in millions)</i>	2002	2001
Accounts receivable	\$ 1,429	\$ 103
Inventoried costs	678	85
Prepaid expenses and other current assets	54	3
Net property, plant and equipment	2,799	183
Goodwill, net of accumulated amortization	4,117	765
Deferred income taxes	245	
Other purchased intangible assets, net of accumulated amortization	102	67
Miscellaneous other assets	197	1
Assets of businesses held for sale	\$ 9,621	\$ 1,207
Notes payable to banks	\$ 338	\$ 8
Trade accounts payable	1,441	38
Accrued employees' compensation	246	20
Income taxes payable	82	
Deferred income taxes	7	
Other current liabilities	547	54
Long-term debt	229	1
Accrued retiree benefits	1,386	4
Minority interest	81	
Other long-term liabilities	236	5
Liabilities of businesses held for sale	\$ 4,593	\$ 130

NORTHROP GRUMMAN CORPORATION**ACQUISITIONS**

In December 2002, the company purchased 100 percent of the common stock of TRW Inc. (TRW). The company issued 69.4 million shares of its common stock at an exchange ratio of .5357 for each TRW share, with cash paid in lieu of any fractional share of the company's stock which otherwise would be issued to the TRW shareholders. These shares were valued at \$107.31 per share for purchase accounting purposes. In accordance with generally accepted accounting principles, this value was determined based on the average closing stock price of the company's common stock from October 15, 2002, through October 21, 2002. TRW's defense business units will be operated as two separate sectors, Mission Systems and Space Technology. In connection with the acquisition of TRW, the company entered into a formal stipulation and consent decree (Final Judgment) with the United States Department of Justice that was filed in the U.S. District Court for the District of Columbia on December 11, 2002. Key provisions of the consent decree are intended to assure that the merger will not impede fair and open competition related to certain electronic satellite payloads. The consent decree does not require the divestiture of any businesses and will permit the company to operate its businesses and those of TRW as planned.

The major classes of assets and liabilities for TRW, including auto as business held for sale were as follows:

<i>(\$ in millions)</i>	2002
Cash and cash equivalents	\$ 278
Accounts receivable	483
Prepaid expenses and other current assets	91
Net property, plant and equipment	668
Deferred income taxes	489
Goodwill	7,410
Other purchased intangible assets	1,032
Miscellaneous other assets	540
Assets of business held for sale	9,215
Total assets	\$ 20,206
Trade accounts payable	\$ 310
Accrued employee's compensation	291
Current portion of long-term debt	101
Income taxes payable	63
Other current liabilities	497
Long-term debt	4,515
Accrued retiree benefits	1,848
Deferred income taxes	101
Other long-term liabilities	263
Liabilities of businesses held for sale	4,490
Shareholders' equity	7,727
Total liabilities and shareholders' equity	\$ 20,206

The acquisition of TRW, which is valued at approximately \$12.5 billion, including the assumption of TRW's debt of \$4.8 billion, is accounted for using the purchase method of accounting. Under the purchase method of accounting, the purchase price is allocated to the underlying tangible and intangible assets acquired and liabilities assumed based on their respective fair market values, with the excess recorded as goodwill. The company is in the early stages of determining the fair market value of assets acquired and liabilities assumed. These financial statements reflect preliminary estimates of the fair market value for only purchased intangibles, retiree benefits assets and liabilities and debt as well as preliminary estimates of adjustments necessary to conform TRW to the company's accounting policies. Auto is included in the total TRW valuation and is valued and recorded at its sale price which represents its fair market value. The final determination of the fair market value of assets acquired and liabilities assumed and final allocation of the purchase price may differ significantly from the amounts included in these financial statements. Adjustments to the purchase price allocations are expected to be finalized by the fourth quarter of 2003, and will be reflected in future filings. There can be no assurance that such adjustments will not be material.

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In 2001, the company purchased Litton Industries, Inc. (Litton), Electronics and Information Systems Group of Aerojet-General Corporation (EIS) and 80.7 percent of Newport News. On January 18, 2002, the company completed the acquisition of the remaining shares of Newport News and now owns 100 percent of Newport News. Newport News is the nation's sole designer, builder and refueler of nuclear powered aircraft carriers and one of only two domestic companies capable of designing and building nuclear-powered submarines. To complete the acquisition, the company issued an additional 3.2 million shares of its common stock and paid cash for the balance of the Newport News shares. In total, the company issued 16.6 million shares of its common stock in relation to the acquisition of Newport News. These shares were valued at \$95.22 per share for purchase accounting purposes. In accordance with generally accepted accounting principles, this value was determined based on the average closing stock price of the company's common stock from December 3, 2001, through December 7, 2001. Following the completion of the acquisition, the company eliminated the 19.3 percent minority interest from its financial statements.

The Litton, Newport News and EIS acquisitions were accounted for using the purchase method of accounting. As of December 31, 2002, the company has completed the fair market value and accounting conformance evaluation process for these acquisitions and all related adjustments have been reflected in these financial statements. The Litton business units operating results are included from the acquisition date in the company's segment data as follows: Litton's advanced electronics business is included in Electronic Systems; Litton's information systems business is included in Information Technology; Litton's ship business is included in Ships. Litton's electronic components and materials business comprised Component Technologies, which is classified as discontinued operations. EIS was integrated into Electronic Systems and Newport News is included in the Ships segment.

In 2001, the company accrued \$119 million in restructuring costs related to the acquisition of Litton. These costs included \$29 million to exit a business, \$31 million to close down redundant facilities and \$59 million to terminate and relocate employees. Of the total amount accrued, \$5 million was expensed directly to the income statement and \$114 million was accounted for as purchase accounting adjustments to the opening balance sheet of Litton. For the period from April 2, 2001 to December 31, 2001 the company utilized \$25 million of the balance sheet accrual. In 2002, the company accrued an additional \$13 million of costs to close down redundant facilities in relation to this acquisition. During 2002, the company utilized \$57 million of the balance sheet accrual. In addition, \$1 million was reversed to the income statement as it is no longer required. At December 31, 2002, \$49 million of accrued restructure costs remained, including \$25 million in other current liabilities, \$20 million in other long-term liabilities and \$4 million in liabilities of businesses held for sale.

The unaudited pro forma financial information contained herein for 2002 reflects the results of the company for the year ended December 31, 2002, combined with the pro forma results of TRW as if it had been acquired on January 1, 2002. The 2001 pro forma information reflects the results of the company for the year ended December 31, 2001, combined with the pro forma results of Litton, Newport News, and TRW as if they were acquired on January 1, 2001. Each year has been adjusted for TRW's sale of its Aeronautical Systems business to Goodrich Corporation and the company's divestiture of Auto. These combined results are not necessarily indicative of future operating results of the company. Pro forma amounts are presented below:

<i>Years ended December 31, \$ in millions, except per share (unaudited)</i>	2002	2001
Net sales	\$ 22,652	\$ 21,439
Income from continuing operations	808	577
Net income	175	545
Basic earnings per share	.81	3.01
Diluted earnings per share	.80	3.00

In 2000, the company acquired Navia Aviation AS, Comptek Research, Inc., Federal Data Corporation, and Sterling Software, Inc., (known as Sterling's Federal Systems Group) for a total of \$643 million in cash and stock, net of cash acquired. The purchase method of accounting was used to record all four acquisitions. Navia was integrated into Electronic Systems. The Comptek units were integrated within the Integrated Systems, Electronic Systems and Information Technology sectors. Federal Data and Sterling were both integrated into Information Technology.

SEGMENT INFORMATION

The company is aligned into seven business sectors: Electronic Systems, Newport News, Ship Systems, Information Technology, Integrated Systems, Mission Systems and Space Technology. For financial reporting purposes each business sector is a reportable segment with the exception of Newport News and Ship Systems which are aggregated and reported as the Ships segment in accordance with the provisions of SFAS No. 131 – *Disclosures about Segments of an Enterprise and Related Information*. Segment reporting for Mission Systems and Space Technology, acquired in the TRW acquisition concluded on December 11, 2002, will commence in the first quarter of 2003 as 2002 results for these new segments were not material to the company. The preliminary valuations of TRW assets and liabilities are included in the Consolidated Statement of Financial Position as of December 31, 2002.

Electronic Systems is a leading designer, developer and manufacturer of a wide variety of advanced defense electronics and systems. Electronic Systems provides airborne radar systems, secondary surveillance systems, inertial navigation systems and sensors, electronic warfare systems, precision weapons, air traffic control systems, air defense systems communications systems, space systems, marine systems, oceanic and naval systems, integrated avionics systems and automation and information systems. Headquartered in Baltimore, Maryland the sector includes the Aerospace Electronic Systems, C⁴ISR&N, Defensive Electronic Systems, Navigation Systems, and Space Systems divisions. Operations not included in these divisions are reported as “Other.” Key products include fire control radars for the F-16 fighter aircraft, the F-22 air dominance fighter, the F-35 joint strike fighter, and the Longbow Apache helicopter; the AWACS airborne early warning radar; Joint STARS air-to-ground surveillance radar sensor; Longbow Hellfire missile; tactical military radars, countrywide air defense systems, airborne electronic countermeasures systems, sophisticated undersea warfare systems and naval propulsion and power generation systems. Electronic Systems has 51 major locations worldwide, 19 international offices and approximately 22,000 employees.

Newport News’ primary business is the design, construction, repair, maintenance, overhaul, life-cycle support and refueling of nuclear-powered aircraft carriers and the design, life-cycle support and construction of nuclear-powered submarines for the U.S. Navy. Newport News is the nation’s sole designer, builder and refueler of nuclear-powered aircraft carriers and only one of two companies capable of designing and building nuclear-powered submarines. Major programs are the Nimitz-class nuclear powered aircraft carriers and the Virginia-class submarine program. The sector also provides after-market services for a wide array of naval and commercial vessels. Headquartered in Newport News, Virginia, the sector has approximately 18,000 employees.

Ship Systems is one of the nation’s leading full service systems providers for the design, engineering, construction, and life cycle support of major surface ships for the U.S. Navy, U.S. Coast Guard and international navies, and for commercial vessels of all types. Major programs for the U.S. Navy include the WASP LHD 1 Class and San Antonio LPD 17 Class amphibious assault ships, the Arleigh Burke DDG 51 and next generation DD(X) destroyers. The company is also a partner in the Coast Guard’s Deepwater modernization program and produces double-hulled crude oil tankers. Headquartered in Pascagoula, Mississippi, with primary operations in Pascagoula, Mississippi; New Orleans, Louisiana; Gulfport, Mississippi; and Tallulah, Louisiana, as well as in fleet support offices in the U.S. and Japan, Ship Systems has more than 16,000 employees.

The Information Technology segment consists of four lines of business: Government Information Technology, Enterprise Information Technology, Technology Services, and Commercial Information Technology. Government Information Technology covers a wide range of large-scale systems integration, solutions and services programs. This work is performed for government customers at the DOD, federal, state and local levels, and covers command, control, communications, computers, intelligence, surveillance and reconnaissance (C⁴ISR); training and simulation; science and technology; and information systems markets. Enterprise Information Technology provides enterprise-wide infrastructure and Internet solutions and services to the defense and civil marketplace, including the delivery and integration of commercially available computers, networks, hardware, software and peripherals. Technology Services include base and range support, training and simulation, information systems, and state and local information technology services. Commercial Information Technology provides complete IT outsourcing services directed at the commercial market. Headquartered in Herndon, Virginia, the sector employs more than 23,000 professionals located in 500 sites worldwide.

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Integrated Systems is a leader in the design, development and production of airborne early warning, electronic warfare and surveillance and battlefield management systems. Integrated Systems includes the Air Combat, Airborne Early Warnings & Electronic Warfare Systems, and Airborne Ground Surveillance & Battle Management Systems divisions. Integrated Systems is the prime contractor for the Joint STARS advanced airborne targeting and battle management system, Global Hawk and the B-2 Spirit stealth bomber. The sector has principal roles in the F/A-18 Hornet strike fighter and F-35 joint strike fighter programs. Integrated Systems is upgrading the EA-6B Prowler electronic countermeasures aircraft and produces the E-2C Hawkeye early warning aircraft. Headquartered in El Segundo, California, the sector has approximately 12,000 employees.

Mission Systems, headquartered in Reston, Virginia, is a leading global system integrator of complex, mission-enabling systems for government, military and business clients. The organization's technology leadership spans four business areas: command, control and intelligence systems, federal and civil information systems, missile systems and technical services. Products and services are focused on the fields of command and control; strategic missiles; missile and air defense; airborne reconnaissance; unmanned aerial vehicles; intelligence management and processing; electro-magnetic and infrared analysis and decision support systems. Mission Systems has 15,000 employees in more than 300 locations around the world.

Space Technology sector develops a broad range of systems at the leading edge of space, defense and electronics technology. The sector creates products for U.S. government and commercial customers that contribute significantly to the nation's security and leadership in science and technology. Its business areas focus on the design and manufacture of spacecraft systems and subsystems; electronic systems, including communication systems for space and defense; commercial telecommunications products; digital broadband space payloads; space science instruments; advanced avionics systems; high energy laser systems; and spacecraft products, including solar arrays and reflectors. Headquartered in Redondo Beach, California, Space Technology has approximately 9,000 employees in more than 25 locations around the world.

In the following table of segment and major customer data, revenue from the United States Government includes revenue from contracts on which Northrop Grumman is the prime contractor as well as those on which the company is a subcontractor and the ultimate customer is the U.S. Government. The company's discontinued operations are excluded from all of the data elements in this table, except for assets by segment. Northrop Grumman's income statements do not include TRW's post-acquisition results because they were not material. Only the TRW assets at December 31, 2002, are included in the following table.

The company, effective December 31, 2002, revised the way it measures the profitability of its operating segments to better reflect its operating results. Pension and other retiree benefit expenses are now included in the sectors' cost of sales to the extent that these costs are currently recognized under government Cost Accounting Standards (CAS). In order to reconcile from segment operating margin to total company operating margin, these amounts are reported under the caption "Reversal of CAS pension expense included above." Total GAAP pension income or expense continues to be reported separately as a reconciling item under the caption "Pension income or expense." The reconciling item captioned "Unallocated expenses" includes unallocated corporate expenses, state tax provisions, and other retiree benefit expenses. Segment results for all periods presented have been conformed to the new method of measuring profitability.

Foreign sales amounted to approximately \$1.3 billion, \$1.3 billion and \$600 million for the years ended December 31, 2002, 2001 and 2000, respectively. All of the company's segments engage in international business, for which the company maintains a large number of sales representatives and consultants who are not employees of the company. Foreign sales by their very nature are subject to greater variability in risk than the company's domestic sales, particularly to the U.S. government. International sales and services subject the company to numerous stringent U.S. and foreign laws and regulations, including, without limitation, regulations relating to import-export control, repatriation of earnings, exchange controls, the Foreign Corrupt Practices Act and the anti-boycott provisions of the U.S. Export Administration Act. Failure by the company or its sales representatives or consultants to comply with these laws and regulations could result in administrative, civil or criminal liabilities and could in the extreme case result in suspension of the company's export privileges, which could have a material adverse consequence.

NORTHROP GRUMMAN CORPORATION

RESULTS OF OPERATIONS BY SEGMENT AND MAJOR CUSTOMER

<i>Years ended December 31, \$ in millions</i>	2002	2001	2000
Net Sales			
Electronic Systems			
United States Government	\$ 2,966	\$ 2,830	\$ 2,102
Other customers	2,120	1,591	692
Intersegment sales	253	166	121
	5,339	4,587	2,915
Ships			
United States Government	4,445	1,487	
Other customers	251	392	
Intersegment sales	16	1	
	4,712	1,880	
Information Technology			
United States Government	3,700	3,231	1,457
Other customers	467	491	228
Intersegment sales	70	61	32
	4,237	3,783	1,717
Integrated Systems			
United States Government	3,096	2,869	3,103
Other customers	161	121	36
Intersegment sales	16	11	11
	3,273	3,001	3,150
Intersegment eliminations	(355)	(239)	(164)
Total net sales	\$17,206	\$ 13,012	\$ 7,618
Operating Margin			
Electronic Systems	\$ 435	\$ 350	\$ 157
Ships	306	19	
Information Technology	249	173	103
Integrated Systems	331	265	306
	1,321	807	566
Adjustments to reconcile to total operating margin:			
Unallocated expenses	(105)	(134)	(42)
Pension income	90	335	538
Reversal of CAS pension expense included above	100	43	42
Reversal of royalty income included above	(15)	(18)	(6)
Total operating margin	\$ 1,391	\$ 1,033	\$ 1,098

NORTHROP GRUMMAN CORPORATION

Years ended December 31, \$ in millions

	2002	2001	2000
Assets			
Electronic Systems	\$ 5,446	\$ 5,764	\$ 4,069
Ships	6,532	6,040	
Information Technology	2,178	2,099	1,247
Integrated Systems	2,173	2,088	2,238
Mission Systems	4,759		
Space Technology	4,829		
Segment assets	25,917	15,991	7,554
General corporate	6,728	3,620	2,068
Assets of businesses held for sale	9,621	1,207	
Total assets	\$ 42,266	\$ 20,818	\$ 9,622
Capital Expenditures			
Electronic Systems	\$ 263	\$ 195	\$ 118
Ships	76	44	
Information Technology	45	46	22
Integrated Systems	134	79	124
General corporate	3	3	1
Total expenditures	\$ 521	\$ 367	\$ 265
Depreciation and Amortization			
Electronic Systems	\$ 226	\$ 301	\$ 236
Ships	147	82	
Information Technology	44	90	32
Integrated Systems	78	102	112
General corporate	1	1	1
Total depreciation and amortization	\$ 496	\$ 576	\$ 381

NORTHROP GRUMMAN CORPORATION**EARNINGS PER SHARE**

Basic earnings per share from continuing operations before cumulative effect of accounting change are calculated by dividing income available to common shareholders from continuing operations before cumulative effect of accounting change by the weighted average number of shares of common stock outstanding during each period, after giving recognition to stock splits and stock dividends. Income available to common shareholders from continuing operations before cumulative effect of accounting change is calculated by reducing income from continuing operations before cumulative effect of accounting change by the amount of dividends accrued on mandatorily redeemable preferred stock. Diluted earnings per share from continuing operations before cumulative effect of accounting change reflect the dilutive effect of stock options and other stock awards granted to employees under stock-based compensation plans and the dilutive effect of the equity security units as applicable. Shares issuable pursuant to mandatorily redeemable preferred stock have not been included in the diluted earnings per share calculation because their effect is currently anti-dilutive.

Basic and diluted earnings per share from continuing operations before cumulative effect of accounting change are calculated as follows:

<i>(in millions, except per share)</i>	2002	2001	2000
Basic Earnings per Share			
Income from continuing operations before cumulative effect of accounting change	\$ 697	\$ 459	\$ 625
Less preferred dividends	25	18	
Income available to common shareholders from continuing operations before cumulative effect of accounting change	\$ 672	\$ 441	\$ 625
Weighted-average common shares outstanding	115.53	84.46	70.58
Basic earnings per share from continuing operations before cumulative effect of accounting change	\$ 5.82	\$ 5.22	\$ 8.86
Diluted Earnings per Share			
Income from continuing operations before cumulative effect of accounting change	\$ 697	\$ 459	\$ 625
Less preferred dividends	25	18	
Income available to common shareholders from continuing operations before cumulative effect of accounting change	\$ 672	\$ 441	\$ 625
Weighted-average common shares outstanding	115.53	84.46	70.58
Dilutive effect of stock options, awards and equity security units	1.90	.80	.30
Weighted-average diluted shares outstanding	117.43	85.26	70.88
Diluted earnings per share from continuing operations before cumulative effect of accounting change	\$ 5.72	\$ 5.17	\$ 8.82

NORTHROP GRUMMAN CORPORATION

ACCOUNTS RECEIVABLE

Unbilled amounts represent sales for which billings have not been presented to customers at year end, including differences between actual and estimated overhead and margin rates. These amounts are usually billed and collected within one year. Progress payments are, however, received on a number of fixed-price contracts accounted for using the cost-to-cost type percentage-of-completion method.

Accounts receivable at December 31, 2002, are expected to be collected in 2003 except for approximately \$74 million due in 2004 and \$105 million due in 2005 and later.

Allowances for doubtful amounts mainly represent estimates of overhead type costs which may not be successfully negotiated and collected. Increases in 2002 reflect the acquisition of TRW.

Accounts receivable were composed of the following:

<i>\$ in millions</i>	2002	2001
Due from U.S. Government, long-term contracts		
Current accounts		
Billed	\$ 963	\$ 677
Unbilled	15,710	12,987
Progress payments received	(14,511)	(12,112)
	2,162	1,552
Due from other customers, long-term contracts		
Current accounts		
Billed	210	189
Unbilled	126	209
	336	398
Total due, long-term contracts	2,498	1,950
Trade and other accounts receivable		
Due from U.S. Government	426	383
Due from other customers	255	448
Total due, trade and other	681	831
	3,179	2,781
Allowances for doubtful amounts	(290)	(138)
	\$ 2,889	\$ 2,643

NORTHROP GRUMMAN CORPORATION**INVENTORIED COSTS**

Inventoried costs were composed of the following:

<i>\$ in millions</i>	2002	2001
Production costs of contracts in process	\$ 1,553	\$ 1,554
Administrative and general expenses	204	221
	1,757	1,775
Progress payments received	(988)	(881)
	769	894
Product inventory	322	204
	\$ 1,091	\$ 1,098

Inventoried costs relate to long-term contracts in process and include expenditures for raw materials and work in process beyond what is required for recorded orders. These expenditures are incurred to help maintain stable and efficient production schedules. The ratio of inventoried administrative and general expenses to total inventoried costs is estimated to be the same as the ratio of total administrative and general expenses incurred to total contract costs incurred. According to the provisions of U. S. Government contracts, the customer asserts title to, or a security interest in, substantially all inventories related to such contracts. Product inventory primarily consists of raw materials and is stated at the lower of cost or market, generally using the average cost method.

GOODWILL AND OTHER PURCHASED INTANGIBLE ASSETS

Effective January 1, 2002, the company adopted SFAS No. 142 – *Goodwill and Other Intangible Assets*, which changes the accounting for goodwill from an amortization method to an impairment-only approach. In accordance with the statement, amortization of goodwill, including goodwill recorded in past business combinations, ceased December 31, 2001. The statement also required an initial impairment assessment of goodwill and annual impairment tests thereafter. During the second quarter of 2002, the company completed the first step of the required initial test for potential impairment of goodwill recorded at January 1, 2002. The company used a discounted cash flow approach, corroborated by comparative market multiples, where appropriate, to determine the fair value of reporting units. The results indicated potential impairment only in the reporting units of the Component Technologies sector due to unfavorable market conditions. During the third quarter of 2002, the company completed the measurement of the Component Technologies goodwill impairment as of January 1, 2002, and recorded a noncash charge of \$432 million, which, in accordance with GAAP, is reported in the 2002 first quarter under the caption “Cumulative effect of accounting change.”

NORTHROP GRUMMAN CORPORATION

Goodwill was amortized on a straight-line basis over a weighted average period of 35 years in 2001, with the exception of approximately \$1.9 billion of goodwill resulting from the fourth quarter 2001 acquisitions of Newport News and EIS, which was not amortized pursuant to the transitional guidance of SFAS No. 142. The changes in the carrying amount of goodwill for the twelve months ended December 31, 2002, are summarized below. Amounts allocated to Mission Systems and Space Technology represent preliminary estimates.

<i>\$ in millions</i>	Balance as of 1/01/02 (including discontinued operations)	Goodwill acquired	Cumulative effect of accounting change	Goodwill impairment loss included in loss from discontinued operations	Goodwill transferred to assets of businesses held for sale	Fair value adjustments to net assets acquired in prior year	Balance as of 12/31/02
Electronic Systems	\$ 2,590	\$	\$	\$	\$ (42)	\$ 9	\$ 2,557
Ships	3,308	322				5	3,635
Information Technology	1,109					8	1,117
Integrated Systems	938						938
Component Technologies	723		(432)	(186)	(112)	7	
Mission Systems		3,705					3,705
Space Technology		3,705					3,705
Total	\$ 8,668	\$ 7,732	\$ (432)	\$ (186)	\$ (154)	\$ 29	\$ 15,657

In connection with the Newport News acquisition the company assigned an estimated value of \$137 million as of December 31, 2001 of the purchase price to purchased intangible assets in the Ships segment, which was initially amortized on a straight-line basis over a weighted average period of 11 years. During the second quarter of 2002, the company completed its evaluation of the fair value of these purchased intangible assets, which resulted in a value of \$768 million and a weighted average useful life of 47 years. In connection with the acquisition of TRW, the company has recorded a preliminary estimate of \$1,032 million of the purchase price to purchased intangible assets using a preliminary weighted average life of 10 years. See the "Acquisitions" footnote contained herein for additional information. The table below summarizes the company's aggregate purchased intangible assets as of December 31, 2002.

<i>\$ in millions</i>	Gross Carrying Amount	Accumulated Amortization
Contract and program intangibles	\$ 3,253	\$ (714)
Other purchased intangibles	60	(46)
Total	\$ 3,313	\$ (760)

All of the company's purchased intangible assets are subject to amortization and are being amortized on a straight-line basis over an aggregate weighted average period of 20 years. Aggregate amortization expense for the twelve months ended December 31, 2002, was \$178 million, including \$14 million of amortization expense reported in discontinued operations. The table below shows expected amortization for purchased intangibles as of December 31, 2002, for the next five years:

<i>\$ in millions</i>	
Year ended December 31	
2003	\$ 265
2004	263
2005	254
2006	192
2007	179

NORTHROP GRUMMAN CORPORATION

The table below reconciles and compares reported amounts to adjusted amounts excluding goodwill amortization.

<i>\$ in millions</i>	Year ended December 31,		
	2002	2001	2000
Operating Margin			
Electronic Systems	\$ 435	\$ 350	\$ 157
Add back goodwill amortization		80	63
Electronic Systems – comparable	435	430	220
Ships			
Ships	306	19	
Add back goodwill amortization		31	
Ships – comparable	306	50	
Information Technology			
Information Technology	249	173	103
Add back goodwill amortization		58	20
Information Technology – comparable	249	231	123
Integrated Systems			
Integrated Systems	331	265	306
Add back goodwill amortization		32	31
Integrated Systems – comparable	331	297	337
Segment Operating Margin			
Segment Operating Margin	1,321	807	566
Add back goodwill amortization		201	114
Segment Operating Margin – comparable	\$ 1,321	\$ 1,008	\$ 680
Total Operating Margin			
Total Operating Margin	\$ 1,391	\$ 1,033	\$ 1,098
Add back goodwill amortization		201	114
Total Operating Margin – comparable	\$ 1,391	\$ 1,234	\$ 1,212
Net Income			
As reported	\$ 64	\$ 427	\$ 608
Add back goodwill amortization, net of tax		183	93
Add back goodwill amortization in discontinued operations, net of tax		35	
Comparable	\$ 64	\$ 645	\$ 701
Basic Earnings Per Share			
As reported	\$.35	\$ 4.84	\$ 8.61
Add back goodwill amortization, net of tax		2.17	1.32
Add back goodwill amortization in discontinued operations, net of tax		.41	
Comparable	\$.35	\$ 7.42	\$ 9.93
Diluted Earnings Per Share			
As reported	\$.34	\$ 4.80	\$ 8.58
Add back goodwill amortization, net of tax		2.15	1.31
Add back goodwill amortization in discontinued operations, net of tax		.40	
Comparable	\$.34	\$ 7.35	\$ 9.89

NORTHROP GRUMMAN CORPORATION

FAIR VALUE OF FINANCIAL INSTRUMENTS

Carrying amounts and the related estimated fair values of the company's financial instruments at December 31 of each year are as follows:

<i>\$ in millions</i>	2002		2001	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Cash and cash equivalents	\$1,412	\$ 1,412	\$ 464	\$ 464
Short-term notes payable	22	22	30	30
Long-term debt	9,601	10,179	5,458	5,819
Forward share sale agreements				
Liability portion	(228)	(237)		
Hedge portion	205	205		

For cash and cash equivalents and amounts borrowed under the company's short-term credit lines, the carrying amounts approximate fair value, due to the short-term nature of these items. The fair value of the long-term debt at the respective year-ends was calculated based on interest rates available for debt with terms and due dates similar to the company's existing debt arrangements.

The company makes limited use of derivative financial instruments and does not hold or issue them for trading purposes. To mitigate the variable rate characteristic of its term loans, the company has from time to time entered into interest rate swap agreements. No interest rate swap agreements were in effect as of the years ended December 31, 2002, or December 31, 2001. If any interest rate swap agreements had existed, unrealized gains (losses) would be calculated based upon the amounts at which they could have been settled at then current interest rates.

The company enters into foreign currency forward contracts to manage foreign currency exchange risk related to receipts from customers and payments to suppliers denominated in foreign currencies. Gains and losses from such transactions are included as contract costs. At December 31, 2002, the amount of foreign currency forward contracts outstanding was not material.

In connection with the TRW acquisition, the company has acquired investments in RF Micro Devices, Inc. (RFMD) and Applera Corporation – Celera Genomics Group (Celera), two publicly traded companies. The company has also acquired certain hedges that are designed to protect the forecasted cash flows resulting from the future sale of shares in these investments.

In 2000, TRW monetized a portion of its holdings in RFMD through the execution of three forward share sale agreements. The company is now obligated under these agreements to deliver up to 4 million shares of RFMD common stock, in the aggregate, upon maturity of the contracts. Also in 2000, TRW similarly monetized its holdings of 229,354 shares in Celera through an agreement maturing in December 2003. The company is obligated under this agreement to deliver up to 229,354 shares of Celera common stock, in the aggregate, upon maturity of the contract. The actual number of shares to be delivered will be determined on the basis of a formula in the agreements. Through the setting of a floor and ceiling price, these agreements eliminate the company's exposure to downside market risk, while enabling the company to retain potential market appreciation up to the respective ceiling price. Certain terms of the agreements are summarized below:

	RFMD		Celera	
	February 2003	August 2003	February 2004	December 2003
Maturity dates				
Number of shares	1,333,334	1,333,334	1,333,332	229,354
Floor price per share	\$ 54	\$ 54	\$ 54	\$ 102
Ceiling price per share	79	86	93	176
Up-front proceeds as a percent of floor price	80%	78%	75%	80%

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The investments in RFMD and Celera and the related hedge portion of the forward share sale agreements are carried at fair market value. Changes in fair market value of the company's shares of RFMD and Celera, including the shares monetized, are recorded in the other comprehensive income (loss) component of shareholders' equity. Any gains or losses reported in other comprehensive income (loss) will be reclassified to net income at the maturity of these agreements.

The fair value of the RFMD shares at December 31, 2002, excluding the effect of the forward share sale agreements, was approximately \$30 million. The fair value of the Celera shares at December 31, 2002, excluding the effect of the forward share sale agreement, was approximately \$2 million.

INCOME TAXES

Income tax expense, both federal and foreign, consisted of the following:

<i>Years ended December 31, \$ in millions</i>	2002	2001	2000
Income taxes on continuing operations:			
Currently payable			
Federal income taxes	\$ 1,017	\$ 45	\$ 96
Foreign income taxes	16	10	5
	1,033	55	101
Change in deferred federal and foreign income taxes	(721)	213	249
Total income taxes on continuing operations	\$ 312	\$ 268	\$ 350

Income tax expense differs from the amount computed by multiplying the statutory federal income tax rate times the income from continuing operations before income taxes and 2002's cumulative effect of accounting change due to the following:

<i>Years ended December 31, \$ in millions</i>	2002	2001	2000
Income tax expense on continuing operations at statutory rate	\$ 353	\$ 245	\$ 341
Goodwill amortization		58	20
Extraterritorial income exclusion/foreign sales corporation	(10)	(15)	(7)
Other, net	(31)	(20)	(4)
	\$ 312	\$ 268	\$ 350

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and tax purposes. Such amounts are classified as current or deferred based upon the balance sheet classification of the related assets and liabilities. The company's principal temporary differences stem from the recognition of income on contracts and retiree benefit plan income/expense under different methods for tax purposes than for financial reporting.

NORTHROP GRUMMAN CORPORATION

The tax effects of significant temporary differences and carryforwards that gave rise to year-end deferred federal and state tax balances, as categorized in the Consolidated Statements of Financial Position, were as previously:

<i>Years ended December 31, \$ in millions</i>	2002	2001
Assets		
Retirement benefit plan expense	\$ 1,429	\$ 51
Administration and general expenses period costed for tax purposes	8	30
Provision for estimated expenses	542	466
Contract accounting differences	456	
Tax credits	36	104
Other	708	126
Total deferred tax assets	3,179	777
Liabilities		
Retirement benefit plan income	451	318
Contract accounting differences	14	729
Purchased intangibles	608	163
Depreciation and amortization	354	328
Goodwill amortization	367	171
Other	549	43
Total deferred tax liabilities	2,343	1,752
Net deferred tax assets (liabilities)	\$ 836	\$ (975)

At December 31, 2002 and 2001 the company had net current deferred tax assets of \$662 million and \$36 million, respectively, and non-current net deferred tax assets of \$174 million and \$2 million, respectively. At December 31, 2001, the company had net current deferred tax liabilities of \$344 million and non-current net deferred tax liabilities of \$669 million.

Consolidated year-end deferred tax balances include amounts acquired in the TRW transaction, net of deferred tax balances related to Auto which have been classified as assets/liabilities of businesses held for sale. Deferred U.S. income taxes were provided (net of foreign income tax credits), with respect to undistributed earnings from Northrop Grumman and Litton non-U.S. subsidiaries' pre-acquisition years, to the extent that it was anticipated that dividend payments from such earnings were expected to result in an additional liability. There has been no provision for U. S. income taxes for the remaining undistributed earnings of approximately \$78 million at December 31, 2002, because the company intends to reinvest these earnings indefinitely in operations outside the U. S. Should these earnings be distributed in the form of dividends or otherwise, the distributions would be subject to U. S. federal income tax at the statutory rate of 35 percent, less foreign tax credits applicable to the distributions, if any. In addition, such distributions would be subject to withholding taxes in the various jurisdictions.

The company has foreign income tax credit carryforward items of \$7 million at December 31, 2002, to offset future federal income tax liabilities. These credits will expire in 2003 and 2004. The company utilized \$27 million of carryforward credits attributable to research activities during 2002. The company also utilized \$53 million in alternative minimum tax credit carryforwards during 2002. The company also has at December 31, 2002, other credit forwards from TRW in the amount of \$29 million available for future tax offsets.

As of December 31, 2002, the company had approximately \$960 million of goodwill amortizable over periods of approximately 8 years which arose in connection with the acquisition of Westinghouse defense electronics operations in 1996 and are reported in the Electronics Systems sector.

NOTES PAYABLE TO BANKS AND LONG-TERM DEBT

The company has available short-term credit lines in the form of money market facilities with several banks. The amount and conditions for borrowing under these credit lines depend on the availability and terms prevailing in the marketplace. No fees or compensating balances are required for these credit facilities. In connection with the acquisition of TRW, the company assumed various notes and debentures amounting to approximately \$4.8 billion.

In March, 2003 the company commenced the first phase of its debt reduction plan by offering to purchase a range of debt securities, due 2004 to 2021, with interest rates ranging from 6.05 percent to 9.375 percent and an outstanding value of approximately \$2.85 billion. The offers were extended with a fixed spread over market of 35 to 95 basis points. The company will use a portion of the cash proceeds from the recent sale of Auto to finance the purchase of securities tendered pursuant to the offers. As of March 18, 2003 the company had repurchased 85.7 percent of the face value of the debt securities offered.

In February 2001, Northrop Systems issued \$1.5 billion of indebtedness pursuant to its senior debt indenture consisting of \$750 million of 7.125 percent notes due 2011 and \$750 million of 7.75 percent debentures due 2031. In connection with the closing of the Litton acquisition, the company entered into unsecured senior credit facilities with lenders which initially provided for borrowings of up to \$5 billion (the "Credit Facilities") and which replaced the company's previous credit agreement. The Credit Facilities consisted of a \$2.5 billion 364-day revolving credit facility and a \$2.5 billion five-year revolving credit facility. The 364-day revolving credit facility was terminated in December 2001. At December 31, 2001, \$2.5 billion was available under the five-year revolving credit facility. Borrowings under the Credit Facilities, together with the proceeds of the February 2001 issuance of notes and debentures, were used to finance the Litton acquisition and to pay related expenses, to retire and refinance a portion of the Litton debt, and to finance continuing operations. Borrowings under the Credit Facilities bear interest at various rates, including adjusted LIBOR, or an alternate base rate plus, in each case, an incremental margin based on the company's credit rating. The Credit Facilities also provide for a facility fee on the daily aggregate amount of commitments under the revolving facilities (whether or not utilized). The facility fee is also based on the company's credit rating level. The company's credit agreements contain various restrictive covenants relating to the payment of dividends, acquisition of the company's stock, minimum fixed charges, aggregate indebtedness for borrowed money, interest coverage, as well as customary covenants, representations and warranties, funding conditions and events of default. Under the most restrictive provision of the Credit Facilities, the estimated amount available for common stock dividend declaration, while maintaining financial agreement covenant compliance, was \$507 million at December 31, 2002.

In November 2001, the company issued \$690 million of equity security units. Each equity security unit, issued at \$100 per unit, initially consists of a contract to purchase shares of Northrop Grumman common stock on November 16, 2004, and a \$100 senior note due 2006. The senior notes due 2006 are reported as long-term debt. The senior notes initially bear interest at 5.25 percent per annum, and each equity security unit also pays a contract adjustment payment of 2.0 percent per annum, for a combined yield on the equity security unit of 7.25 percent per annum. Each purchase contract which is part of the equity security units will obligate the holder thereof to purchase on November 16, 2004, for \$100, the following number of shares of the company's common stock based on the average closing price of the company's common stock over the 20 day trading period ending on the third trading day immediately preceding November 16, 2004: (i) 0.9262 shares if the average closing price equals or exceeds \$107.97, (ii) a number of shares having a value equal to \$100 if the average closing price is less than \$107.97 but greater than \$88.50 and (iii) 1.1299 shares if the average closing price is less than or equal to \$88.50. Prior to November 16, 2004, holders of equity security units have the opportunity to participate in a remarketing of the senior note component.

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Long-term debt at December 31, consisted of the following:

<i>\$ in millions</i>	2002	2001
Notes due 2003 to 2028, rates from 3.00% to 9.375%	\$ 5,946	\$ 2,446
Equity security unit notes due 2006, 7.25%	690	690
Debentures due 2016 to 2036, rates from 6.75% to 7.75%	2,826	2,180
Other indebtedness due 2004 to 2024, rates from 7.0% to 8.5%	139	142
	9,601	5,458
Less current portion	203	420
	\$ 9,398	\$ 5,038

Indentures underlying long-term debt issued by the company or its subsidiaries contain various restrictions with respect to the issuer, including one or more restrictions relating to limitations on liens, sale and leaseback arrangements and funded debt of subsidiaries.

Long-term debt outstanding at December 31, 2002 matures as follows:

\$ in millions

Year Ended December 31	
2004	\$ 1,085
2005	207
2006	2,095
2007	82
Thereafter	5,435
Total principal payments	8,904
Premium on long-term debt, net of discount	494
Total long-term debt	\$ 9,398

The premium on long-term debt primarily represents non-cash fair market value adjustments resulting from the acquisitions of Litton and TRW.

MINORITY INTEREST

As of December 31, 2002, the minority interest balance is primarily comprised of preferred shares of a subsidiary totaling \$116 million. Upon the acquisition of TRW on December 11, 2002, TRW Automotive Inc. (TAI) became a subsidiary of Northrop Grumman Corporation. As of December 31, 2002, TAI has outstanding 100,000 shares of Series A Convertible Preferred Stock (TAI Series A) and 30,000 shares of Series B Preferred Stock (TAI Series B) (of which 14,000 shares are owned by Northrop Grumman) with a per share liquidation preference of \$1,000 plus accrued and unpaid dividends. The dividend rate of TAI Series A and B is 12 percent per year, payable quarterly, subject to increase if certain financial covenants are not maintained. TAI Series A and B shares are redeemable at the holders' option upon the sale of substantially all of the assets of TAI. The redemption, at the liquidation preference price, would be on May 29, 2003 or the holders may elect to defer such redemption until December 10, 2004. TAI Series B shares are redeemable at the holders option on each of the 6th through 19th anniversaries and at any time after the 20th anniversary of the original issuance date. TAI may redeem the Series B shares on the 5th, 10th, 15th, and 20th anniversary dates. Holders of TAI Series B stock also may require Northrop Grumman Space & Mission Systems Corp. (formerly TRW Inc.) to repurchase the shares at the second anniversary of issuance and Northrop Grumman Space & Mission Systems Corp. may redeem these shares on the third anniversary of issuance.

NORTHROP GRUMMAN CORPORATION

On February 28, 2003, the company sold all the assets of TAI to the Blackstone Group and TAI Series A and Series B became redeemable at the holders option. The company received notification that the holder of all TAI Series A shares and 2,000 TAI Series B shares has elected to have these shares redeemed on May 29, 2003. The company has also received notification that the holder of 14,000 TAI Series B shares intends to exercise its sale redemption election on December 10, 2004.

At December 31, 2001, the minority interest balance was principally comprised of the 19.3 percent minority share in Newport News which the company did not own. On January 18, 2002, the company completed the acquisition of the remaining shares of Newport News and now owns 100 percent of Newport News. Following the completion of the acquisition, the company eliminated the 19.3 percent minority interest from its financial statements.

MANDATORILY REDEEMABLE SERIES B CONVERTIBLE PREFERRED STOCK

The company issued 3.5 million shares of mandatorily redeemable Series B Convertible Preferred Stock in April 2001. Each share of Series B preferred stock has a liquidation value of \$100 per share. The liquidation value, plus accrued but unpaid dividends, is payable on April 4, 2021, the mandatory redemption date. The company has the option to redeem all but not less than all the shares of Series B preferred stock at any time after seven years from the date of issuance for a number of shares of the company's common stock equal to the liquidation value plus accrued and unpaid dividends divided by the current market price of common stock determined in relation to the date of redemption. Each share of preferred stock is convertible, at any time, at the option of the holder into the right to receive shares of the company's common stock. Initially, each share is convertible into .911 shares of common stock, subject to adjustment. Holders of preferred stock are entitled to cumulative annual cash dividends of \$7 per share, payable quarterly. In any liquidation of the company, each share of preferred stock will be entitled to a liquidation preference before any distribution may be made on the company's common stock or any series of capital stock that is junior to the Series B preferred stock. In the event of a change in control of the company, holders of Series B preferred stock also have specified exchange rights into common stock of the company or into specified securities or property of another entity participating in the change in control transaction.

RETIREMENT BENEFITS

The company sponsors several defined-benefit pension plans covering over 80 percent of its employees. Pension benefits for most employees are based on the employee's years of service and compensation during the last ten years before retirement. It is the policy of the company to fund at least the minimum amount required for all qualified plans, using actuarial cost methods and assumptions acceptable under U. S. Government regulations, by making payments into benefit trusts separate from the company. Starting in July, 2003 the pension benefit for most employees, principally those participating in Northrop and Litton heritage plans, will be based upon new criteria, whereby employees earn age and service points over the employment period. Subsequent to the 2003 initial phase in, other exempt and non-exempt plans will be conformed to the new model. No settlement or curtailments will arise as a result of these changes. Union plans will not be affected by these plan modifications. Nine of the company's 21 qualified plans, which cover approximately 60 percent of all employees, were in a legally defined full-funding limitation status at December 31, 2002.

The company and subsidiaries also sponsor defined-contribution plans in which most employees are eligible to participate. Company contributions for most plans are based on a cash matching of employee contributions up to 4 percent of compensation.

In addition, the company and its subsidiaries provide certain health care and life insurance benefits for retired employees. Certain employees achieve eligibility to participate in these contributory plans upon retirement from active service and if they meet specified age and years of service requirements. Election to participate must be made at the date of retirement. Qualifying dependents are also eligible for medical coverage. Approximately 70 percent of the company's current retirees participate in the medical plans. Plan documents reserve the company's right to amend or terminate the plans at any time. Premiums charged retirees for medical coverage are based on years of service and are adjusted annually for changes in the cost of the plans as determined by an

NORTHROP GRUMMAN CORPORATION

independent actuary. In addition to this medical inflation cost-sharing feature, the plans also have provisions for deductibles, copayments, coinsurance percentages, out-of-pocket limits, schedule of reasonable fees, managed care providers, maintenance of benefits with other plans, Medicare carve-out and a maximum lifetime benefit of from \$250,000 to \$1,000,000 per covered individual. It is the policy of the company to fund the maximum amount deductible for income taxes into the Voluntary Employees' Beneficiary Association (VEBA) trust established for the Northrop Retiree Health Care Plan for Retired Employees for payment of benefits.

The cost to the company of these plans in each of the last three years is shown in the following table.

<i>\$ in millions</i>	Pension Benefits			Medical and Life Benefits		
	2002	2001	2000	2002	2001	2000
Components of net periodic benefit cost (income)						
Service cost	\$ 303	\$ 205	\$ 175	\$ 34	\$ 25	\$ 26
Interest cost	859	770	694	128	99	98
Expected return on plan assets	(1,289)	(1,273)	(1,236)	(29)	(35)	(43)
Amortization of						
Prior service costs	51	52	41	1		1
Transition assets, net	(34)	(39)	(40)			
Net loss (gain) from previous years	14	(52)	(194)	1	(11)	(29)
Curtailment income			(31)			1
Settlement cost (income)	2		131	(3)		(370)
Net periodic benefit cost (income)	(94)	(337)	(460)	132	78	(316)
Less net periodic benefit cost (income) included in						
Income from discontinued operations	(4)	(2)	(22)			7
Loss on disposal of discontinued operations			100			(369)
Net periodic benefit cost (income) from continuing operations	\$ (90)	\$ (335)	\$ (538)	\$ 132	\$ 78	\$ 46
Defined contribution plans cost	\$ 148	\$ 120	\$ 80			

Major assumptions as of each year-end used in the accounting for the defined-benefit plans are shown in the following table. Pension cost is determined using all three factors as of the end of the preceding year, whereas the funded status of the plans, shown later, uses only the first two factors as of the end of each year.

	2002	2001	2000
Discount rate for obligations	6.50%	7.00%	7.50%
Rate of increase for compensation	4.00	4.50	5.00
Expected long-term rate of return on plan assets	9.00	9.50	9.50

These assumptions also were used in retiree health care and life insurance benefit calculations with one modification. Since, unlike the pension trust, the earnings of the VEBA trust are taxable, the above expected long-term rate of return on plan assets was reduced accordingly to an after tax rate. A significant factor used in estimating future per capita cost of covered health care benefits for the company and its retirees is the health care cost trend rate assumption. The rate used was 10 percent for 2003 and is assumed to decrease gradually to 5 percent for 2008 and thereafter. A one-percentage-point change in that rate would have the following effects:

<i>\$ in millions</i>	1-Percentage-Point Increase	1-Percentage-Point Decrease
Effect on total of service and interest cost components	\$ 15	\$ (13)
Effect on postretirement benefit obligation	191	(162)

NORTHROP GRUMMAN CORPORATION

The following tables set forth the funded status and amounts recognized in the Consolidated Statements of Financial Position at each year-end for the company's defined-benefit pension and retiree health care and life insurance benefit plans. Pension benefits data includes the qualified plans as well as 23 unfunded non-qualified plans for benefits provided to directors, officers and employees either beyond those provided by, or payable under, the company's main plans.

<i>\$ in millions</i>	Pension Benefits		Medical and Life Benefits	
	2002	2001	2002	2001
Change in benefit obligation				
Benefit obligation at beginning of year	\$12,404	\$ 9,121	\$ 1,813	\$ 1,173
Service cost	303	205	34	25
Interest cost	859	770	128	99
Plan participants' contributions	14	10	50	41
Plan amendments	34	12		5
Actuarial loss	230	705	262	120
Divestiture	(10)	(18)	(3)	
Acquisitions	8,450	2,391	1,700	484
Benefits paid	(760)	(792)	(175)	(134)
Benefit obligation at end of year	21,524	12,404	3,809	1,813
Change in plan assets				
Fair value of plan assets at beginning of year	13,889	11,763	488	580
Actual loss on plan assets	(1,355)	(537)	(81)	(44)
Employer contributions	115	152	95	42
Plan participants' contributions	14	10	50	41
Divestiture	(9)	(18)		
Acquisitions	6,638	3,311	184	3
Benefits paid	(760)	(792)	(175)	(134)
Fair value of plan assets at end of year	18,532	13,889	561	488
Funded status	(2,992)	1,485	(3,248)	(1,325)
Unrecognized prior service cost	293	310	6	7
Unrecognized net transition asset		(34)		
Unrecognized net loss	3,622	765	380	8
Net asset (liability) recognized	\$ 923	\$ 2,526	\$(2,862)	\$(1,310)
Amounts recognized in the statements of financial position				
Prepaid benefit cost	\$ 3,224	\$ 3,026	\$ 43	\$ 40
Accrued benefit liability	(1,893)	(496)	(1,927)	(1,350)
Accrued benefit liability included in liabilities of businesses held for sale	(408)	(4)	(978)	
Additional minimum liability	(2,122)	(81)		
Intangible asset	351	9		
Accumulated other comprehensive loss	1,771	72		
Net asset (liability) recognized	\$ 923	\$ 2,526	\$(2,862)	\$(1,310)

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For pension plans with benefit obligations in excess of assets as of December 31, 2002, the projected benefit obligation was \$19,344 million, the accumulated benefit obligation was \$17,649 million, and the fair value of assets was \$15,922 million. As of December 31, 2001, the projected benefit obligation was \$1,402 million, the accumulated benefit obligation was \$1,080 million, and the fair value of assets was \$680 million.

Pension plan assets at December 31, 2002, comprised 43 percent domestic equity investments in listed companies (including 7 percent in Northrop Grumman common stock); 17 percent equity investments listed on international exchanges; 29 percent in fixed income investments; 9 percent in venture capital and real estate investments; and 2 percent in cash and cash equivalents. The investment in Northrop Grumman represents 10,854,939 shares, or 5.95 percent of the company's total shares outstanding.

Retiree health care and life insurance plan assets at December 31, 2002, comprised 57 percent domestic equity investments in listed companies; 21 percent equity investments on international exchanges; 15 percent in fixed income investments and 7 percent in cash and equivalents.

LITIGATION, COMMITMENTS AND CONTINGENCIES

The company is subject to a range of claims, lawsuits, environmental matters and administrative proceedings that arise in the ordinary course of business. Estimating liabilities and costs associated with these matters requires judgment and assessment based upon professional knowledge and experience of management and its internal and external legal counsel. In accordance with SFAS No. 5 – *Accounting for Contingencies*, amounts are recorded as charges to earnings when management has determined that it is probable that a liability has been incurred and the amount of the loss can be reasonably estimated. The ultimate resolution of any exposure to the company may vary from earlier estimates as further facts and circumstances become known. Based upon available information, it is the company's expectation that known legal actions are either without merit or will have no material adverse effect on the company's results of operations or financial position. For newly acquired businesses, management applies judgment in estimating the fair value of liabilities assumed, including those related to claims, lawsuits, environmental matters and administrative proceedings, as part of its purchase accounting activities. While the company cannot predict the ultimate outcome of these matters, resolution of one or more of these matters individually or in the aggregate is not expected to have a material effect on the company's financial position or results of operations, but resolution of these matters may have a material effect on cash flows.

The company, as a government contractor, is from time to time subject to U. S. Government investigations relating to its operations. Government contractors that are found to have violated the False Claims Act, or are indicted or convicted for violations of other federal laws, or are considered not to be responsible contractors may be suspended or debarred from government contracting for some period of time. Such convictions could also result in fines. Given the company's dependence on government contracting, suspension or debarment could have a material adverse effect on the company.

During 1996, in U.S. exrel, *Bagley v. TRW Inc.*, the U.S. Department of Justice (DOJ) advised TRW that it had been named as a defendant in lawsuits brought by a former employee originally filed under seal in 1994 and 1995 in the United States District Court for the Central District of California under the *qui tam* provisions of the civil False Claims Act. The DOJ subsequently advised that it would intervene in the litigation. In a consolidated complaint filed jointly by the former employee and the DOJ, it is alleged that TRW misclassified various costs and improperly charged those costs to certain of its federal contracts, that the United States has incurred substantial damages, and that TRW is liable for approximately \$56 million in single damages, subject to trebling, plus penalties, post-judgment interest, costs (including attorneys' fees) and "all other proper relief." All substantive allegations against TRW have been denied in its answer to the consolidated complaint. The company denies the allegations and intends to vigorously defend this matter. Trial is scheduled for November 2003.

On February 3, 2003, the Department of Justice filed a civil False Claims Act case against Newport News Shipbuilding, Inc. in the United States District Court for the Eastern District of Virginia. The government seeks single damages in an amount in excess of \$72 million, plus penalties, costs and interest. Damages may be trebled under the False Claims Act. The complaint alleges that the company improperly charged certain independent research and development costs to its government contracts with respect to the years 1994 through 1999. The company denies the allegations and intends to vigorously defend the matter.

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The IRS is presently completing its audits of the B-2 program through the tax years ending December 31, 2000. Upon completion of these audits, the IRS may adopt a position that the B-2 program was completed in a year prior to 2002, which would create the potential for additional interest expense. Although it is not possible to predict the outcome of the tax audits at this time, management believes that its tax accounting for the B-2 program reflects the appropriate timing of contract completion.

In accordance with company policy on environmental remediation, the estimated cost to complete remediation has been accrued where it is probable that the company will incur such costs in the future, including those for which it has been named a Potentially Responsible Party by the Environmental Protection Agency or similarly designated by other environmental agencies. To assess the potential impact on the company's financial statements, management estimates the total reasonably possible remediation costs that could be incurred by the company, taking into account currently available facts on each site as well as the current state of technology and prior experience in remediating contaminated sites. These estimates are reviewed periodically and adjusted to reflect changes in facts and technical and legal circumstances. Management estimates that at December 31, 2002, the range of reasonably possible future costs for environmental remediation is \$146 million to \$202 million, of which \$156 million has been accrued. Although management cannot predict whether new information gained as projects progress will materially affect the estimated liability accrued, management does not anticipate that future remediation expenditures will have a material adverse effect on the company's results of operations, financial position, or cash flows.

The company does not make use of business arrangements or other business activities that involve so-called off balance sheet, variable interest or special purpose entities. In the ordinary course of business, the company utilizes standby letters of credit and other arrangements with financial institutions principally to guarantee the future performance on certain company contracts. Such financial arrangements supporting performance totaled \$841 million at December 31, 2002 and \$684 million at December 31, 2001. Increases in 2002 over 2001 reflect the effect of the TRW acquisition. For all years presented, the company had no material related party transactions. The company also maintains self-insured workers' compensation plans, which are secured by surety bonds and a general agreement of indemnity with the surety. At December 31, 2002 and 2001, there were \$439 million and \$287 million of such instruments outstanding, respectively.

Rental expense for operating leases was \$233 million for 2002, \$219 million for 2001 and \$122 million for 2000. Minimum rental commitments under long-term noncancellable operating leases total \$1.7 billion which is payable as follows: 2003 - \$367 million, 2004 - \$297 million, 2005 - \$236 million, 2006 - \$181 million, 2007 - \$149 million, and 2008 and thereafter - \$459 million.

PREFERRED SHARE PURCHASE RIGHTS

The company has a rights plan pursuant to which a preferred share purchase right is attached to each share of its common stock that is or becomes outstanding prior to October 31, 2008. The rights become exercisable 10 days after the public announcement that any person or group has (i) acquired 15 percent more of the outstanding shares of the company's common stock, or (ii) initiated a tender offer for shares of the company's common stock, which, if consummated, would result in any person or group acquiring 15 percent or more of the outstanding shares of the company's common stock. Once exercisable, each right will entitle the holder to purchase one one-thousandth of a share of the company's Series A junior participating preferred stock, par value \$1.00 per share, at a price of \$250.00 per one one-thousandth of a share, subject to adjustment. Alternatively, under certain circumstances involving an acquisition of 15 percent or more of the company's common stock outstanding, each right will entitle its holder to purchase, at a fifty percent discount, a number of shares of the company's common stock having a market value of two times the exercise price of the right. The company may (i) exchange the rights at an exchange ratio of one share of its common stock per right, or (ii) redeem the rights, at a price of \$0.01 per right, at any time prior to an acquisition of 15 percent or more of the outstanding shares of the company's common stock by any person or group.

STOCK COMPENSATION PLANS

At December 31, 2002, Northrop Grumman had three stock-based compensation plans—the 2001 Long-Term Incentive Stock Plan (2001 LTISP) and the 1993 Long-Term Incentive Stock Plan (1993 LTISP), both applicable to employees, and the 1995 Stock Option Plan for Non-Employee Directors (SOPND).

The 2001 and 1993 LTISP's permit grants to key employees of three general types of stock incentive awards: stock options, stock appreciation rights (SARs) and stock awards. Each stock option grant is made with an exercise price either at the closing price of the stock on the date of grant (market options) or at a premium over the closing price of the stock on the date of grant (premium options). Options generally vest in 25 percent increments one, two, three and four years from the grant date under the 2001 LTISP and two, three, four and five years from the grant date under the 1993 LTISP. Under both plans options expire ten years after the grant date. No SARs have been granted under either the LTISP's. Stock awards, in the form of restricted performance stock rights, are granted to key employees without payment to the company. Under the 2001 LTISP, recipients of the rights earn shares of stock based on an economic value added (EVA) metric over a three-year performance period with distributions made entirely at the end of the third year. Under the 1993 LTISP, recipients of the rights earn shares of stock based on a total-shareholder-return measure of performance over a five-year performance period with interim distributions three and four years after grant. If at the end of the applicable performance period objectives have not been met, unearned rights up to 100 percent of the original grant for five elected officers, and up to 70 percent of the original grant for all other recipients, will be forfeited. Termination of employment can result in forfeiture of some or all of the benefits extended under the plan. Each year, through 2001, 1.5 percent of the company's total issued and outstanding common stock at the end of the preceding fiscal year became available for issuance pursuant to incentive awards. At December 31, 2002, 2.8 million shares were available for future grants under the 2001 LTISP.

The SOPND permits grants of stock options to nonemployee directors. Each grant of a stock option is made at the closing market price on the date of the grant, is immediately exercisable, and expires ten years after the grant date. At December 31, 2002, 204,000 shares were available for future grants under the SOPND.

In connection with the acquisition of Litton, the company converted Litton stock options to company stock options. For Litton options only, a reduction of equity was recorded which is being amortized as compensation expense. Acquired TRW options were converted to the company's options and fully vested on the date of acquisition. Compensation expense for restricted performance stock rights is estimated and accrued over the vesting period. The fixed 30 percent minimum distribution portion is recorded at grant value and the variable portion is recorded at market value. Compensation expense recognized for stock awards was \$63 million in 2002, \$21 million in 2001, and \$14 million in 2000.

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Stock option activity for the last three years is summarized below:

	Shares Under Option	Weighted- Average Exercise Prices	Shares Exercisable
Outstanding at December 31, 1999	4,830,083	76	1,926,899
Granted, market options	686,791	73	
Options acquired upon acquisition of Comptek	114,771	34	
Cancelled	(385,322)	82	
Exercised	(572,050)	46	
Outstanding at December 31, 2000	4,674,273	78	2,277,341
Granted, market options	2,128,810	81	
Options acquired upon acquisition of Litton	1,110,485	57	
Cancelled	(215,531)	85	
Exercised	(985,424)	61	
Outstanding at December 31, 2001	6,712,613	78	2,173,779
Granted, market options	2,255,063	114	
Options acquired and vested upon acquisition of TRW	5,810,231	92	
Cancelled	(199,759)	78	
Exercised	(1,184,350)	76	
Outstanding at December 31, 2002	13,393,798	90	8,531,746

At December 31, 2002, the following stock options were outstanding:

Range of Exercise Prices	Options Outstanding			Options Exercisable		
	Number Outstanding at 12/31/02	Weighted- Average Remaining Contractual Life	Weighted- Average Exercise Prices	Number Exercisable at 12/31/02	Weighted- Average Exercise Prices	
\$14 to 77	2,880,198	6.6 years	\$ 66	1,894,906	\$ 66	
78 to 90	3,538,409	7.1 years	81	2,078,615	82	
91 to 107	3,394,102	5.6 years	97	3,090,071	97	
108 to 128	3,581,089	8.5 years	112	1,468,154	109	
	13,393,798			8,531,746		

Restricted performance stock rights and restricted stock rights were granted with weighted-average grant-date fair values per share as follows: 2002 - 826,145 at \$114; 2001 - 846,145 at \$81; and 2000 - 38,890 at \$65.

NORTHROP GRUMMAN CORPORATION**UNAUDITED SELECTED QUARTERLY DATA**

Quarterly financial results are set forth in the following tables together with dividend and common stock price data. Information in the following tables has been restated to reflect discontinued operations. The company's common stock is traded on the New York Stock Exchange and Pacific Exchanges (trading symbol NOC). The approximate number of holders of record of the company's common stock at March 7, 2003, was 37,300.

2002 Quarters*\$ in millions, except per share*

	4	3	2	1
Net sales	\$ 4,830	\$ 4,214	\$ 4,231	\$ 3,931
Operating margin	411	313	354	313
Income from continuing operations before cumulative effect of accounting change	226	141	181	149
Net income (loss)	224	(59)	182	(283)
Basic earnings per share from continuing operations before cumulative effect of accounting change	1.76	1.19	1.55	1.29
Basic earnings (loss) per share	1.75	(.58)	1.56	(2.59)
Diluted earnings per share from continuing operations before cumulative effect of accounting change	1.73	1.17	1.52	1.27
Diluted earnings (loss) per share	1.72	(.56)	1.53	(2.56)
Dividends per common share	.40	.40	.40	.40
Dividends per mandatorily redeemable preferred share	1.75	1.75	1.75	1.75
<i>Stock price per share:</i>				
High	125.50	129.83	135.00	118.89
Low	87.20	93.31	111.30	95.50

In the fourth quarter of 2002, the company acquired TRW and entered into a transaction to sell the TRW's automotive business. The Electron Devices and Ruggedized Displays businesses were sold in October of 2002. In the third quarter of 2002, the company recorded a pretax charge of \$65 million on the F-16 Block 60 combat avionics program, recorded a pretax charge of \$87 million on the Polar Tanker program, recorded a pretax adjustment of \$69 million to reverse previously established reserves on the cruise ship program, and recorded a \$20 million favorable pretax adjustment from restructuring a Technology Services contract. Also in the third quarter, the company recorded an after tax loss from discontinued operations of \$178 million, including a goodwill impairment loss of \$186 million. In the second quarter, the company recorded a \$16 million charge on a contract with Oracle relating to Oracle's Enterprise License Agreement with the State of California. In July 2002 Northrop Grumman and Oracle rescinded the contract with the state. In the first quarter, the company completed its acquisition of Newport News. The first quarter also includes a \$432 million charge to record the cumulative effect of an accounting change upon adoption of SFAS No. 142 – *Goodwill and Other Intangible Assets*.

NORTHROP GRUMMAN CORPORATION**2001 Quarters***\$ in millions, except per share*

	4	3	2	1
Net sales	\$ 4,145	\$ 3,410	\$ 3,471	\$ 1,986
Operating margin	324	240	279	190
Income from continuing operations	141	92	123	103
Net income	131	79	114	103
Basic earnings per share from continuing operations	1.40	1.01	1.39	1.43
Basic earnings per share	1.29	.85	1.29	1.43
Diluted earnings per share from continuing operations	1.38	1.00	1.38	1.42
Diluted earnings per share	1.28	.84	1.28	1.42
Dividends per common share	.40	.40	.40	.40
Dividends per mandatorily redeemable preferred share	1.75	1.75	1.69	
<i>Stock price per share:</i>				
High	110.56	104.50	97.06	99.10
Low	88.50	76.40	76.40	79.13

In the fourth quarter of 2001, the company acquired in excess of 80 percent of Newport News and completed its acquisition of EIS. The company also recorded a \$13 million downward operating margin adjustment on the Polar Tanker program in the fourth quarter. In the third quarter, the company recorded a \$60 million pretax charge to operating margin on the Project America cruise ship program following the bankruptcy of the customer, AMCV. Third quarter operating margin also reflects a \$20 million positive adjustment for Joint STARS contract closeouts and downward cumulative margin rate adjustments on unmanned vehicle contracts totaling \$10 million. In the second quarter, the company acquired Litton, which produced increased sales and operating margin.

MANAGEMENT'S STATEMENT OF FINANCIAL RESPONSIBILITY

The management of Northrop Grumman prepared and is responsible for the consolidated financial statements and all related financial information contained in this Annual Report. The consolidated financial statements, which include amounts based on estimates and judgments, have been prepared in accordance with accounting principles generally accepted in the United States.

In recognition of its responsibility for the integrity and objectivity of data in the financial statements, Northrop Grumman maintains a system of internal accounting controls designed to provide reasonable assurance that assets are safeguarded and transactions are properly executed and recorded. The system includes policies and procedures, examinations by an internal audit staff and officer review.

Northrop Grumman is dedicated to the highest standards of business conduct. This dedication is reflected in written policy statements covering, among other subjects, environmental protection, potentially conflicting outside interests of employees, compliance with regulations and laws, ethical business practices, and adherence to the highest standards of conduct and practices in transactions and relationships with customers, including the U.S. government. Ongoing education and communication programs and review activities are designed to create a strong compliance culture—one that encourages employees to raise their policy questions and concerns and that forbids retribution for doing so.

Northrop Grumman's financial statements have been audited by Deloitte & Touche LLP. Their audit was conducted in accordance with auditing standards generally accepted in the United States of America. Their report for 2002 appears herein.

The Audit Committee of the Board of Directors periodically meets with and reviews the activities of the independent auditors, internal auditors and management. Both the independent auditors and the internal auditors have unrestricted access to members of the Audit Committee, with or without management representatives present.

Kent Kresa
Chairman of the Board
and Chief Executive Officer

Ronald D. Sugar
President and Chief Operating Officer

Richard B. Waugh, Jr.
Corporate Vice President and Chief Financial Officer
March 18, 2003

NORTHROP GRUMMAN CORPORATION

INDEPENDENT AUDITORS' REPORT

Board of Directors and Shareholders of
Northrop Grumman Corporation
Los Angeles, California

We have audited the accompanying consolidated statements of financial position of Northrop Grumman Corporation and subsidiaries as of December 31, 2002 and 2001, and the related consolidated statements of income, comprehensive income, changes in shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2002. Our audits also included the financial statement schedule listed in the Index at Item 15. These financial statements and the financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and the financial statement schedule based on our audits.

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

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of Northrop Grumman Corporation and subsidiaries at December 31, 2002 and 2001, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2002, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, such financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

As discussed in the footnotes to the consolidated financial statements, the Company changed its method of accounting for goodwill and other intangible assets effective January 1, 2002, to conform to Statement of Financial Accounting Standards No. 142 – *Goodwill and Other Intangible Assets*.

/s/ DELOITTE & TOUCHE LLP

Deloitte & Touche LLP
Los Angeles, California
March 18, 2003

NORTHROP GRUMMAN CORPORATION

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

No information is required in response to this Item.

PART III

Item 10. Directors and Executive Officers of the Registrant

The information as to Directors will be incorporated herein by reference to the Proxy Statement for the 2003 Annual Meeting of Stockholders to be filed within 120 days after the end of the company's fiscal year. Information with respect to Executive Officers is included in Part I under the caption "Executive Officers of the Registrant".

Item 11. Executive Compensation

The information as to Executive Compensation will be incorporated herein by reference to the Proxy Statement for the 2003 Annual Meeting of Stockholders to be filed within 120 days after the end of the company's fiscal year.

Item 12. Security Ownership of Certain Beneficial Owners and Management

The information as to Security Ownership of Certain Beneficial Owners and Management will be incorporated herein by reference to the Proxy Statement for the 2003 Annual Meeting of Stockholders to be filed within 120 days after the end of the company's fiscal year.

Item 13. Certain Relationships and Related Transactions

The information as to Certain Relationships and Related Transactions will be incorporated herein by reference to the Proxy Statement for the 2003 Annual Meeting of Stockholders to be filed within 120 days after the end of the company's fiscal year.

Item 14. Controls and Procedures

- (a) Evaluation of disclosure controls and procedures. Registrant's principal executive officer (Chairman and Chief Executive Officer) and principal financial officer (Corporate Vice President and Chief Financial Officer) have evaluated Registrant's disclosure controls and procedures as of a date within 90 days of the filing date of this Annual Report on Form 10-K and have concluded that these controls and procedures are designed to ensure that information required to be disclosed by the Registrant in this Annual Report on Form 10-K is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and Form 10-K. These disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by Registrant in the reports that it files or submits under the Securities Exchange Act of 1934 (15 USC § 78a et seq) is accumulated and communicated to Registrant's management, including the principal executive officer and the principal financial officer, as appropriate to allow timely decisions regarding required disclosure. The principal executive officer and the principal financial officer have also concluded based upon their evaluation that there are no significant deficiencies or material weaknesses in these disclosure controls and procedures.
- (b) Changes in internal controls. There were no significant changes in the Registrant's internal controls or in other factors that could significantly affect these controls subsequent to the date of their evaluation.

PART IV

Item 15. Exhibits, Financial Statement Schedules and Reports on Form 8-K

- (a) 1. Financial Statements
 - Consolidated Statements of Financial Position
 - Consolidated Statements of Income
 - Consolidated Statements of Comprehensive Income
 - Consolidated Statements of Cash Flows
 - Consolidated Statements of Changes in Shareholders' Equity
 - Notes to Consolidated Financial Statements
 - Independent Auditors' Report
- 2. Financial Statement Schedule
 - Schedule II - Valuation and Qualifying Accounts

All other schedules are omitted either because they are not applicable or not required or because the required information is included in the financial statements or notes thereto.

(b) Reports on Form 8-K.

A report on Form 8-K was dated and filed October 17, 2002 by Northrop Grumman Corporation (i) reporting pursuant to Item 5 the issuance on October 17, 2002 of its earnings release for the fiscal quarter ended September 30, 2002 and incorporating such press release by reference into the Form 8-K, and (ii) filing the press release as an exhibit pursuant to Item 7(c).

A report on Form 8-K was dated and filed October 28, 2002 by Northrop Grumman Corporation, which furnished pursuant to Items 7 and 9 certain investor presentation materials.

A report on Form 8-K was dated and filed November 12, 2002 by Northrop Grumman Corporation, which furnished pursuant to Items 7 and 9 certifications of its Chairman and Chief Executive Officer and Corporate Vice President and Chief Financial Officer in connection with its Quarterly Report on Form 10-Q for the quarterly period ending September 30, 2002. Such certifications were filed pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

A report on Form 8-K was dated and filed November 19, 2002 by Northrop Grumman Corporation reporting pursuant to Item 5 that it had entered into a Master Purchase Agreement dated as of November 18, 2002 with BCP Acquisition Company, L.L.C. providing for the purchase and sale of certain of TRW Inc.'s automotive business assets and property, and including as exhibits pursuant to Item 7 the Master Purchase Agreement and press release relating thereto.

A report on Form 8-K was dated and filed November 21, 2002 by Northrop Grumman Corporation, which furnished pursuant to Items 7 and 9 certain investor presentation materials and a press release issued November 21, 2002 providing updated financial guidance to reflect the proposed acquisition of TRW Inc. and the sale of its automotive business.

A report on Form 8-K was dated November 21, 2002 and filed November 22, 2002 by Northrop Grumman Corporation, which furnished pursuant to Items 7 and 9 an investor presentation transcript.

A report on Form 8-K was dated and filed November 25, 2002 by Northrop Grumman Corporation (i) reporting pursuant to Item 5 that Northrop Grumman would commence mailing to its stockholders supplemental disclosure material relating to the proposed acquisition of TRW Inc. and (ii) furnishing the supplemental disclosure material as an exhibit pursuant to Item 7.

A report on Form 8-K was dated November 22 and filed November 25, 2002 by Northrop Grumman Corporation, which furnished pursuant to Items 7 and 9 certain investor presentation materials.

A report on Form 8-K was dated and filed November 27, 2002 by Northrop Grumman Corporation (i) reporting pursuant to Item 5 the issuance by Northrop Grumman and TRW Inc. of a joint press release relating to

NORTHROP GRUMMAN CORPORATION

notice to the Department of Justice of their intention to complete the acquisition on December 11, 2002 and (ii) including the press release as an exhibit pursuant to Item 7.

A report on Form 8-K was dated and filed December 5, 2002 by Northrop Grumman Corporation (i) reporting pursuant to Item 5 the issuance by Northrop Grumman and TRW Inc. of a joint press release relating to their continuing discussions with the Department of Justice about the proposed acquisition and (ii) included the press release as an exhibit pursuant to Item 7.

A report on Form 8-K was dated and filed December 10, 2002 by Northrop Grumman Corporation (i) reporting pursuant to Item 5 the issuance by Northrop Grumman of a press release announcing its agreement with the Department of Justice on the terms of a consent decree relating to the proposed acquisition of TRW Inc. and (ii) included the press release as an exhibit pursuant to Item 7.

A report on Form 8-K was dated and filed December 11, 2002 by Northrop Grumman Corporation (i) reporting pursuant to Item 5 the issuance by Northrop Grumman of a press release announcing a consent decree with the Department of Justice relating to the proposed acquisition of TRW Inc. and (ii) including the press release as an exhibit pursuant to Item 7.

A report on Form 8-K was dated December 11, 2002 and filed December 12, 2002 by Northrop Grumman Corporation (i) reporting pursuant to Item 5 the issuance by Northrop Grumman of a press release announcing shareholder approval of the issuance of Northrop Grumman common stock for the proposed acquisition of TRW Inc., and (ii) including the press release as an exhibit pursuant to Item 7.

A report on Form 8-K was dated December 12, 2002 and filed December 13, 2002 by Northrop Grumman Corporation reporting pursuant to Item 5 the issuance by Northrop Grumman of a press release announcing the closing of its acquisition of TRW Inc. and including the press release as an exhibit pursuant to Item 7. The Form 8-K also reported pursuant to Item 5 on the proposed Final Judgment and Stipulation and Order entered by the federal court relating to the acquisition, and filed as an exhibit pursuant to Item 7 the Stipulation and Order with the proposed Final Judgment.

A report on Form 8-K was dated and filed December 20, 2002 by Northrop Grumman Corporation reporting pursuant to Item 2 on the acquisition of TRW Inc. The Form 8-K also (i) incorporated by reference pursuant to Item 7(a) certain financial statements of TRW Inc. previously filed by TRW Inc., (ii) reported pursuant to Item 7(b) that certain required pro forma financial information would be filed no later than 60 days after the date of the Form 8-K, and (iii) included as an exhibit pursuant to Item 7(c), by incorporation by reference to Northrop Grumman's Registration Statement No. 333-83672, the merger agreement relating to the acquisition of TRW Inc.

A report on Form 8-K was dated December 23, 2002 and filed December 27, 2002 by Northrop Grumman Corporation (i) reporting pursuant to Item 5 the execution on December 20, 2002 of Amendment No. 1 to the Master Purchase Agreement dated as of November 18, 2002 with BCP Acquisition Company, L.L.C. providing for TRW Inc. and TRW Automotive Inc. to become parties to the Master Purchase Agreement, and (ii) including Amendment No. 1 as an exhibit pursuant to Item 7.

A report on Form 8-K/A was dated and filed January 22, 2003 by Northrop Grumman Corporation reporting pursuant to Item 7 certain required pro forma financial information.

A report on Form 8-K was dated and filed February 3, 2003 by Northrop Grumman Corporation, which included pursuant to Items 7 and 9 certain investment conference presentation materials.

A report on Form 8-K was dated and filed February 13, 2003 by Northrop Grumman Corporation, which included pursuant to Items 7 and 9 certain investor presentation materials.

A report on Form 8-K was dated February 28, 2003 and filed March 5, 2003 by Northrop Grumman Corporation (i) reporting pursuant to Item 2 the completion of the sale of TRW's automotive business by Northrop Grumman pursuant to the Master Purchase Agreement, dated November 18, 2002 (as amended by Amendment No. 1 dated December 1, 2002 and Amendment No. 2 dated February 18, 2003), by and among Northrop Grumman, Northrop Grumman Space & Mission Systems Corp. (formerly known as TRW, Inc.), TRW Automotive, Inc, and BCP Acquisition Company L.L.C. and (ii) including Amendment No. 2 as an exhibit pursuant to Item 7.

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Exhibits

- 2(a) Agreement and Plan of Merger among Northrop Grumman Corporation, Purchaser Corp. I and Newport News Shipbuilding Inc. dated as of November 7, 2001 (incorporated by reference to Annex C to Amendment No. 5 to Form S-4 Registration Statement No. 333-61506 filed November 13, 2001)
- 2(b) Amendment and Plan of Merger dated as of June 30, 2002 by and among TRW Inc., Northrop Grumman Corporation and Richmond Acquisition Corporation (incorporated by reference to Annex A to Amendment No. 4 to Form S-4 Registration Statement No. 333-83672 filed July 17, 2002)
- 2(c) Master Purchase Agreement between BCP Acquisition Company L.L.C. and Northrop Grumman Corporation dated as of November 18, 2002 (incorporated by reference to Exhibit 2.1 to Form 8-K dated November 18, 2002, filed November 19, 2002), and amended December 20, 2002, (incorporated by reference to Exhibit 99.1 to Form 8-K dated December 20, 2002, filed December 27, 2002) and February 28, 2003 (incorporated by reference to Exhibit 99.1 to Form 8-K dated February 28, 2003, filed March 5, 2003)
- 3(a) Restated Certificate of Incorporation of Northrop Grumman Corporation (incorporated by reference to Exhibit C to the Definitive Proxy Statement on Schedule 14A filed April 4, 2002)
- *3(b) Amended Bylaws of Northrop Grumman Corporation
- 4(a) Registration Rights Agreement dated as of January 23, 2001 by and among Northrop Grumman Systems Corporation, Northrop Grumman Corporation and Unitrin, Inc. (incorporated by reference to Exhibit (d)(6) to Amendment No. 4 to Schedule TO filed January 31, 2001)
- 4(b) Certificate of Designations, Preferences and Rights of Series B Preferred Stock of Northrop Grumman Corporation (incorporated by reference to Exhibit C to the Definitive Proxy Statement on Schedule 14A filed April 13, 2001)
- 4(c) Rights Agreement dated as of January 31, 2001 between Northrop Grumman Corporation and EquiServe Trust Company, N.A. (incorporated by reference to Exhibit 4.3 to Amendment No. 2 to Form S-4 Registration Statement No. 333-54800 filed March 27, 2001)
- 4(d) Indenture dated as of October 15, 1994 between Northrop Grumman Systems Corporation and JPMorgan Chase Bank (formerly The Chase Manhattan Bank), as trustee (incorporated by reference to Exhibit 4.1 to Form 8-K filed October 25, 1994)
- 4(e) Form of Officer's Certificate (without exhibits) establishing the terms of Northrop Grumman Systems Corporation's 7% Notes due 2006, 7 ³/₄% Debentures due 2016 and 7 ⁷/₈% Debentures due 2026 (incorporated by reference to Exhibit 4-3 to Form S-4 Registration Statement No. 333-02653 filed April 19, 1996)
- 4(f) Form of Northrop Grumman Systems Corporation's 7% Notes due 2006 (incorporated by reference to Exhibit 4-4 to Form S-4 Registration Statement No. 333-02653 filed April 19, 1996)
- 4(g) Form of Northrop Grumman Systems Corporation's 7 ³/₄% Debentures due 2016 (incorporated by reference to Exhibit 4-5 to Form S-4 Registration Statement No. 333-02653 filed April 19, 1996)
- 4(h) Form of Northrop Grumman Systems Corporation's 7 ⁷/₈% Debentures due 2026 (incorporated by reference to Exhibit 4-6 to Form S-4 Registration Statement No. 333-02653 filed April 19, 1996)
- 4(i) Purchase Contract Agreement dated as of November 21, 2001 between Northrop Grumman Corporation and JPMorgan Chase Bank, as Purchase Contract Agent (incorporated by reference to Exhibit 4.3 to Form 8-K dated and filed November 21, 2001)

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- 4(j) Pledge Agreement dated as of November 21, 2001 among Northrop Grumman Systems Corporation, The Bank of New York, as Collateral Agent, Custodial Agent and Securities Intermediary, and JPMorgan Chase Bank, as Purchase Contract Agent (incorporated by reference to Exhibit 4.4 to Form 8-K dated and filed November 21, 2001)
- 4(k) Form of Remarketing Agreement (incorporated by reference to Exhibit 4.5 to Form 8-K dated and filed November 21, 2001)
- 4(l) Form of Officers' Certificate establishing the terms of Northrop Grumman Systems Corporation's 7 ¹/₈% Notes due 2011 and 7 ³/₄% Debentures due 2031 (incorporated by reference to Exhibit 10.9 to Form 8-K dated and filed April 17, 2001)
- 4(m) Indenture dated as of November 21, 2001 between Northrop Grumman Corporation and JPMorgan Chase Bank, as trustee (incorporated by reference to Exhibit 4.1 to Form 8-K dated and filed November 21, 2001)
- 4(n) Officers' Certificate dated as of November 21, 2001 describing the terms of the Senior Notes that are a component of Northrop Grumman Corporation's Equity Security Units (incorporated by reference to Exhibit 4.2 to Form 8-K dated and filed November 21, 2001)
- 4(o) Indenture dated as of April 13, 1998 between Litton Industries, Inc. (predecessor-in-interest to Northrop Grumman Systems Corporation) and The Bank of New York, as trustee, under which its 6.05% Senior Notes due 2003 and 6.75% Senior Debentures due 2018 were issued (incorporated by reference to Exhibit 4.1 to the Form 10-Q of Litton Industries, Inc. for the quarter ended April 30, 1998, and filed June 15, 1998)
- 4(p) Supplemental Indenture with respect to Indenture dated April 13, 1998, dated as of April 3, 2001 among Litton Industries, Inc. (predecessor-in-interest to Northrop Grumman Systems Corporation), Northrop Grumman Corporation, Northrop Grumman Systems Corporation and The Bank of New York, as trustee (incorporated by reference to Exhibit 4.5 to Form 10-Q for the quarter ended March 31, 2001, filed May 10, 2001)
- *4(q) Supplemental Indenture with respect to Indenture dated April 13, 1998, dated as of December 20, 2002 among Litton Industries, Inc. (predecessor-in-interest to Northrop Grumman Systems Corporation), Northrop Grumman Corporation, Northrop Grumman Systems Corporation and The Bank of New York, as trustee
- 4(r) Senior Indenture dated as of December 15, 1991 between Litton Industries, Inc. (predecessor-in-interest to Northrop Grumman Systems Corporation) and The Bank of New York, as trustee, under which its 7.75% and 6.98% debentures due 2026 and 2036 were issued and specimens of such debentures (incorporated by reference to Exhibit 4.1 to the Form 10-Q of Litton Industries, Inc. for the quarter ended April 30, 1996, filed June 11, 1996)
- 4(s) Supplemental Indenture with respect to Indenture dated December 15, 1991, dated as of April 3, 2001, among Litton Industries, Inc. (predecessor-in-interest to Northrop Grumman Systems Corporation), Northrop Grumman Corporation, Northrop Grumman Systems Corporation and The Bank of New York, as trustee (incorporated by reference to Exhibit 4.7 to Form 10-Q for the quarter ended March 31, 2001, filed May 10, 2001)
- *4(t) Supplemental Indenture with respect to Indenture dated December 15, 1991, dated as of December 20, 2002 among Litton Industries, Inc. (predecessor-in-interest to Northrop Grumman Systems Corporation), Northrop Grumman Corporation, Northrop Grumman Systems Corporation and The Bank of New York, as trustee

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- 4(u) Form of Exchange Security for the \$400,000,000 8% senior notes due 2009 of Litton Industries, Inc. (predecessor-in-interest to Northrop Grumman Systems Corporation) (incorporated by reference to Exhibit 4.3 to the Form 10-Q of Litton Industries, Inc. for the quarter ended April 30, 2000, filed June 9, 2000)
- 4(v) Indenture between TRW Inc. (now named Northrop Grumman Space & Mission Systems Corp.) and The Chase Manhattan Bank, as successor Trustee, dated as of May 1, 1986 (incorporated by reference to Exhibit 2 to the Form 8-A Registration Statement of TRW Inc. dated July 3, 1986)
- 4(w) First Supplemental Indenture between TRW Inc. (now named Northrop Grumman Space & Mission Systems Corp.) and The Chase Manhattan Bank, as successor Trustee, dated as of August 24, 1989 (incorporated by reference to Exhibit 4(b) to Form S-3 Registration Statement No. 33-30350 of TRW Inc.)
- 4(x) Second Supplemental Indenture between TRW Inc. (now named Northrop Grumman Space & Mission Systems Corp.) and The Chase Manhattan Bank, as successor Trustee, dated as of June 2, 1999 (incorporated by reference to Exhibit 4(c) to Form S-4 Registration Statement No. 333-83227 of TRW Inc. filed July 20, 1999)
- 4(y) Third Supplemental Indenture between TRW Inc. (now named Northrop Grumman Space & Mission Systems Corp.) and The Chase Manhattan Bank, as successor Trustee, dated as of June 2, 1999 (incorporated by reference to Exhibit 4(d) to Form S-4 Registration Statement No. 333-83227 of TRW Inc. filed July 20, 1999)
- 4(z) Fourth Supplemental Indenture between TRW Inc. (now named Northrop Grumman Space & Mission Systems Corp.) and The Chase Manhattan Bank, as successor Trustee, dated as of June 2, 1999 (incorporated by reference to Exhibit 4(e) to Form S-4 Registration Statement No. 333-83227 of TRW Inc. filed July 20, 1999)
- 4(aa) Fifth Supplemental Indenture between TRW Inc. (now named Northrop Grumman Space & Mission Systems Corp.) and The Chase Manhattan Bank, as successor Trustee, dated as of June 2, 1999 (incorporated by reference to Exhibit 4(f) to Form S-4 Registration Statement No. 333-83227 of TRW Inc. filed July 20, 1999)
- 4(bb) Sixth Supplemental Indenture between TRW Inc. (now named Northrop Grumman Space & Mission Systems Corp.) and The Chase Manhattan Bank, as successor Trustee, dated as of June 2, 1999 (incorporated by reference to Exhibit 4(g) to Form S-4 Registration Statement No. 333-83227 of TRW Inc. filed July 20, 1999)
- 10(a) Northrop Grumman 2001 Long-Term Incentive Stock Plan (incorporated by reference to Exhibit B to the Definitive Proxy Statement on Schedule 14A filed April 13, 2001)
- 10(b) Amendment Agreement between Kent Kresa and Northrop Grumman Corporation dated August 3, 2001 (incorporated by reference to Exhibit 10.2 to Form 10-Q for the quarter ended June 30, 2001 filed August 9, 2001)
- 10(c) Employment Agreement between Dr. Ronald D. Sugar and Northrop Grumman Corporation dated September 19, 2001 (incorporated by reference to Exhibit 10.3 to Form 10-Q for the quarter ended September 30, 2001 filed November 5, 2001)
- 10(d) Form of Restricted Performance Stock Rights Agreement under the Northrop Grumman Corporation 2001 Long-Term Incentive Stock Plan (incorporated by reference to Exhibit 10.42 to Amendment No. 6 to Form S-4 Registration Statement No. 333-83672 filed September 13, 2002)
- 10(e) Form of Notice of Non-Qualified Grant of Stock Options and Option Agreement under the Northrop Grumman Corporation 2001 Long-Term Incentive Stock (incorporated by reference to Exhibit 10.5 to Form S-4 Registration Statement No. 333-83672 filed March 4, 2002)

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- 10(f) Form of Non-Qualified Stock Option Agreement under the Northrop Grumman Corporation 2001 Long-Term Incentive Stock (for officers) (incorporated by reference to Exhibit 10.41 to Amendment No. 6 to Form S-4 Registration Statement No. 333-83672 filed September 13, 2002)
- 10(g) Notice of Grant of Restricted Performance Stock Rights and Rights Agreement of Kent Kresa, dated August 15, 2001 under the Northrop Grumman Corporation 2001 Long-Term Incentive Stock Plan (incorporated by reference to Exhibit 10.6 to Form 10-Q for the quarter ended September 30, 2001 filed November 5, 2001)
- 10(h) Restricted Performance Stock Rights Agreement of Kent Kresa, dated August 20, 2002 under the Northrop Grumman Corporation 2001 Long-Term Incentive Stock Plan (incorporated by reference to Exhibit 10.44 to Amendment No. 6 to Form S-4 Registration Statement No. 333-83672 filed September 13, 2002)
- 10(i) Notice of Grant of Non-Qualified Stock Options and Option Agreement of Kent Kresa, dated August 15, 2001 under the Northrop Grumman Corporation 2001 Long-Term Incentive Stock Plan (incorporated by reference to Exhibit 10.7 to Form 10-Q for the quarter ended September 30, 2001 filed November 5, 2001)
- 10(j) Non-Qualified Stock Option Agreement of Kent Kresa, dated August 20, 2002, under the Northrop Grumman Corporation 2001 Long-Term Incentive Stock Plan (incorporated by reference to Exhibit 10.43 to Amendment No. 6 to Form S-4 Registration Statement No. 333-83672 filed September 13, 2002)
- 10(k) Form of \$2,500,000,000 Five-Year Revolving Credit Agreement dated as of March 30, 2001 among Northrop Grumman Corporation, Northrop Grumman Systems Corporation and Litton Industries, Inc. (predecessor-in-interest to Northrop Grumman Systems Corporation), the Lenders party thereto, The Chase Manhattan Bank and Credit Suisse First Boston, as Co-Administrative Agents, Salomon Smith Barney Inc., as Syndication Agent, and The Bank of Nova Scotia and Deutsche Banc Alex. Brown, Inc. as Co-Documentation Agents (incorporated by reference to Exhibit 10.7 to Amendment No. 2 to Form S-4 Registration Statement No. 333-54800 filed March 27, 2001)
- 10(l) Form of Guarantee dated as of April 3, 2001 by Northrop Grumman Corporation of the indenture indebtedness issued by the former Litton Industries, Inc. (incorporated by reference to Exhibit 10.10 to Form 8-K dated and filed April 17, 2001)
- 10(m) Form of Guarantee dated as of April 3, 2001 by Northrop Grumman Corporation of Northrop Grumman Systems Corporation indenture indebtedness (incorporated by reference to Exhibit 10.11 to Form 8-K dated and filed April 17, 2001)
- 10(n) 1973 Incentive Compensation Plan as amended December 16, 1998 (incorporated by reference to Exhibit 10(c) to Form 10-K filed March 23, 1999)
- 10(o) 1973 Performance Achievement Plan (incorporated by reference to Form 8-B filed June 21, 1985)
- 10(p) Northrop Grumman Corporation Supplemental Plan 2 (incorporated by reference to Exhibit 10(e) to Form 10-K filed February 22, 1996) and amended as of June 19, 1996 (incorporated by reference to Exhibit 10(e) to Form 10-K filed February 27, 1997)
- 10(q) Northrop Grumman Corporation ERISA Supplemental Plan I (incorporated by reference to Exhibit 10(d) to Form 10-K filed February 28, 1994)
- 10(r) Retirement Plan for Independent Outside Directors as amended April 24, 1998 (incorporated by reference to Exhibit 10(g) to Form 10-K filed March 23, 1999)

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- 10(s) 1987 Long-Term Incentive Plan, as amended (incorporated by reference to Form SE filed March 30, 1989)
- 10(t) Executive Life Insurance Policy (incorporated by reference to Exhibit 10(i) to Form 10-K filed February 22, 1996)
- 10(u) Executive Accidental Death, Dismemberment and Plegia Insurance Policy (incorporated by reference to Exhibit 10(j) to Form 10-K filed February 22, 1996)
- 10(v) Executive Long-Term Disability Insurance Policy (incorporated by reference to Exhibit 10(k) to Form 10-K filed February 22, 1996)
- 10(w) Key Executive Medical Plan Benefit Matrix (incorporated by reference to Exhibit 10(l) to Form 10-K filed February 22, 1996)
- 10(x) Executive Dental Insurance Policy Group Numbers 5134 and 5135 (incorporated by reference to Exhibit 10(m) to Form 10-K filed February 22, 1996)
- 10(y) Group Excess Liability Policy (incorporated by reference to Exhibit 10(n) to Form 10-K filed February 22, 1996)
- 10(z) Northrop Grumman 1993 Long-Term Incentive Stock Plan, as amended and restated (incorporated by reference to Exhibit 4.1 to Form S-8 Registration Statement filed November 25, 1998)
- 10(aa) Northrop Corporation 1993 Stock Plan for Non-Employee Directors (incorporated by reference to Exhibit B to the Northrop Corporation 1993 Proxy Statement filed March 30, 1993), amended as of September 21, 1994 (incorporated by reference to Exhibit 10(q) to Form 10-K filed March 21, 1995)
- 10(bb) Northrop Grumman Corporation 1995 Stock Option Plan for Non-Employee Directors (incorporated by reference to Exhibit A to the Definitive Proxy Statement on Schedule 14A filed March 30, 1995)
- 10(cc) Northrop Grumman Corporation March 2000 Change-in-Control Severance Plan (incorporated by reference to Exhibit 10(b) to Form 10-Q filed November 4, 1999)
- 10(dd) Form of Northrop Grumman Corporation March 2000 Special Agreement (effective March 1, 2000) (incorporated by reference to Exhibit 10(a) to Form 10-Q filed November 4, 1999)
- 10(ee) Northrop Grumman Executive Deferred Compensation Plan (effective December 29, 1994), as amended (incorporated by reference to Exhibit 10.31 to Form S-4 Registration Statement No. 333-83672 filed March 4, 2002)
- *10(ff) Northrop Grumman Corporation Non-Employee Directors Equity Participation Plan, as amended December 18, 2002
- 10(gg) CPC Supplemental Executive Retirement Program (incorporated by reference to Exhibit 10(u) to Form 10-K filed March 30, 1998)
- 10(hh) Northrop Grumman Estate Enhancement Program, effective November 1, 2000 (incorporated by reference to Exhibit 10(v) to Form 10-K/A filed March 8, 2001)
- 10(ii) Special Officer Retiree Medical Plan as amended December 19, 2000 (incorporated by reference to Exhibit 10(w) to Form 10-K/A filed March 8, 2001)
- 10(jj) Northrop Grumman Deferred Compensation Plan (effective December 1, 2000) and amended March 1, 2001, March 30, 2001 and September 14, 2001 (incorporated by reference to Exhibit 10.36 to Form S-4 Registration Statement No. 333-83672 filed March 4, 2002)
- 10(kk) The 2002 Incentive Compensation Plan of Northrop Grumman Corporation (incorporated by reference to Exhibit B to the Definitive Proxy Statement on Schedule 14A filed April 4, 2002)

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- 10(ll) Form of Indemnification Agreement between Northrop Grumman Corporation and its directors and executive officers (incorporated by reference to Exhibit 10.39 to Form S-4 Registration Statement No. 333-83672 filed March 4, 2002)
- *10(mm) Transition Agreement dated as of February 19, 2003 between Northrop Grumman Corporation and Kent Kresa
- *10(nn) Employment Agreement dated February 19, 2003 between Northrop Grumman Corporation and Dr. Ronald D. Sugar
- 10(oo) Amended and Restated TRW Supplementary Retirement Income Plan effective October 23, 2002 (incorporated by reference to Exhibit 10(f) to Form 10-Q of TRW Inc. filed November 6, 2002)
- *10(qq) Form of Guarantee dated as of January 9, 2003 by Northrop Grumman Space & Mission Systems Corp. (formerly known as TRW Inc.) of Northrop Grumman Systems Corporation indenture indebtedness
- *21 Subsidiaries
- *23 Independent Auditors' Consent
- *24 Power of Attorney

* Filed with this Report

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CERTIFICATION

I, Kent Kresa, Chairman and Chief Executive Officer, certify that:

1. I have reviewed this annual report on Form 10-K of Northrop Grumman Corporation (“registrant”);
2. Based on my knowledge, this annual 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 annual report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;
4. The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and we have:
 - a) designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
 - b) evaluated the effectiveness of the registrant’s disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the “Evaluation Date”); and
 - c) presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;
5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation, to the registrant’s auditors and the audit committee of registrant’s board of directors (or persons performing the equivalent function):
 - a) all significant deficiencies in the design or operation of internal controls which could adversely affect the registrant’s ability to record, process, summarize and report financial data and have identified for the registrant’s auditors any material weaknesses in internal controls; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal controls; and
6. The registrant’s other certifying officer and I have indicated in this annual report whether or not there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

Date: March 21, 2003

/s/ Kent Kresa

Kent Kresa
Chairman and Chief Executive Officer

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CERTIFICATION

I, Richard B. Waugh, Jr., Corporate Vice President and Chief Financial Officer, certify that:

1. I have reviewed this annual report on Form 10-K of Northrop Grumman Corporation (“registrant”);
2. Based on my knowledge, this annual 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 annual report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;
4. The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and we have:
 - a) designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
 - b) evaluated the effectiveness of the registrant’s disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the “Evaluation Date”); and
 - c) presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;
5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation, to the registrant’s auditors and the audit committee of registrant’s board of directors (or persons performing the equivalent function):
 - a) all significant deficiencies in the design or operation of internal controls which could adversely affect the registrant’s ability to record, process, summarize and report financial data and have identified for the registrant’s auditors any material weaknesses in internal controls; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal controls; and
6. The registrant’s other certifying officer and I have indicated in this annual report whether or not there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

Date: March 21, 2003

/s/ Richard B. Waugh, Jr.

Richard B. Waugh, Jr.
Corporate Vice President and Chief Financial Officer

NORTHROP GRUMMAN CORPORATION

SCHEDULE II—VALUATION AND QUALIFYING ACCOUNTS

(Dollars in Thousands)

<u>COL. A</u>	<u>COL. B</u>	<u>COL. C</u>	<u>COL. D</u>	<u>COL. E</u>
Classification	Balance at Beginning of Period	Additions At Cost ⁽²⁾	Changes - Add (Deduct) ⁽¹⁾	Balance at End of Period
Description:				
Year ended December 31, 2000				
Reserves and allowances deducted from asset accounts:				
Allowances for doubtful amounts	\$ 37,674	\$ 26,548	\$ (10,766)	\$ 53,456
Year ended December 31, 2001				
Reserves and allowances deducted from asset accounts:				
Allowances for doubtful amounts ⁽³⁾	\$ 53,456	\$ 103,413	\$ (18,940)	\$ 137,929
Year ended December 31, 2002				
Reserves and allowances deducted from asset accounts:				
Allowances for doubtful amounts	\$ 137,929	\$ 218,943	\$(66,952)	\$ 289,920

(1) Uncollectible amounts written off, net of recoveries.

(2) Includes reserves and allowances acquired of \$71,899 and \$56,141 for the years ended December 31, 2002 and 2001, respectively.

(3) Prior year amounts have been reclassified to conform to current year presentation and have been restated for discontinued operations.

**BYLAWS
OF
NORTHROP GRUMMAN CORPORATION**
(A Delaware Corporation)

ARTICLE I

OFFICES

Section 1.01. Registered Office. The registered office of Northrop Grumman Corporation (the "Corporation") in the State of Delaware shall be at Corporation Trust Center, 1209 Orange Street, City of Wilmington, County of New Castle, and the name of the registered agent at that address shall be The Corporation Trust Company.

Section 1.02. Principal Executive Office. The principal executive office of the Corporation shall be located at 1840 Century Park East, Los Angeles, California 90067. The Board of Directors of the Corporation (the "Board of Directors") may change the location of said principal executive office.

Section 1.03. Other Offices. The Corporation may also have an office or offices at such other place or places, either within or without the State of Delaware, as the Board of Directors may from time to time determine or as the business of the Corporation may require.

ARTICLE II

MEETINGS OF STOCKHOLDERS

Section 2.01. Annual Meetings. The annual meeting of stockholders of the Corporation shall be held between May 1 and July 1 of each year on such date and at such time as the Board of Directors shall determine. At each annual meeting of stockholders, directors shall be elected in accordance with the provisions of Section 3.04 hereof and any other proper business may be transacted.

Section 2.02. Special Meetings. Special meetings of stockholders for any purpose or purposes may be called at any time by a majority of the Board of Directors, the Chairman of the Board, or by the President and Chief Executive Officer. Special meetings may not be called by any other person or persons. Each special meeting shall be held at such date and time as is requested by the person or persons calling the meeting, within the limits fixed by law.

Section 2.03. Place of Meetings. Each annual or special meeting of stockholders shall be held at such location as may be determined by the Board of Directors or, if no such determination is made, at such place as may be determined by the Chairman of the Board. If no location is so determined, any annual or special meeting shall be held at the principal executive office of the Corporation.

Section 2.04. Notice of Meetings. Written notice of each annual or special meeting of stockholders stating the date and time when, and the place where, it is to be held shall be delivered either personally or by mail to stockholders entitled to vote at such meeting not less than ten (10) nor more than sixty (60) days before the date of the meeting. The purpose or purposes for which the meeting is called may, in the case of an annual meeting, and shall, in the case of a special meeting, also be stated. If mailed, such notice shall be directed to a stockholder at his address as it shall appear on the stock books of the Corporation, unless he shall have filed with the Secretary of the Corporation a written request that notices intended for him be mailed to some other address, in which case such notice shall be mailed to the address designated in such request.

Section 2.05. Conduct of Meetings. All annual and special meetings of stockholders shall be conducted in accordance with such rules and procedures as the Board of Directors may determine subject to the requirements of applicable law and, as to matters not governed by such rules and procedures, as the chairman of such meeting shall determine. The chairman of any annual or special meeting of stockholders shall be the Chairman of the Board. The Secretary, or in the absence of the Secretary, a person designated by the Chairman of the Board,

shall act as secretary of the meeting.

Section 2.06. Notice of Stockholder Business and Nominations. Nominations of persons for election to the Board and the proposal of business to be transacted by the stockholders may be made at an annual meeting of stockholders (a) pursuant to the Corporation's notice with respect to such meeting, (b) by or at the direction of the Board or (c) by any stockholder of record of the Corporation who was a stockholder of record at the time of the giving of the notice provided for in the following paragraph, who is entitled to vote at the meeting and who has complied with the notice procedures set forth in this section.

For nominations or other business to be properly brought before an annual meeting by a stockholder pursuant to clause (c) of the foregoing paragraph, (1) the stockholder must have given timely notice thereof in writing to the Secretary of the Corporation, (2) such business must be a proper matter for stockholder action under the General Corporation Law of the State of Delaware, (3) if the stockholder, or the beneficial owner on whose behalf any such proposal or nomination is made, has provided the Corporation with a Solicitation Notice, as that term is defined in subclause (c)(iii) of this paragraph, such stockholder or beneficial owner must, in the case of a proposal, have delivered a proxy statement and form of proxy to holders of at least the percentage of the Corporation's voting shares required under applicable law to carry any such proposal, or, in the case of a nomination or nominations, have delivered a proxy statement and form of proxy to holders of a percentage of the Corporation's voting shares reasonably believed by such stockholder or beneficial holder to be sufficient to elect the nominee or nominees proposed to be nominated by such stockholder, and must, in either case, have included in such materials the Solicitation Notice and (4) if no Solicitation Notice relating thereto has been timely provided pursuant to this section, the stockholder or beneficial owner proposing such business or nomination must not have solicited a number of proxies sufficient to have required the delivery of such a Solicitation Notice under this section. To be timely, a stockholder's notice shall be delivered to the Secretary at the principal executive offices of the Corporation not less than 45 or more than 75 days prior to the first anniversary (the "Anniversary") of the date on which the Corporation first mailed its proxy materials for the preceding year's annual meeting of stockholders; provided, however, that if the date of the annual meeting is advanced more than 30 days prior to or delayed by more than 30 days after the anniversary of the preceding year's annual meeting, notice by the stockholder to be more timely must be so delivered not later than the close of business on the later of (i) the 90th day prior to such annual meeting or (ii) the 10th day following the day on which public announcement of the date of such meeting is first made. In no event shall the public announcement of an adjournment of an annual meeting commence a new time period for the filing of a stockholder's notice as described herein. Such stockholder's notice shall set forth (a) as to each person whom the stockholder proposes to nominate for election or reelection as a director all information relating to such person as would be required to be disclosed in solicitations of proxies for the election of such nominees as directors pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended (the "Exchange Act") and Rule 14a-11 thereunder (including such person's written consent to serve as a director if elected); (b) as to any other business that the stockholder proposes to bring before the meeting, a brief description of such business, the reasons for conducting such business at the meeting and any material interest in such business of such stockholder and the beneficial owner, if any, on whose behalf the proposal is made; (c) as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the nomination or proposal is made (i) the name and address of such stockholder, as they appear on the Corporation's books, and of such beneficial owner, (ii) the class and number of shares of the Corporation that are owned beneficially and of record by such stockholder and such beneficial owner, and (iii) whether either such stockholder or beneficial owner intends to deliver a proxy statement and form of proxy to holders of, in the case of a proposal, at least the percentage of the Corporation's voting shares required under applicable law to carry the proposal or, in the case of a nomination or nominations, a sufficient number of holders of the Corporation's voting shares to elect such nominee or nominees (an affirmative statement of such intent, a "Solicitation Notice").

Notwithstanding anything in the second sentence of the second paragraph of this Section 2.06 to the contrary, in the event that the number of directors to be elected to the Board is increased and there is no public announcement naming all of the nominees for director or specifying the size of the increased Board made by the Corporation at least 55 days prior to the Anniversary, a stockholder's notice required by this Bylaw shall also be considered timely, but only with respect to nominees for any new positions created by such increase, if it shall be delivered to the Secretary at the principal executive offices of the Corporation not later than the close of business on the 10th day following the day on which such public announcement is first made by the Corporation.

Only persons nominated in accordance with the procedures set forth in this Section 2.06 shall be eligible to serve as directors and only such business shall be conducted at an annual meeting of stockholders as shall have been brought before the meeting in accordance with the procedures set forth in this section. The chair of the meeting shall have the power and the duty to determine whether a nomination or any business proposed to be brought before the meeting has been made in accordance with the procedures set forth in these Bylaws and, if any proposed nomination or business is not in compliance with these Bylaws, to declare that such defective proposed business or nomination shall not be presented for stockholder action at the meeting and shall be disregarded.

Only such business shall be conducted at a special meeting of stockholders as shall have been brought before the meeting pursuant to the Corporation's notice of meeting. Nominations of persons for election to the Board may be made at a special meeting of stockholders at which directors are to be elected pursuant to the Corporation's notice of meeting (a) by or at the direction of the Board or (b) by any stockholder of record of the Corporation who is a stockholder of record at the time of giving of notice provided for in this paragraph, who shall be entitled to vote at the meeting and who complies with the notice procedures set forth in this Section 2.06. Nominations by stockholders of persons for election to the Board may be made at such a special meeting of stockholders if the stockholder's notice required by the second paragraph of this Section 2.06 shall be delivered to the Secretary at the principal executive offices of the Corporation not later than the close of business on the later of the 90th day prior to such special meeting or the 10th day following on which public announcement is first made of the date of the special meeting and of the nominees proposed by the Board to be elected at such meeting.

For purposes of this section, "public announcement" shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or a comparable national news service or in a document publicly filed by the Corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the Exchange Act.

Notwithstanding the foregoing provisions of this Section 2.06, a stockholder shall also comply with all applicable requirements of the Exchange Act and the rules and regulations thereunder with respect to matters set forth in this Section 2.06. Nothing in this Section 2.06 shall be deemed to affect any rights of stockholders to request inclusion of proposals in the Corporation's proxy statement pursuant to Rule 14a-8 under the Exchange Act.

Section 2.07. Quorum. At any meeting of stockholders, the presence, in person or by proxy, of the holders of record of a majority of shares then issued and outstanding and entitled to vote at the meeting shall constitute a quorum for the transaction of business; provided, however, that this Section 2.07 shall not affect any different requirement which may exist under statute, pursuant to the rights of any authorized class or series of stock, or under the Certificate of Incorporation of the Corporation (the "Certificate") for the vote necessary for the adoption of any measure governed thereby. In the absence of a quorum, the stockholders present in person or by proxy, by majority vote and without further notice, may adjourn the meeting from time to time until a quorum is attained. At any reconvened meeting following such an adjournment at which a quorum shall be present, any business may be transacted which might have been transacted at the meeting as originally notified.

Section 2.08. Votes Required. A majority of the votes cast at a duly called meeting of stockholders, at which a quorum is present, shall be sufficient to take or authorize action upon any matter which may properly come before the meeting, unless the vote of a greater or different number thereof is required by statute, by the rights of any authorized class of stock or by the Certificate. Unless the Certificate or a resolution of the Board of Directors adopted in connection with the issuance of shares of any class or series of stock provides for a greater or lesser number of votes per share, or limits or denies voting rights, each outstanding share of stock, regardless of class, shall be entitled to one vote on each matter submitted to a vote at a meeting of stockholders.

Section 2.09. Proxies. A stockholder may vote the shares owned of record by him either in person or by proxy executed in writing (which shall include writings sent by telex, telegraph, cable or facsimile transmission) by the stockholder himself or by his duly authorized attorney-in-fact. No proxy shall be valid after three (3) years from its date, unless the proxy provides for a longer period. Each proxy shall be in writing, subscribed by the stockholder or his duly authorized attorney-in-fact, and dated, but it need not be sealed, witnessed or acknowledged.

Section 2.10. Stockholder Action. Any action required or permitted to be taken by the stockholders of the Corporation must be effected at a duly called annual meeting or special meeting of stockholders of the Corporation, unless such action requiring or permitting shareholder approval is approved by a majority of the Continuing Directors (as defined in the Certificate), in which case such action may be authorized or taken by the written consent of the holders of outstanding shares of stock having not less than the minimum voting power that would be necessary to authorize or take such action at a meeting of stockholders at which all shares entitled to vote thereon were present and voted, provided all other requirements of applicable law and the Certificate have been satisfied.

Section 2.11. List of Stockholders. The Secretary of the Corporation shall prepare and make (or cause to be prepared and made), at least ten (10) days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order and showing the address of, and the number of shares registered in the name of, each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, during ordinary business hours, for a period of at least ten (10) days prior to the meeting, either at a place within the city where the meeting is to be held, which place shall be specified in the notice of the meeting, or, if not so specified, at the place where the meeting is to be held. The list shall also be produced and kept at the time and place of the meeting during the duration thereof, and may be inspected by any stockholder who is present.

Section 2.12. Inspectors of Election. In advance of any meeting of stockholders, the Board of Directors may appoint Inspectors of Election to act at such meeting or at any adjournment or adjournments thereof. If such Inspectors are not so appointed or fail or refuse to act, the chairman of any such meeting may (and, upon the demand of any stockholder or stockholder's proxy, shall) make such an appointment. The number of Inspectors of Election shall be one (1) or three (3). If there are three (3) Inspectors of Election, the decision, act or certificate of a majority shall be effective and shall represent the decision, act or certificate of all. No such Inspector need be a stockholder of the Corporation.

The Inspectors of Election shall determine the number of shares outstanding, the voting power of each, the shares represented at the meeting, the existence of a quorum and the authenticity, validity and effect of proxies; they shall receive votes, ballots or consents, hear and determine all challenges and questions in any way arising in connection with the right to vote, count and tabulate all votes or consents, determine when the polls shall close and determine the result; and finally, they shall do such acts as may be proper to conduct the election or vote with fairness to all stockholders. On request, the Inspectors shall make a report in writing to the secretary of the meeting concerning any challenge, question or other matter as may have been determined by them and shall execute and deliver to such secretary a certificate of any fact found by them.

ARTICLE III

DIRECTORS

Section 3.01. Powers. The business and affairs of the Corporation shall be managed by and be under the direction of the Board of Directors. The Board of Directors shall exercise all the powers of the Corporation, except those that are conferred upon or reserved to the stockholders by statute, the Certificate or these Bylaws.

Section 3.02. Number. Except as otherwise fixed pursuant to the provisions of Section 2 of Article Fourth of the Certificate in connection with rights to elect additional directors under specified circumstances which may be granted to the holders of any class or series of Preferred Stock, par value One Dollar (\$1.00) per share of the Corporation ("Preferred Stock"), the number of directors shall be fixed from time to time by resolution of the Board of Directors but shall not be less than three (3). The Board of Directors, as of January 31, 2001, and thereafter, shall consist of fourteen (14) directors until changed as herein provided.

Section 3.03. Independent Outside Directors. At least sixty percent (60%) of the members of the Board of Directors of the Corporation shall at all times be "Independent Outside Directors", which term is hereby defined to mean any director who:

1. has not in the last five (5) years been an officer or employee of the Corporation or any of its subsidiaries or affiliates; and
2. is not related to an officer of the Corporation (or an officer of any of the Corporation's parents, subsidiaries or affiliates) by blood, marriage or adoption (except relationships more remote than first cousin); and
3. is not, and has not within the last two (2) years been, an officer, director or employee of, and does not own, and has not within the last two (2) years owned, directly or indirectly, in excess of one percent (1%) of any firm, corporation or other business or professional entity which has made or proposes to make during either the Corporation's or such entity's last or next fiscal year payments for property or services in excess of one percent (1%) of the gross revenues either of the Corporation for its last fiscal year or of such entity for its last fiscal year, but excluding payments determined by competitive bids, public utility services at rates set by law or government authority, or payments arising solely from the ownership of securities, or to which the Corporation was indebted at any time during the Corporation's last fiscal year in an aggregate amount in excess of one percent (1%) of the Corporation's total assets at the end of such fiscal year or Five Million dollars (\$5,000,000), whichever is less, but excluding debt securities which have been publicly offered or which are publicly traded; and
4. is not a director, partner, officer or employee of an investment banking firm which has performed services for the Corporation in the last two (2) years or which the Corporation proposes to have perform services in the next year other than as a participating underwriter in a syndicate; and
5. is not a control person of the Corporation (other than as a director of the Corporation) as defined by the regulations of the Securities and Exchange Commission.

Section 3.04. Election and Term of Office. Except as provided in Section 3.07 hereof and subject to the right to elect additional directors under specified circumstances which may be granted, pursuant to the provisions of Section 2 of Article Fourth of the Certificate, to the holders of any class or series of Preferred Stock, directors shall be elected by the stockholders of the Corporation. The Board of Directors shall be and is divided into three classes: Class I, Class II and Class III. The number of directors in each class shall be the whole number contained in the quotient obtained by dividing the authorized number of directors (fixed pursuant to Section 3.02 hereof) by three. If a fraction is also contained in such quotient, then additional directors shall be apportioned as follows: if such fraction is one-third, the additional director shall be a member of Class I; and if such fraction is two-thirds, one of the additional directors shall be a member of Class I and the other shall be a member of Class II. Each director shall serve for a term ending on the date of the third annual meeting of stockholders of the Corporation following the annual meeting at which such director was elected; provided, however, that the directors first elected to Class I shall serve for a term ending on the date of the annual meeting next following the end of the calendar year 2000, the directors first elected to Class II shall serve for a term ending on the date of the second annual meeting next following the end of the calendar year 2000 and the directors first elected to Class III shall serve for a term ending on the date of the third annual meeting next following the end of the calendar year 2000.

Notwithstanding the foregoing provisions of this Section 3.04: each director shall serve until his successor is elected and qualified or until his death, resignation or removal; no decrease in the authorized number of directors shall shorten the term of any incumbent director; and additional directors, elected pursuant to Section 2 of Article Fourth of the Certificate in connection with rights to elect such additional directors under specified circumstances which may be granted to the holders of any class or series of Preferred Stock, shall not be included in any class, but shall serve for such term or terms and pursuant to such other provisions as are specified in the resolution of the Board of Directors establishing such class or series.

Nominations for the election of directors may be made by the Board or a committee thereof or by any stockholder entitled to vote in the election of directors; provided, however, that a stockholder may nominate a

person for election as a director at a meeting only if written notice of such stockholder's intent to make such nomination has been given by such stockholder to, and received by, the Secretary of the Corporation at the principal executive offices of the Corporation not less than sixty (60) days nor more than ninety (90) days prior to the meeting; provided, however, that (a) in the event that less than seventy (70) days' notice or prior public disclosure of the date of the meeting is given or made to stockholders, notice by the stockholder to be timely must be so received not later than the close of business on the 10th day following the date on which such notice of the date of the meeting was mailed or such public disclosure was made, whichever first occurs; and (b) in the event that less than seventy (70) days shall remain from the date of public disclosure of the adoption of this bylaw provision to the date of any meeting, notice by the stockholder to be timely with respect to such meeting must be so received not later than the close of business on the 10th day following the date on which such public disclosure was made. Each such notice shall set forth: (a) the name and address of the stockholder who intends to make the nomination and of the person or persons to be nominated; (b) the name and address as they appear on the Corporation's books of the stockholder intending to make such nomination; (c) the class and number of shares of capital stock of the Corporation which are beneficially owned by such stockholder; (d) a description of all arrangements or understandings between the stockholder and each nominee and any other person or persons (naming such person or persons) pursuant to which the nomination or nominations are to be made by the stockholder; (e) the occupations and business history for the previous five years, other directorships, names of business entities of which the proposed nominee owns a 10 percent or more equity interest, a list of any criminal convictions, including federal and state securities violations and such other information regarding each proposed nominee as may be required by the federal proxy rules in effect at the time the notice is submitted; and (f) the consent of each nominee to serve as a director of the Corporation if so elected. No person shall be eligible for election as a director of the Corporation unless nominated in accordance with the procedures set forth in this Section 3.04. The Chairman of any meeting of stockholders shall direct that any nomination not made in accordance with these procedures be disregarded.

Section 3.05. Election of Chairman of the Board. At the organizational meeting immediately following the annual meeting of stockholders, the directors shall elect a Chairman of the Board from among the directors who shall hold office until the corresponding meeting of the Board of Directors in the next year and until his successor shall have been elected or until his earlier resignation or removal. Any vacancy in such office may be filled for the unexpired portion of the term in the same manner by the Board of Directors at any regular or special meeting.

Section 3.06. Removal. Subject to the right to elect directors under specified circumstances which may be granted pursuant to Section 2 of Article Fourth of the Certificate to the holders of any class or series of Preferred Stock, any director may be removed from office only as provided in Article Tenth of the Certificate.

Section 3.07. Vacancies and Additional Directorships. Except as otherwise provided pursuant to Section 2 of Article Fourth of the Certificate in connection with rights to elect additional directors under specified circumstances which may be granted to the holders of any class or series of Preferred Stock, newly created directorships resulting from any increase in the number of directors and any vacancies on the Board of Directors resulting from death, resignation, disqualification, removal or other cause shall be filled solely by the affirmative vote of a majority of the remaining directors then in office, even though less than a quorum of the Board of Directors. Any director elected in accordance with the preceding sentence shall hold office for the remainder of the full term of the class of directors in which the new directorship was created or the vacancy occurred and until such director's successor shall have been elected and qualified. No decrease in the number of directors constituting the Board of Directors shall shorten the term of any incumbent director.

Section 3.08. Regular and Special Meetings. Promptly after, and on the same day as, each annual election of directors by the stockholders, the Board shall, if a quorum be present, meet in an organizational meeting to elect a chairman, appoint members of the standing committees of the Board, elect officers of the Corporation and conduct other business as appropriate. Additional notice of such meeting need not be given if such meeting is conducted promptly after the annual meeting to elect directors and if the meeting is held in the same location where the election of directors was conducted. Regular meetings of the Board shall be held at such times and places as the Board shall determine. Notice of regular meetings shall be mailed to each director at least five days before the meeting, addressed to the director's usual place of business or to his or her residence address or to an address specifically designated by the director.

Section 3.09. Quorum. At all meetings of the Board of Directors, a majority of the fixed number of directors shall constitute a quorum for the transaction of business, except that when the Board of Directors consists of one director, then the one director shall constitute a quorum. In the absence of a quorum, the directors present, by majority vote and without notice other than by announcement, may adjourn the meeting from time to time until a quorum shall be present. At any reconvened meeting following such an adjournment at which a quorum shall be present, any business may be transacted which might have been transacted at the meeting as originally notified.

Section 3.10. Votes Required. Except as otherwise provided by applicable law or by the Certificate, the vote of a majority of the directors present at a meeting duly held at which a quorum is present shall be sufficient to pass any measure.

Section 3.11. Place and Conduct of Meetings. Each regular meeting and special meeting of the Board of Directors shall be held at a location determined as follows: The Board of Directors may designate any place, within or without the State of Delaware, for the holding of any meeting. If no such designation is made: (i) any meeting called by a majority of the directors shall be held at such location, within the county of the Corporation's principal executive office, as the directors calling the meeting shall designate; and (ii) any other meeting shall be held at such location, within the county of the Corporation's principal executive office, as the Chairman of the Board may designate or, in the absence of such designation, at the Corporation's principal executive office. Subject to the requirements of applicable law, all regular and special meetings of the Board of Directors shall be conducted in accordance with such rules and procedures as the Board of Directors may approve and, as to matters not governed by such rules and procedures, as the chairman of such meeting shall determine. The chairman of any regular or special meeting shall be the Chairman of the Board, or in his absence a person designated by the Board of Directors. The Secretary, or in the absence of the Secretary a person designated by the chairman of the meeting, shall act as secretary of the meeting.

Section 3.12. Fees and Compensation. Directors shall be paid such compensation as may be fixed from time to time by resolutions of the Board of Directors (a) for their usual and contemplated services as directors, (b) for their services as members of committees appointed by the Board of Directors, including attendance at committee meetings as well as services which may be required when committee members must consult with management staff, and (c) for extraordinary services as directors or as members of committees appointed by the Board of Directors, over and above those services for which compensation is fixed pursuant to items (a) and (b) in this Section 3.12. Compensation may be in the form of an annual retainer fee or a fee for attendance at meetings, or both, or in such other form or on such basis as the resolutions of the Board of Directors shall fix. Directors shall be reimbursed for all reasonable expenses incurred by them in attending meetings of the Board of Directors and committees appointed by the Board of Directors and in performing compensable extraordinary services. Nothing contained herein shall be construed to preclude any director from serving the Corporation in any other capacity, such as an officer, agent, employee, consultant or otherwise, and receiving compensation therefore.

Section 3.13. Committees of the Board of Directors. Subject to the requirements of applicable law, the Board of Directors may from time to time establish committees, including standing or special committees, which shall have such duties and powers as are authorized by these Bylaws or by the Board of Directors. Committee members, and the chairman of each committee, shall be appointed by the Board of Directors. The Chairman of the Board, in conjunction with the several committee chairmen, shall make recommendations to the Board of Directors for its final action concerning members to be appointed to the several committees of the Board of Directors. Any member of any committee may be removed at any time with or without cause by the Board of Directors. Vacancies which occur in any committee shall be filled by a resolution of the Board of Directors. If any vacancy shall occur in any committee by reason of death, resignation, disqualification, removal or otherwise, the remaining members of such committee, so long as a quorum is present, may continue to act until such vacancy is filled by the Board of Directors. The Board of Directors may, by resolution, at any time deemed desirable, discontinue any standing or special committee. Members of standing committees, and their chairmen, shall be elected yearly at the organizational meeting of the Board of Directors which is held immediately following the annual meeting of stockholders.

Section 3.14. Audit Committee. There shall be an Audit Committee of the Board of Directors which shall serve at the pleasure of the Board of Directors and be subject to its control. The Committee shall have the following membership and powers:

1. The Committee shall have at least three (3) members. Each member of the Committee shall be an Independent Director, which term as used in these By-laws is hereby defined to mean any director that is “Independent” within the meaning of Section 10A(m) of the Securities Exchange Act of 1934 as added by Section 301 of the Sarbanes-Oxley Act of 2002, the rules and regulations adopted by the Securities and Exchange Commission pursuant thereto and any applicable rule of the New York Stock Exchange, as such law, rules and applications may be in effect from time to time.

2. The Board of Directors shall adopt an Audit Committee Charter that may be modified or amended from time to time, and the Audit Committee Charter may include, in addition to and not by way of limitation of or substitution for the powers and responsibilities set forth in the following subsections of this Section 3.14, such powers and responsibilities as the Board of Directors deems appropriate and in accordance with requirements of law, regulations and rules of the New York Stock Exchange, all as may be applicable from time to time.

3. The Committee shall appoint or discharge the Corporation’s independent auditors, based upon the Committee’s judgment of the independence of the auditors (taking into account the fees charged both for audit and non-audit services) and the quality of their audit work. The Committee shall determine and provide for the compensation of the independent auditors. Ratification by the stockholders of the Committee’s appointment of the Corporation’s independent auditors may be sought in conjunction with management’s solicitation of proxies for the annual meeting of stockholders, if so determined by the Committee. If the independent auditors must be discharged, the Committee shall appoint new independent auditors.

4. The Committee shall review and approve the scope and plan of the audit.

5. The Committee shall meet with the independent auditors at appropriate times to review, among other things, the results of the audit and any certification, report or opinion which the auditors propose to render in connection with the Corporation’s financial statements.

6. The Committee shall review and approve in advance each non-prohibited professional service of a non-audit nature to be provided by the independent auditors.

7. The Committee shall meet with the Corporation’s chief internal auditor quarterly to review the adequacy of the Corporation’s system of internal controls and such other matters as the Committee may deem appropriate.

8. The Committee shall have the power to direct the auditors and the internal audit staff to inquire into and report to it with respect to any of the Corporation’s contracts, transactions or procedures, or the conduct of the Corporate Office, or any division, profit center, subsidiary or other unit, or any other matter having to do with the Corporation’s business and affairs. The Committee may initiate special investigations and shall have the power to engage and compensate professional advisors to assist it in performing its functions.

9. The Committee shall have such other powers and responsibilities as may be lawfully delegated to it from time to time by the Board of Directors.

Section 3.15. Compensation And Management Development Committee . There shall be a Compensation and Management Development Committee of the Board of Directors which shall serve at the pleasure of the Board of Directors and be subject to its control. The Committee shall have the following membership and powers:

1. The Committee shall be composed of at least three (3) members. All members of the Committee shall be Independent Outside Directors. The principal Human Resources officer of the Corporation shall be a non-voting member of the Committee.

2. The Committee shall establish the Corporation's annual performance objectives under the Corporation's incentive compensation plans and shall review and approve the final performance against the approved goals.

3. The Committee shall make recommendations to the Board of Directors with respect to the base salary and incentive compensation of the Chief Executive Officer and Chief Operating Officer.

4. The Committee shall take final action with respect to the base salary and incentive compensation of the elected officers with the exception of the Chief Executive Officer and the Chief Operating Officer. All such actions on base salary and incentive compensation approved by the Committee shall be reported to the Board of Directors. The Committee shall take final action with respect to the base salary and incentive compensation of the five (5) employees, who are not elected officers, receiving the highest base salaries immediately preceding the date of any such action.

5. The Committee shall review management's recommendations and take final action with respect to all awards to be made to the elected officers under the Corporation's long-term incentive plans or other similar benefit plans which may be adopted by the Board of Directors or the stockholders and in which corporate officers or directors are eligible to participate, provided however that all such awards must be reported to the Board of Directors.

6. The Committee shall review on a continuing basis the Corporation's general compensation policies and practices, and benefits. The Committee shall also approve compensation plans in which elected officers are eligible to participate. However, the Board of Directors shall take action on those plans which will be submitted to the stockholders for final approval.

7. The Committee shall review from time to time and report to the Board of Directors actions taken by management concerning the Corporation's overall executive structure and the steps being taken to assure the succession of qualified management.

8. The Committee shall have such other duties as may be lawfully delegated to it from time to time by the Board of Directors.

Section 3.16. Compliance, Public Issues and Policy Committee. There shall be a Compliance, Public Issues and Policy Committee of the Board of Directors which shall serve at the pleasure of the Board of Directors and be subject to its control. The Committee shall have the following membership and powers:

1. The Committee shall have at least three (3) members. Each member shall be an Independent Director as defined in these By-laws.

2. The Committee shall receive reports from time to time on the Corporation's compliance with applicable laws and regulations to the extent not delegated to another Committee, on investigations of a legal compliance nature and as to such other legal matters as the Committee may determine.

3. The Committee shall receive reports relating to the Corporation's code of ethics, which is set forth in the corporation's Standards of Business Conduct, and shall from time to time review such code and make recommendations to the Board of Directors for any revisions deemed warranted.

4. The Committee shall review, approve and monitor the policy, organization, charter and implementation of the Northrop Grumman Employees Political Action Committee.

5. The Committee shall review and approve the policy of the Corporation for engaging the services of consultants and commission agents.

6. The Committee shall review on a continuing basis the Corporation's compliance with its various affirmative action plans and programs.

7. The Committee shall review on a continuing basis the Corporation's compliance with its various environmental, health and safety policies and procedures.

8. The Committee shall review and report to the Board of Directors from time to time concerning the Corporation's compliance with the Corporation's policies, practices and procedures with respect to consultants and commission agents.

9. The Committee shall review and make policy and budget recommendations to the Board of Directors for its actions concerning proposed charitable contributions and aid to higher education to be given by the Corporation each year.

10. The Committee shall have such other duties as lawfully may be delegated to it from time to time by the Board of Directors.

Section 3.17. Finance Committee. There shall be a Finance Committee of the Board of Directors which shall serve at the pleasure of the Board of Directors and be subject to its control. The Committee shall have the following membership and powers:

1. The Committee shall have at least five (5) members. At least fifty percent (50%) of the members of the Committee shall be Independent Outside Directors. The chief financial officer of the Corporation shall be a non-voting member of the Committee.
2. The Committee shall review and give consideration to management requests for required specific new financing of a long-term nature, whether debt or equity, and make recommendations to the Board of Directors for its final action.
3. The Committee shall review the current financial condition of the Company and planned financial requirements.
4. The Committee shall review periodically the Corporation's dividend policy in connection with dividend declarations and make recommendations to the Board of Directors for its final action.
5. The Committee shall consider management's recommendations concerning acquisitions, mergers or divestments which management has determined to be of an unusual or material nature and shall make recommendations to the Board of Directors for its final action.
6. The Committee shall consider management's recommendations concerning contracts or programs which management has determined to be of an unusual or material nature and shall make recommendations to the Board of Directors for its final action.
7. The Committee shall periodically review the investment performance of the employee benefit plans, capital asset requirements and short-term investment policy when appropriate.
8. The Committee shall have such other duties as lawfully may be delegated to it from time to time by the Board of Directors.

Section 3.18. Nominating and Corporate Governance Committee. There shall be a Nominating and Corporate Governance Committee of the Board of Directors which shall serve at the pleasure of the Board of Directors and be subject to its control. The Committee shall have the following membership and powers:

1. The Committee shall have at least three (3) members. All members of the Committee shall be Independent Outside Directors.
2. The Committee shall review candidates to serve as directors and shall recommend nominees to the Board of Directors for election at each annual meeting of stockholders or other special meetings where directors are to be elected and shall recommend persons to serve as proxies to vote proxies solicited by management in connection with such meetings.
3. The Committee shall cause the names of all director candidates that are approved by the Board of Directors to be listed in the Corporation's proxy materials and shall support the election of all candidates so nominated by the Board of Directors to the extent permitted by law.
4. The Committee shall review and make recommendations to the Board of Directors for its final action concerning the composition and size of the Board of Directors, its evaluation of the performance of incumbent directors, its recommendations concerning the compensation of the Directors, its recommendations concerning directors to fill vacancies and its evaluation and recommendations concerning potential candidates to serve in the future on the Board of Directors to assure the Board's continuity and succession and its evaluation and recommendations on matters of corporate governance as appropriate.

5. The Committee shall have such other duties as lawfully may be delegated to it from time to time by the Board of Directors.

Section 3.19. Meetings of Committees. Each committee of the Board of Directors shall fix its own rules of procedure consistent with the provisions of applicable law and of any resolutions of the Board of Directors governing such committee. Each committee shall meet as provided by such rules or such resolution of the Board of Directors, and shall also meet at the call of its chairman or any two (2) members of such committee. Unless otherwise provided by such rules or by such resolution, the provisions of these Bylaws under Article III entitled "Directors" relating to the place of holding meetings and the notice required for meetings of the Board of Directors shall govern the place of meetings and notice of meetings for committees of the Board of Directors. A majority of the members of each committee shall constitute a quorum thereof, except that when a committee consists of one (1) member, then the one (1) member shall constitute a quorum. In the absence of a quorum, a majority of the members present at the time and place of any meeting may adjourn the meeting from time to time until a quorum shall be present and the meeting may be held as adjourned without further notice or waiver. Except in cases where it is otherwise provided by the rules of such committee or by a resolution of the Board of Directors, the vote of a majority of the members present at a duly constituted meeting at which a quorum is present shall be sufficient to pass any measure by the committee.

ARTICLE IV

OFFICERS

Section 4.01. Designation, Election and Term of Office. The Corporation shall have a Chairman of the Board and/or a President either of whom may be designated Chief Executive Officer by the Board of Directors, such Vice Presidents (each of whom may be assigned by the Board of Directors or the Chief Executive Officer an additional title descriptive of the functions assigned to him and one or more of whom may be designated Executive, Group or Senior Vice President) as the Board of Directors deems appropriate, a Secretary and a Treasurer. These officers shall be elected annually by the Board of Directors at the organizational meeting immediately following the annual meeting of stockholders, and each such officer shall hold office until the corresponding meeting of the Board of Directors in the next year or until his earlier resignation, death or removal. Any vacancy in any of the above offices may be filled for an unexpired portion of the term by the Board of Directors at any regular special meeting. The Chief Executive Officer may, by a writing filed with the Secretary, designate titles for employees and agents, as, from time to time, may appear necessary or advisable in the conduct of the affairs of the Corporation and, in the same manner, terminate or change such titles.

Section 4.02. Chairman of the Board. The Board of Directors shall designate the Chairman of the Board from among its members. The Chairman of the Board of Directors shall preside at all meetings of the Board and the Stockholders, and shall perform such other duties as shall be delegated to him by the Board or the officer designated as chief executive.

Section 4.03. President. The President shall perform such duties and have such responsibilities as may from time to time be delegated or assigned to him by the Board of Directors or the officer designated as chief executive.

Section 4.04. Chief Executive. The Board of Directors shall designate either the Chairman of the Board or the President to be the chief executive of the Corporation. The officer so designated shall be responsible for the general supervision, direction and control of the business and affairs of the Corporation.

Section 4.05. Chief Financial Officer. The Chief Financial Officer of the Corporation shall be responsible to the Chief Executive Officer for the management and supervision of all financial matters and to provide for the financial growth and stability of the Corporation. He shall attend all regular meetings of the Board of Directors and keep the Directors currently informed concerning all significant financial matters that could impact upon the business or affairs of the Corporation. He shall also perform such additional duties as may be assigned to him from time to time by the Board of Directors or the Chief Executive Officer.

Section 4.06. Executive Vice Presidents, Senior Vice Presidents and Vice Presidents. Executive vice presidents, senior vice presidents and vice presidents of the Corporation that are elected by the Board of Directors shall perform such duties as may be assigned to them from time to time by the Chief Executive Officer.

Section 4.07. Chief Legal Officer. The chief legal officer of the Corporation shall be the General Counsel who shall be responsible to the Chief Executive Officer for the management and supervision of all legal matters. The General Counsel shall attend all regular meetings of the Board of Directors and shall keep the Directors currently informed concerning all significant legal matters, particularly those involving important business, legal, moral or ethical issues that could impact upon the business or affairs of the Corporation.

Section 4.08. Secretary. The Secretary shall keep the minutes of the meetings of the stockholders, the Board of Directors and all committee meetings. The Secretary shall be the custodian of the corporate seal and shall affix it to all documents which he is authorized by law or the Board of Directors to sign and seal. The Secretary also shall perform such other duties as may be assigned from time to time by the Chief Executive Officer.

Section 4.09. Treasurer. The Treasurer shall be accountable to the Senior Vice President, Finance, and shall perform such duties as may be assigned to the Treasurer from time to time by the Senior Vice President, Finance.

Section 4.10. Appointed Officers. The Chief Executive Officer may appoint one or more Corporate Staff Vice Presidents, officers of groups or divisions or assistant secretaries, assistant treasurers and such other assistant officers as the business of the Corporation may require, each of whom shall hold office for such period, have such authority and perform such duties as may be specified from time to time by the Chief Executive Officer.

Section 4.11. Absence or Disability of an Officer. In the case of the absence or disability of an officer of the Corporation the Board of Directors, or any officer designated by it, or the Chief Executive Officer may, for the time of the absence or disability, delegate such officer's duties and powers to any other officer of the Corporation.

Section 4.12. Officers Holding Two or More Offices. The same person may hold any two or more of the above-mentioned offices. However, no officer shall execute, acknowledge or verify any instrument in more than one capacity, if such instrument is required by law, by the Certificate or by these Bylaws, to be executed, acknowledged or verified by any two or more officers.

Section 4.13. Compensation. The Board of Directors shall have the power to fix the compensation of all officers and employees of the Corporation.

Section 4.14. Resignations. Any officer may resign at any time by giving written notice to the Board of Directors, to the Chief Executive Officer, or to the Secretary of the Corporation. Any such resignation shall take effect at the time specified therein unless otherwise determined by the Board of Directors. The acceptance of a resignation by the Corporation shall not be necessary to make it effective.

Section 4.15. Removal. Any officer of the Corporation may be removed, with or without cause, by the affirmative vote of a majority of the entire Board of Directors. Any assistant officer of the Corporation may be removed, with or without cause, by the Chief Executive Officer, or by the Board of Directors.

ARTICLE V

INDEMNIFICATION OF DIRECTORS, OFFICERS, EMPLOYEES AND AGENTS

Section 5.01. Right to Indemnification. Each person who was or is made a party, or is threatened to be made a party, to any actual or threatened action, suit, or proceeding, whether civil, criminal, administrative, or investigative (hereinafter a "proceeding"), by reason of the fact that he or she is or was a director, officer, employee, or agent of the Corporation (hereinafter an "indemnitee") shall be indemnified and held harmless by the Corporation

to the fullest extent authorized by the Delaware General Corporation Law, as the same exists or may hereafter be amended, or by other applicable law as then in effect, against all expense, liability, and loss (including attorneys' fees, judgments, fines, ERISA excise taxes or penalties, and amounts paid in settlement) actually and reasonably incurred or suffered by such indemnitee in connection therewith. Any person who was or is made a party, or is threatened to be made a party, to any proceeding by reason of the fact that he or she is or was serving at the request of an executive officer of the Corporation as a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust or other enterprise, including service with respect to an employee benefit plan, shall also be considered an indemnitee for the purposes of this Article. The right to indemnification provided by this Article shall apply whether or not the basis of such proceeding is alleged action in an official capacity as such director, officer, employee or agent or in any other capacity while serving as such director, officer, employee or agent. Notwithstanding anything in this Section 5.01 to the contrary, except as provided in Section 5.03 of this Article with respect to proceedings to enforce rights to indemnification, the Corporation shall indemnify any such indemnitee in connection with a proceeding (or part thereof) initiated by such indemnitee only if such proceeding (or part thereof) was authorized by the Corporation.

Section 5.02. Advancement of Expenses. (a) The right to indemnification conferred in Section 5.01 shall include the right to have the expenses incurred in defending or preparing for any such proceeding in advance of its final disposition (hereinafter an "advancement of expenses") paid by the Corporation; provided, however, that an advancement of expenses incurred by an indemnitee in his or her capacity as a director or officer (and not in any other capacity in which service was or is to be rendered by such indemnitee, including, without limitation, service to an employee benefit plan) shall be made only upon delivery to the Corporation of an undertaking containing such terms and conditions, including the requirement of security, as the Board of Directors deems appropriate (hereinafter an "undertaking"), by or on behalf of such indemnitee, to repay all amounts so advanced if it shall ultimately be determined by final judicial decision from which there is no further right to appeal that such indemnitee is not entitled to be indemnified for such expenses under this Article or otherwise; and provided, further, that an advancement of expenses shall not be made if the Corporation's Board of Directors makes a good faith determination that such payment would violate any applicable law. The Corporation shall not be obligated to advance fees and expenses to a director, officer, employee or agent in connection with a proceeding instituted by the Corporation against such person. (b) Notwithstanding anything in Section 5.02(a) to the contrary, the right of employees or agents to advancement of expenses shall be at the discretion of the Board of Directors and on such terms and conditions, including the requirement of security, as the Board of Directors deems appropriate. The Corporation may, by action of its Board of Directors, authorize one or more executive officers to grant rights for the advancement of expenses to employees and agents of the Corporation on such terms and conditions as such officers deem appropriate.

Section 5.03. Right of Indemnitee to Bring Suit. If a claim under Section 5.01 is not paid in full by the Corporation within sixty (60) calendar days after a written claim has been received by the Corporation, except in the case of a claim for an advancement of expenses under Section 5.02 in which case the applicable period shall be thirty (30) calendar days, the indemnitee may at any time thereafter bring suit against the Corporation to recover the unpaid amount of the claim. If the indemnitee is successful in whole or in part in any such suit, the indemnitee shall also be entitled to be paid the expense of prosecuting or defending such suit.

Section 5.04. Nonexclusivity of Rights. (a) The rights to indemnification and to the advancement of expenses conferred in this Article shall not be exclusive of any other right which any person may have or hereafter acquire under any statute, provisions of the Certificate of Incorporation, Bylaw, agreement, vote of stockholders or disinterested directors, or otherwise. Notwithstanding any amendment to or repeal of this Article, any indemnitee shall be entitled to indemnification in accordance with the provisions hereof with respect to any acts or omissions of such indemnitee occurring prior to such amendment or repeal. (b) The Corporation may maintain insurance, at its expense, to protect itself and any past or present director, officer, employee, or agent of the Corporation or another corporation, partnership, joint venture, trust, or other enterprise against any expense, liability, or loss, whether or not the Corporation would have the power to indemnify such person against such expense, liability, or loss under the Delaware General Corporation Law. The Corporation may enter into contracts with any indemnitee in furtherance of the provisions of this Article and may create a trust fund, grant a security interest or use other means (including, without limitation, a letter of credit) to ensure the payment of such amounts as may be necessary to effect indemnification as provided in this Article. (c) The Corporation may without reference to Sections 5.01 through 5.04 (a) and (b) hereof, pay the expenses, including attorneys fees, incurred by any director, officer, employee or

agent of the Corporation who is subpoenaed, interviewed or deposed as a witness or otherwise incurs expenses in connection with any civil, arbitration, criminal, or administrative proceeding or governmental or internal investigation to which the Corporation is a party, target, or potentially a party or target, or of any such individual who appears as a witness at any trial, proceeding or hearing to which the Corporation is a party, if the Corporation determines that such payments will benefit the Corporation and if, at the time such expenses are incurred by such individual and paid by the Corporation, such individual is not a party, and is not threatened to be made a party, to such proceeding or investigation.

ARTICLE VI

STOCK

Section 6.01. Certificates. Except as otherwise provided by law, each stockholder shall be entitled to a certificate or certificates which shall represent and certify the number and class (and series, if appropriate) of shares of stock owned by him in the Corporation. Each certificate shall be signed in the name of the Corporation by the Chairman of the Board, or the President, or a Vice President, together with the Secretary, or an Assistant Secretary, or the Treasurer or Assistant Treasurer. Any or all of the signatures on any certificate may be facsimile. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the Corporation with the same effect as if such person were an officer, transfer agent or registrar at the date of issue.

Section 6.02. Transfer of Shares. Shares of stock shall be transferable on the books of the Corporation only by the holder thereof, in person or by his duly authorized attorney, upon the surrender of the certificate representing the shares to be transferred, properly endorsed, to the Corporation's registrar if the Corporation has a registrar. The Board of Directors shall have power and authority to make such other rules and regulations concerning the issue, transfer and registration of certificates of the Corporation's stock as it may deem expedient.

Section 6.03. Transfer Agents and Registrars. The Corporation may have one or more transfer agents and one or more registrars of its stock whose respective duties the Board of Directors or the Secretary may, from time to time, define. No certificate of stock shall be valid until countersigned by a transfer agent, if the Corporation has a transfer agent, or until registered by a registrar, if the Corporation has a registrar. The duties of transfer agent and registrar may be combined.

Section 6.04. Stock Ledgers. Original or duplicate stock ledgers, containing the names and addresses of the stockholders of the Corporation and the number of shares of each class of stock held by them, shall be kept at the principal executive office of the Corporation or at the office of its transfer agent or registrar.

Section 6.05. Record Dates. The Board of Directors shall fix, in advance, a date as the record date for the purpose of determining stockholders entitled to notice of, or to vote at, any meeting of stockholders or any adjournment thereof, or stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock, or in order to make a determination of stockholders for any other proper purpose. Such date in any case shall be not more than sixty (60) days, and in case of a meeting of stockholders, not less than ten (10) days, prior to the date on which the particular action, requiring such determination of stockholders is to be taken. Only those stockholders of record on the date so fixed shall be entitled to any of the foregoing rights, notwithstanding the transfer of any such stock on the books of the Corporation after any such record date fixed by the Board of Directors.

Section 6.06. New Certificates. In case any certificate of stock is lost, stolen, mutilated or destroyed, the Board of Directors may authorize the issuance of a new certificate in place thereof upon such terms and conditions as it may deem advisable; or the Board of Directors may delegate such power to any officer or officers or agents of the Corporation; but the Board of Directors or such officer or officers or agents, in their discretion, may refuse to issue such a new certificate unless the Corporation is ordered to do so by a court of competent jurisdiction.

ARTICLE VII

RESTRICTIONS ON SECURITIES REPURCHASES

Section 7.01. Restrictions on Securities Repurchases.

1. Vote Required for Certain Acquisition of Securities. Except as set forth in Subsection 2 of this Section 7.01, in addition to any affirmative vote of stockholders required by any provision of law, the Certificate of Incorporation or Bylaws of this Corporation, or any policy adopted by the Board of Directors, neither the Corporation nor any Subsidiary shall knowingly effect any direct or indirect purchase or other acquisition of any equity security of a class of securities which is registered pursuant to Section 12 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), issued by the Corporation at a price which is in excess of the highest Market Price of such equity security on the largest principal national securities exchange in the United States on which such security is listed for trading on the date that the understanding to effect such transaction is entered into by the Corporation (whether or not such transaction is concluded or a written agreement relating to such transaction is executed on such date, and such date to be conclusively established by determination of the Board of Directors), from any Interested Person, without the affirmative vote of the holders of the Voting Shares representing at least a majority of the aggregate voting power of all outstanding voting shares, excluding Voting Shares beneficially owned by such Interested Person, voting together as a single class. Such affirmative vote shall be required notwithstanding the fact that no vote may be required, or that a lesser percentage may be specified, by law or any agreement with any national securities exchange, or otherwise.

2. When a Vote is Not Required. The provisions of Subsection 1 of this Section 7.01 shall not be applicable with respect to:

a. any purchase, acquisition, redemption or exchange of such equity securities, the purchase, acquisition, redemption or exchange of which is provided for in the Corporation's Certificate of Incorporation;

b. any purchase or other acquisition of equity securities made as part of a tender or exchange offer by the Corporation to purchase securities of the same class made on the same terms to all holders of such securities and complying with the applicable requirements of the Exchange Act of 1934, as amended and the rules and regulations thereunder (or any successor provisions to such Act, rules or regulations);

c. any purchase or acquisition of equity securities made pursuant to an open market purchase program which has been approved by the Board of Directors.

3. Certain Definitions. For the purpose of this Section:

a. "Affiliate" and "Associate" shall have their respective meanings ascribed to such terms in Rule 12b-2 of the General Rules and Regulations under the Exchange Act, as in effect on January 1, 2001.

b. "Beneficial Owner" and "Beneficial Ownership" shall have the meanings ascribed to such terms in Rule 13d-3 and Rule 13d-5 of the General Rules and Regulations under the Exchange Act, as in effect on January 1, 2001.

c. "Interested person" shall mean any person (other than the Corporation or any subsidiary) that is the direct or indirect Beneficial Owner of five percent (5%) or more of the aggregate voting power of the Voting Shares, and any Affiliate or Associate of any such person. For the purpose of determining whether a person is an Interested Person, the outstanding Voting Shares include unissued shares of voting stock of the Corporation of which the Interested Person is the Beneficial Owner, but shall not include any other shares of voting stock of the Corporation which may be issuable pursuant to any agreement, arrangement or understanding, or upon exercise or conversion of rights, warrants or options, or otherwise to any person who is not the Interested Person.

d. "Market Price" of shares of the class of equity security of the Corporation on any day shall mean the highest sale price (regular way) of shares of such class of such equity security on such day, or, if that day is not a trading day, on the trading day immediately preceding such day, on the largest principal national securities exchange on which such class of stock is then listed or admitted to trading, or if not listed or admitted to trading on any national securities exchange, then the highest reported sale price for such shares in the over-the-counter market as reported on the NASDAQ National Market System, or if such sale price shall not be reported thereon, the highest bid price so reported, or, of such price shall not be reported thereon, as the same shall be reported by the National Quotation Bureau, Incorporated, or if the price is not determinable as set forth above, as determined in good faith by the Board of Directors.

e. "Person" shall mean any individual, partnership, firm, corporation, association, trust, unincorporated organization or other entity, as well as any syndicate or group deemed to be a person pursuant to Section 13(d)(3) of the Exchange Act, as in effect on January 1, 2001.

f. "Subsidiary" shall mean any company or entity of which the Corporation owns, directly or indirectly, (i) a majority of the outstanding shares of equity securities, or (ii) shares having a majority of the voting power represented by all of the outstanding voting stock of such company entitled to vote generally in the election of directors. For the purpose of determining whether a company is a Subsidiary, the outstanding voting stock and shares of equity securities thereof shall include unissued shares of which the Corporation is the beneficial owner but, except for the purpose of determining whether a company is a Subsidiary for the purpose of Subsection 3(c) hereof, shall not include any shares which may be issuable pursuant to any agreement, arrangement, or understanding, or upon the exercise of conversion rights, warrants or options, or otherwise to any Person who is not the Corporation.

g. "Voting shares" shall mean the outstanding shares of capital stock of the Corporation entitled to vote generally in the election of directors.

ARTICLE VIII

SUNDRY PROVISIONS

Section 8.01. Fiscal Year. The fiscal year of the Corporation shall end on the 31st day of December of each year.

Section 8.02. Seal. The seal of the Corporation shall bear the name of the Corporation and the words "Delaware" and "Incorporated January 16, 2001."

Section 8.03. Voting of Stock in Other Corporations. Any shares of stock in other corporations or associations, which may from time to time be held by the Corporation, may be represented and voted at any of the stockholders' meetings thereof by the Chief Executive Officer or his designee. The Board of Directors, however, may by resolution appoint some other person or persons to vote such shares, in which case such person or persons shall be entitled to vote such shares upon the production of a certified copy of such resolution.

Section 8.04. Amendments. These Bylaws may be adopted, repealed, rescinded, altered or amended only as provided in Articles Fifth and Sixth of the Certificate.

February 19, 2003

SUPPLEMENTAL INDENTURE

THIS SUPPLEMENTAL INDENTURE (this "Supplemental Indenture") dated as of December 20, 2002, is by and among Litton Industries, Inc., a Delaware corporation ("Litton"), The Bank of New York, a New York banking corporation, as trustee ("Trustee"), Northrop Grumman Corporation, a Delaware corporation, ("NGC"), and Northrop Grumman Systems Corporation, a Delaware corporation, ("NGSC"). Capitalized terms used but not defined herein shall have the meanings assigned to such terms in the Senior Indenture (as defined below).

WHEREAS, Litton and the Trustee are parties to that certain Indenture dated as of April 13, 1998 between Litton and the Trustee (as supplemented and/or amended to date, the "Indenture"), providing for the issuance from time to time of Litton's unsecured debentures, notes or other evidences of indebtedness to be issued in one or more series as might be determined by Litton under the Indenture;

WHEREAS, Litton has issued its 6.05% Senior Notes due 2003, 6.75% Senior Debentures due 2018 and its 8.00% Senior Notes due 2009 pursuant to the terms of the Indenture (the "Securities");

WHEREAS, NGSC and Litton are each wholly-owned subsidiaries of NGC;

WHEREAS, NGC desires to simplify its organizational structure by merging Litton into NGSC pursuant to Section 251 of the Delaware General Corporation Law (the "Merger") on or about 12:01 a.m. on January 1, 2003;

WHEREAS, NGC has guaranteed the obligations of Litton under the Indenture and desires that such guarantee continue following the merger of Litton into NGSC;

NOW, THEREFORE, NGC, NGSC and Litton covenant and agree to and with the Trustee, for the equal and proportionate benefit of all present and future Holders of the Securities, as follows:

1. Assumption of Obligations by NGSC.

NGSC hereby agrees that upon consummation of the Merger of Litton into NGSC, NGSC shall assume all of the obligations of Litton under the Securities and the Indenture and the performance of every covenant of the Indenture on the part of Litton to be performed or observed.

2. Acknowledgement of Trustee.

The Trustee hereby acknowledges receipt of the following documents pursuant to the provisions of the Indenture:

- (a) An Officer's Certificate of Litton stating that, among other things, to the knowledge of the signing officers, that all conditions precedent provided for in the Senior Indenture relating to the Merger have been complied with.

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- (b) A Certificate of Board Resolution certifying the adoption of certain resolutions by the Boards of Directors of Litton and NGSC.
- (c) An Opinion of Counsel specifying, among other things, that the Merger and this Supplemental Indenture comply with Section V of the Indenture and that all conditions precedent provided for in the Indenture relating to the Merger and the execution and delivery of this Supplemental Indenture have been complied with.
3. Incorporation by Reference.
This Supplemental Indenture shall be construed as supplemental to the Indenture and shall form a part thereof. The Indenture is hereby incorporated by reference herein and is hereby ratified, approved, and confirmed.
4. Effect of Headings.
The headings herein are for convenience and reference only, are not to be considered a part hereof, and shall not affect the construction hereof.
5. Successors and Assigns.
All covenants and agreements in this Supplemental Indenture by NGC, NGSC and Litton shall bind their successors and assigns, whether so expressed or not.
6. Separability Clause.
In case any provision in this Supplemental Indenture shall be invalid, illegal or unenforceable, the validity, legality, and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.
7. Governing Law.
This Supplemental Indenture shall be governed by, and construed in accordance with, the laws of the State of New York, without regard to any otherwise governing principles of conflicts of law.
8. Additional Supplemental Indentures.
Nothing contained herein shall or impair the rights of the parties to enter into one or more additional supplemental indentures in the manner provided in the Indenture.
9. Counterparts.
This Supplemental Indenture may be executed in any number of counterparts, each of which shall be an original, but such counterparts shall together constitute but one and the same instrument.
10. Trustee.
The Trustee makes no representations as to the validity or sufficiency of this Supplemental Indenture. The recitals and statements herein are deemed to be those of Litton, NGC and NGSC and not of the Trustee.

IN WITNESS WHEREOF, the parties hereto have caused this Supplemental Indenture to be duly executed as of December 20, 2002.

LITTON INDUSTRIES, INC.

/s/ Albert F. Myers

By: Albert F. Myers
Its: Treasurer

Attest:

/s/ John H. Mullan

By: John H. Mullan
Its: Secretary

THE BANK OF NEW YORK, as Trustee

/s/ Stacey B. Poindexter

By: Stacey B. Poindexter
Its: Assistant Treasurer

NORTHROP GRUMMAN CORPORATION

/s/ Albert F. Myers

By: Albert F. Myers
Its: Corporate Vice President and Treasurer:

Attest:

/s/ John H. Mullan

By: John H. Mullan
Its: Corporate Vice President and Secretary

/s/ Albert F. Myers

By: Albert F. Myers
Its: Treasurer

Attest:

/s/ John H. Mullan

By: John H. Mullan
Its: Secretary

SUPPLEMENTAL INDENTURE

THIS SUPPLEMENTAL INDENTURE (this "Supplemental Indenture") dated as of December 20, 2002, is by and among Litton Industries, Inc., a Delaware corporation ("Litton"), The Bank of New York, a New York banking corporation, as trustee ("Trustee"), Northrop Grumman Corporation, a Delaware corporation, ("NGC"), and Northrop Grumman Systems Corporation, a Delaware corporation, ("NGSC"). Capitalized terms used but not defined herein shall have the meanings assigned to such terms in the Senior Indenture (as defined below).

WHEREAS, Litton and the Trustee are parties to that certain Senior Indenture dated as of December 15, 1991 between Litton and the Trustee (as supplemented and/or amended to date, the "Senior Indenture"), providing for the issuance from time to time of Litton's unsecured debentures, notes or other evidences of indebtedness to be issued in one or more series as might be determined by Litton under the Senior Indenture;

WHEREAS, Litton has issued its 7.75% Debentures due 2026 and its 6.98% Debentures due 2036 pursuant to the terms of the Senior Indenture (the "Securities");

WHEREAS, NGSC and Litton are each wholly-owned subsidiaries of NGC;

WHEREAS, NGC desires to simplify its organizational structure by merging Litton into NGC pursuant to Section 251 of the Delaware General Corporation Law (the "Merger") on or about 12:01 a.m. on January 1, 2003;

WHEREAS, NGC has guaranteed the obligations of Litton under the Senior Indenture and desires that such guarantee continue following the merger of Litton into NGSC;

NOW, THEREFORE, NGC, NGSC and Litton covenant and agree to and with the Trustee, for the equal and proportionate benefit of all present and future Holders of the Securities, as follows:

1. Assumption of Obligations by NGSC and No Event of Default.

NGSC hereby agrees that upon consummation of the Merger, it shall assume all of the obligations of Litton under the Securities and the Senior Indenture and the performance of every covenant of the Senior Indenture on the part of Litton to be performed or observed.

2. Acknowledgement of Trustee.

The Trustee hereby acknowledges receipt of the following documents pursuant to the provisions of the Senior Indenture:

- (a) An Officer's Certificate of Litton stating that, among other things, to the knowledge of the signing officers, all conditions precedent provided for in the

Senior Indenture relating to the Merger and the execution and delivery of this Supplemental Indenture have been complied with.

- (b) A Certificate of Board Resolution certifying the adoption of certain resolutions by the Boards of Directors of Litton and NGSC.
- (c) An Opinion of Counsel specifying, among other things, that the Merger and this Supplemental Indenture comply with Article Eight of the Senior Indenture and that all conditions precedent provided for in the Senior Indenture relating to the Merger and the execution and delivery of this Supplemental Indenture have been complied with.

3. Incorporation by Reference.

This Supplemental Indenture shall be construed as supplemental to the Senior Indenture and shall form a part thereof. The Senior Indenture is hereby incorporated by reference herein and is hereby ratified, approved, and confirmed.

4. Effect of Headings.

The headings herein are for convenience and reference only, are not to be considered a part hereof, and shall not affect the construction hereof.

5. Successors and Assigns.

All covenants and agreements in this Supplemental Indenture by NGC, NGSC and Litton shall bind their successors and assigns, whether so expressed or not.

6. Separability Clause.

In case any provision in this Supplemental Indenture shall be invalid, illegal or unenforceable, the validity, legality, and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

7. Governing Law.

This Supplemental Indenture shall be governed by, and construed in accordance with, the laws of the State of New York, without regard to any otherwise governing principles of conflicts of law.

8. Additional Supplemental Indentures.

Nothing contained herein shall or impair the rights of the parties to enter into one or more additional supplemental indentures in the manner provided in the Senior Indenture.

9. Counterparts.

This Supplemental Indenture may be executed in any number of counterparts, each of which shall be an original, but such counterparts shall together constitute but one and the same instrument.

10. Trustee

The Trustee makes no representations as to the validity or sufficiency of this Supplemental Indenture. The recitals and statements herein are deemed to be those of Litton, NGC and NGSC and not of the Trustee.

IN WITNESS WHEREOF, the parties hereto have caused this Supplemental Indenture to be duly executed as of December 20, 2002.

LITTON INDUSTRIES, INC.

/s/ Albert F. Myers

By: Albert F. Myers
Its: Treasurer

Attest:

/s/ John H. Mullan

By: John H. Mullan
Its: Secretary

THE BANK OF NEW YORK, as Trustee

/s/ Stacey B. Poindexter

By: Stacey B. Poindexter
Its: Assistant Treasurer

NORTHROP GRUMMAN CORPORATION

/s/ Albert F. Myers

By: Albert F. Myers
Its: Corporate Vice President and Treasurer:

Attest:

/s/ John H. Mullan

By: John H. Mullan
Its: Corporate Vice President and Secretary

/s/ Albert F. Myers

By: Albert F. Myers
Its: Treasurer

Attest:

/s/ John H. Mullan

By: John H. Mullan
Its: Secretary

NORTHROP GRUMMAN CORPORATION
NON-EMPLOYEE DIRECTORS EQUITY PARTICIPATION PLAN
As Amended December 18, 2002

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ARTICLE 1

Introduction

Section 1.01. Purpose. The purposes of the Plan are to enable the Company to attract and retain outstanding individuals to serve as non-employee directors of the Company, and to further align the interests of non-employee directors with the interests of the other shareholders of the Company by making the amount of the compensation of non-employee directors dependent in part on the value and appreciation over time of the Common Stock of the Company.

Section 1.02. Effective Date. This restatement of the Plan is effective as of December 18, 2002. The Plan was originally effective March 19, 1997.

ARTICLE 2

Definitions

The following terms when used and capitalized in the Plan will have the following meanings:

Section 2.01. Accrual. Any dollar amounts credited to the Equity Participation Account, including any Special Accrual, Annual Accruals, Additional Accruals and Dividend Equivalents.

Section 2.02. Annual Accrual. This is defined in Section 6.02.

Section 2.03. Annual Retainer Fee. That fixed amount paid to Directors exclusive of travel expenses, meeting fees, committee fees, or any other similar remuneration.

Section 2.04. Board. The Board of Directors of the Company.

Section 2.05. Change in Control. This is defined in Sections A.02-A.04.

Section 2.06. Common Stock. The Common Stock of the Company.

Section 2.07. Company. Northrop Grumman Corporation.

Section 2.08. Conversion Date. The date the Outside Director's service as a member of the Board terminates for any reason, including death.

Section 2.09. Debilitating Illness. Any physical or mental condition which renders an individual unable to carry on the normal duties of his or her active business career.

Section 2.10. Director. A member of the Board.

Section 2.11. Dividend Equivalent. An amount equal to the cash dividend per share which is payable on any dividend payment date for the Common Stock.

Section 2.12. Electing Outside Director. An Outside Director participating in the Retirement Plan who, at the inception of this Plan, elected to terminate participation in the Retirement Plan and to participate in this Plan instead.

Section 2.13. Equity Participation Account. An unfunded bookkeeping account maintained by the Company for a Participant to which amounts are credited under the Plan.

Section 2.14. Fair Market Value Of The Common Stock. This is determined as follows:

(a) for relevant Accruals and Conversion Dates that occur on or before February 18, 1998, the closing price of a share of Common Stock as reported on the composite tape for securities listed on the New York Stock Exchange (the "Exchange") for the date in question. If no sales of Common

Stock were made on the Exchange on that date, the closing price of a share of Common Stock as reported on said composite tape for the preceding day on which sales of Common Stock were made on the Exchange shall be substituted; and

(b) for relevant Accruals and Conversion Dates that occur after February 18, 1998, the average of the daily closing prices of a share of Common Stock as reported on the composite tape for securities listed on the Exchange for the 20 trading days (counting as trading days only days on which sales of Common Stock are reported) ending with the date in question.

Section 2.15. Outside Director. A Director who is not a common law employee of the Company.

Section 2.16. Participant. Each current or former Outside Director eligible for benefits under the Plan who has not yet received a complete distribution of his or her benefits under the Plan, other than a former Outside Director who terminated service with the Board without any entitlement to benefits under Sections 4.01-4.03.

Section 2.17. Plan. The Northrop Grumman Corporation Non-Employee Directors Equity Participation Plan.

Section 2.18. Retired Outside Director. An Outside Director whose service as a member of the Board for any reason has terminated and who is entitled to receive a distribution.

Section 2.19. Retirement Plan. The Northrop Grumman Corporation Board of Directors Retirement Plan.

Section 2.20. Special Accrual. This is defined in Section 6.03.

Section 2.21. Surviving Spouse. A person who:

(a) was legally married to the Participant for at least one year prior to the date the Participant ceases to serve on the Board (including death while serving on the Board), and

(b) outlives the deceased Participant by at least 30 calendar days, to the extent he or she is not prevented from receiving benefits under the Plan by a court order or property settlement at the time payments would otherwise be due.

Section 2.22. Total Disability. Total disability as defined in the Northrop Grumman Long-Term Disability Insurance Plan.

Section 2.23. Unit. An equivalent to a share of Common Stock, which is the denomination into which all dollar Accruals to any Equity Participation Account are to be converted.

Section 2.24. Year Of Service. A 12-consecutive-month period of service as an Outside Director.

ARTICLE 3

Participation

Section 3.01. In General. A Director is eligible to participate in the Plan if he or she:

- (a) becomes an Outside Director after March 19, 1997, or
- (b) is an Electing Outside Director.

ARTICLE 4

Entitlement To Benefits

Section 4.01. Normal Benefit. Each Participant who terminates service on the Board will be entitled to receive a benefit under Section 5.01 if he or she satisfies (a) or (b):

- (a) He or she completes at least three consecutive Years of Service.
- (b) He or she retires from the Board as a result of Total Disability or a Debilitating Illness.

Notwithstanding any provision of the Plan to the contrary, a Participant that terminates service on the Board without satisfying either (a) or (b) above will be entitled to receive a benefit under Section 5.01 if:

(i) He or she terminated service on the Board for the sole purpose of pursuing or accepting a position (whether appointed, elected, or otherwise) with a federal, state, or local governmental entity or for some other purpose that is determined by the Company to constitute public service; and

(ii) He or she recommences service on the Board as an Outside Director within a reasonably practicable period following the termination of, or termination of the pursuit of, the governmental or public service position and the Participant's total service before and after the termination and

recommencement of service on the Board, when aggregated, equals at least three Years of Service.

Section 4.02. Partial Benefit. A Participant will be entitled to receive a partial benefit under Section 5.02 if:

- (a) he or she terminates service on the Board prior to completing three consecutive Years of Service, and
- (b) his or her termination occurs because he or she will have attained age 70 prior to the Annual Meeting of Shareholders.

Section 4.03. Change in Control Benefit. A Participant who is not entitled to benefits under Section 4.01 will be entitled to receive a Change in Control benefit under Section 5.03 if the conditions described in Appendix A are met.

Section 4.04. Better-Of Benefit. A Participant entitled to a benefit under Sections 4.01-4.03 will be entitled to “better-of” benefits under Section 5.04 if he or she:

- (a) was a Participant in the Plan and a current Outside Director as of March 1, 1998, and
- (b) terminates service on account of death, Debilitating Illness or Total Disability.

Section 4.05. Surviving Spouse Benefit. Upon a Participant's death, his or her Surviving Spouse, if any, will be eligible to receive the remainder of the payments due the Participant. If there is no Surviving Spouse, all payments will cease.

Section 4.06. Other Participants. No benefits will be paid with respect to a Participant who terminates service with the Board unless the eligibility conditions of Section 4.01, 4.02 or 4.03 are satisfied.

ARTICLE 5

Amount Of Benefit

Section 5.01. Normal Benefit Amount. The normal benefit amount is the full balance of the Participant's Equity Participation Account.

Section 5.02. Partial Benefit Amount. The partial benefit amount is the Participant's Equity Participation Account multiplied by a fraction.

(a) The numerator of the fraction is the number of the Participant's completed consecutive Years of Service and the denominator is three.

(b) For purposes of (a), completed Years of Service include completed months of service (rounded up to the nearest month) expressed as a fraction of a year to the nearest quarter.

Section 5.03. Change in Control Benefit Amount. The Change in Control benefit is equal to the full balance of the Participant's Equity Participation Account.

Section 5.04. Better-Of Benefit Amount. A Participant entitled to "better-of" benefits will have his or her benefits determined under this Section if that would result in greater benefits than those provided under Sections 5.01-5.03, as applicable.

-
- (a) The benefit under this Section equals the benefit the Participant would receive (if any) if he or she were a participant under the Retirement Plan.
- (b) If a Participant would not be entitled to any benefit under the Retirement Plan (e.g., because he or she failed to meet the five years of service requirement), this Section will not provide any alternative benefits.
- (c) The Retirement Plan benefit will be considered greater for purposes of this Section if the present value of the projected Retirement Plan benefit is greater than the Participant's balance in his or her Equity Participation Account at the Conversion Date.
- (d) For purposes of determining the present value of the Retirement Plan benefit, the following assumptions will be used:
- (1) An interest rate assumption of 6.5% will be used.
 - (2) No mortality factor will be applied. The Participant will be assumed to get all payments before dying.
 - (3) The Annual Retainer Fee used by the Retirement Plan will be assumed to remain constant for all future years.

ARTICLE 6

Accounts

Section 6.01. Equity Participation Accounts. An Equity Participation Account will be maintained for each Participant having an amount to his or her credit under the Plan. The account will keep track of Accruals and payments for a Participant's benefit.

Section 6.02. Annual Accruals. On each March 19, the Company will credit an amount equal to 50% of the Annual Retainer Fee in effect on that date (an "Annual Accrual") to the Equity Participation Account of each Participant who provided a full Year of Service in the immediately preceding 12-month period.

(a) No accrual will be made for any Outside Director who has provided at least ten consecutive Years of Service.

(b) Participants who have provided less than a full Year of Service for the immediately preceding 12-month period will receive a pro rated portion of the normal Annual Accrual based on their months of service for the period (rounded up to the nearest month) divided by 12.

Section 6.03. Special Accruals. As of March 19, 1997, the Company credited to the Equity Participation Account of each Electing Outside Director a special, one-time credit (a "Special Accrual"). The dollar amount

of the Special Accrual was equal to the present value (calculated at a 6.5% discount rate) of the accrued benefits of an Electing Outside Director under the Retirement Plan.

Section 6.04. Conversion Of Accruals Into Units. Each Accrual will be converted into Units by dividing the dollar amount of the Accrual by the Fair Market Value of the Common Stock on the day the Accrual is made. Units will be calculated and recorded in Equity Participation Accounts rounded to the third decimal place.

Section 6.05. Dividend Equivalents. On each date on which cash dividends are paid on shares of the Common Stock, Equity Participation Accounts will be credited with one Dividend Equivalent for each Unit credited to such Account.

(a) Each fraction of a Unit will be credited with a like fraction of a Dividend Equivalent on such date.

(b) Dividend Equivalents credited to each Equity Participation Account will be converted into Units by dividing the dollar amount of the Dividend Equivalent by the Fair Market Value of the Common Stock on the date the Dividend Equivalent is accrued.

Section 6.06. Change in the Common Stock. In the event of any stock dividend, stock split, recapitalization, distribution of property, merger, split-

up, spin-off, or other change affecting or distribution with respect to the Common Stock of the Company (other than cash dividends), the Units in each Account will be adjusted in the same manner and proportion as the change to the Common Stock.

ARTICLE 7

Distributions

Section 7.01. In General.

- (a) All distributions of Equity Participation Accounts to Participants will be made in cash.
- (b) The Equity Participation Account of each Retired Outside Director will be paid in a number of annual installments equal to the number of full Years of Service for which benefits have been accrued (not to exceed ten), subject to (d).
- (c) Payments will commence on the 20th business day following the Conversion Date for such Equity Participation Account, and then on each anniversary of the Conversion Date.
- (d) All payments will cease no later than:
 - (1) upon the death of the Surviving Spouse, or
 - (2) if there is no Surviving Spouse, upon the death of the Participant.

Section 7.02. Amount of Installments. Each installment will be in an amount equal to the total dollar value of the Equity Participation Account as of the Conversion Date or the applicable anniversary date of the Conversion

Date to which the payment relates divided by the number of installments remaining to be paid.

Section 7.03. Conversion of Units into Dollars. The total dollar value of the Equity Participation Account will be determined by multiplying the number of Units then in the account by the Fair Market Value of the Common Stock on the Conversion Date or any applicable anniversary. The number of Units in the account will be reduced by the Unit equivalent of each payment.

Section 7.04. T-Bond Election: If a Participant makes an election under this section, the amount of each payment will be determined under this section rather than under Section 7.03. The timing and number of payments will still be determined under Section 7.01.

(a) Account Balance: If a Participant makes an election under this section, his or her Equity Participation Account will be converted to a deemed principal amount at the Conversion Date which will earn deemed interest on the remaining balance. The Account will be increased for deemed interest and reduced for payments made. The Account will no longer be based on the value of the Common Stock.

(b) Initial Principal Amount: The initial principal amount for any Participant will be determined on the Conversion Date by multiplying the

number of Units in the Participant's Equity Participation Account by the Fair Market Value of the Common Stock on the Conversion Date.

(c) Initial Payment: The initial payment will be equal to the Initial Principal Amount divided by the total number of installments to be paid.

(d) Later Payments: Each annual installment after the Initial Payment will be equal to the remaining Account balance at the applicable anniversary of the Conversion Date divided by the number of remaining installments.

(e) Interest Credits: Interest will be credited on the amount remaining after the Initial Payment and future account balances at the rate specified in (f), compounded daily.

(f) T-Bond Rate: The interest rate will be equal to the average interest rate on 10-year U.S. Treasury bonds for the 52 weeks ending immediately prior to the applicable anniversary of the Conversion Date.

(g) Elections: An election under this subsection may be made only by delivering a written election of this T-Bond option to the Secretary of Northrop Grumman Corporation (or its successor), on a form specified by the Secretary:

- (1) no later than March 1, 1998, in the case of Participants who were Outside Directors as of February 18, 1998, or

(2) no later than 30 days after becoming an Outside Director with respect to Participants who become Outside Directors after March 1, 1998.

After the relevant date in (1) or (2), an election (or failure to make an election) under this Section will become irrevocable.

Section 7.05. Payment to a Trust. The Participant may elect that payments under this Article be made to a trust. Any payments due will be made to the trust as long as the election by the Participant remains in effect.

ARTICLE 8

Miscellaneous Provisions

Section 8.01. Amendment And Termination. The Board may at any time, or from time to time, amend or terminate the Plan.

(a) No such amendment or termination may reduce Plan benefits which accrued prior to the amendment or termination without the prior written consent of each person entitled to receive benefits under the Plan who is adversely affected by such action.

(b) The amendment and termination power of this Section is also subject to the provisions of Section A.06.

Section 8.02. Plan Unfunded. The Plan is unfunded. Benefits under the Plan represent only a general contractual conditional obligation of the Company to pay in accordance with the provisions of the Plan.

Section 8.03. No Assignments. All payments under the Plan will be made only to the Participant, to his or her Surviving Spouse, or to any trust designated by the Participant under Section 7.05. The right to receive payments under the Plan may not otherwise be assigned or transferred by, and is not subject to the claims of creditors of, any Participant or his or her Surviving Spouse.

Section 8.04. No Double Payment. This Section applies if, despite the prior Section, with respect to any Participant (or his or her Surviving Spouse), the Company is required to make payments under this Plan to a person or entity other than the proper payees described in the Plan. In such a case, any amounts due the Participant (or his or her Surviving Spouse) under this Plan will be reduced by the actuarial value of the payments required to be made to such other person or entity.

(a) Actuarial value will be determined using the following actuarial assumptions specified by Treas. Reg. § 1.417(e)-1(d)(2)-(4) (or any successor regulation). The stability period will be one calendar month and the lookback month will be the second calendar month preceding the stability period.

(b) In dividing a Participant's benefit between the Participant and another person or entity, consistent actuarial assumptions and methodologies will be used so that there is no increased cost to the Company on an actuarial basis.

Section 8.05. No Other Rights. Neither the establishment of the Plan, nor any action taken under it, will in any way obligate the Company to nominate an Outside Director for re-election or continue to retain an

Outside Director on the Board or confer upon any Outside Director any other rights with respect to the Company.

Section 8.06. Successors of the Company. The Plan will be binding upon any successor to the Company, whether by merger, acquisition, consolidation or otherwise.

Section 8.07. Law Governing. The Plan will be governed by the laws of the State of California.

Section 8.08. Actions By Company. Any powers exercisable by the Company under the Plan will be utilized by written resolution adopted by the Board or its delegate. The Board may by written resolution delegate any of the Company's powers under the Plan and any such delegations may provide for subdelegations, also by written resolution.

Section 8.09. Plan Representatives. Those authorized to act as Plan representatives will be designated in writing by the Board or its delegate.

APPENDIX A

Change In Control Benefits

Section A.01. In General. This Appendix provides for accelerated vesting of benefits in the event of a Change of Control.

Section A.02. Change In Control. Except as provided in Sections A.03 and A.04, a Change in Control occurs under any of the following circumstances:

(a) Any “person” as such term is used in Sections 13(d)(3) and 14(d)(2) of the Securities Exchange Act of 1934, as amended (“Exchange Act”) or any successor provisions, other than a trustee or other fiduciary holding securities under any other employee benefit plan of the Company or an Affiliate, becomes the “beneficial owner” (as defined in Rule 13d-3 under the Exchange Act or any successor provisions), directly or indirectly, of securities of the Company representing fifteen percent (15%) or more of the combined voting power of the Company’s then outstanding securities (unless the event causing the fifteen percent (15%) threshold to be crossed is an acquisition of securities directly from the Company).

(b) During any period of two consecutive years, “Continuing Directors”, as described in (2), cease for any reason to constitute at least a majority of the Board.

(1) The period of two consecutive years does not include any period prior to the adoption of this Plan on March 19, 1997.

(2) The term "Continuing Directors", for purposes of this Appendix, means:

(A) individuals who at the beginning of the two-consecutive-year period constitute the Board, and

(B) any new director whose nomination by the Board or election by the Company's shareholders was approved by a vote of at least two-thirds of the directors then still in office who either were directors at the beginning of the two-consecutive-year period or whose election or nomination for election was previously so approved. This clause (B) does not include a director designated by a person who has entered into an agreement with the Company to effect a transaction described in (a) or (c) of this Section.

(c) The shareholders of the Company approve a merger or consolidation of the Company with any other corporation, but only if the transaction closes or is otherwise effectuated. This subsection (c) does not cover a merger or consolidation which would result in the voting securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting

securities of the surviving entity) at least 80% of the combined voting power of the voting securities of the Company or such surviving entity outstanding immediately after such merger or consolidation.

(d) The shareholders of the Company approve a plan of complete liquidation of the Company or an agreement for the sale or disposition of the Company or all or substantially all of the Company's assets, but only if the transaction closes or is otherwise effectuated.

Section A.03. Override by Board. Transactions described in the previous Section do not constitute Changes in Control if, immediately prior to the change in ownership, merger, consolidation, sale or other disposition, liquidation or change in the Board, the Board shall pass a resolution approved by a vote of the majority of the Continuing Directors to the effect that it has determined that such transaction does not constitute a Change in Control within the intention of this definition. In addition, if a Change in Control has occurred, no subsequent event shall result in another Change in Control.

Section A.04. February, 1998 Vote No Change in Control will be deemed to have occurred by virtue of the vote of shareholders on February 26, 1998 to merge with Lockheed Martin Corporation unless and until that merger closes.

Section A.05. Vesting at Change in Control. Any Participant serving as an Outside Director at the time of a Change in Control will immediately become entitled to Change in Control benefits under Section 5.03. Actual payment of benefits will not commence until termination of his or her service in accordance with Section 7.01.

Section A.06. Limitation on Amendment Authority. The Plan may not be amended, terminated, or otherwise modified or interpreted to eliminate, reduce or defer Change in Control benefits with respect to the circumstances described in Section A.02(c) or (d), between the date of the shareholder vote and the closing or other effectuation of the transaction. This Section is not intended to reduce the Board's authority under Section A.03.

TRANSITION AGREEMENT

This **TRANSITION AGREEMENT** (this "Agreement") is entered into as of February 19, 2003 by and between **NORTHROP GRUMMAN CORPORATION**, a Delaware corporation (the "Company"), and **KENT KRESA** ("Mr. Kresa").

RECITALS

WHEREAS, Mr. Kresa is currently employed by and is the Chairman of the Board of Directors (the "Board") and Chief Executive Officer of the Company;

WHEREAS, Mr. Kresa will attain age 65 in March 2003 and has determined to retire from employment with and as Chief Executive Officer of the Company as of April 1, 2003 pursuant to the Company's policy regarding the retirement of officers at age 65;

WHEREAS, following his retirement on April 1, Mr. Kresa will continue as a non-employee member of the Company's Board and as Chairman of the Board until the Board elects a different Chairman, which is not anticipated to occur any sooner than six months following Mr. Kresa's retirement from employment;

WHEREAS, the Company desires to have the continued benefit of Mr. Kresa's knowledge and expertise for a two-year period following the date that Mr. Kresa ceases to be Chairman of the Board and Mr. Kresa desires to provide such services as the Company may reasonably require during such period of time;

AGREEMENT

Mr. Kresa and the Company agree as follows:

I. ENGAGEMENT

Following his retirement from employment, Mr. Kresa shall continue to serve as a non-employee Chairman of the Board until the Board determines to elect a new Chairman. Mr. Kresa shall resign as Chairman of the Board, as a member of the Board, and as a member of any Board of Directors of any Company affiliate on which he may then serve, when a new Chairman of the Board is elected (such date is referred to as the "Consulting Period Commencement Date"). The Company hereby retains Mr. Kresa to provide such advice, and participate in such meetings and events for the Company's benefit, as may be requested by the Company during the "Consulting Period" described in Section IV.B. Mr. Kresa's principal point of contact at the Company with respect to the specific nature and scope of the services to be provided during the Consulting Period shall be the Company's Chief Executive Officer or his designee. Mr. Kresa shall provide reports of his activities as the Company may reasonably require from time to time. Notwithstanding anything else contained herein to the contrary, this Agreement shall be null and void in its entirety if Mr. Kresa either: (1) does not retire from employment with the Company and its affiliates on or about April 1, 2003; (2) does not execute and deliver to the Company upon or within the thirty day period following his retirement date a release substantially in the form of Attachment A hereto; or (3) revokes such release.

II. SPECIAL BENEFITS IN CONNECTION WITH MR. KRESA'S RETIREMENT.

A. Benefits Subject to Tax Gross-Up. Mr. Kresa (or, in the event of his death, his widow) shall be allowed to retain the personal computer, cell phone and similar electronic equipment provided to Mr. Kresa by the Company that he was using as of the date of his retirement. The Company will transfer to Mr. Kresa (or, in the event of his death at a time when he is married, his widow)

and/or permit him (or her) to retain the membership in the Los Angeles Country Club which is currently used by him. Until the earlier of Mr. Kresa's death or April 1, 2008, the Company shall provide Mr. Kresa with a suitable furnished office and all related reasonable office support (including reasonable office equipment and parking), reasonable information technology support, secretarial support, and substantially the same level of home security protection as is currently provided to Mr. Kresa by the Company.

In the event that Mr. Kresa (or, in the event of his death at a time when he is married, his widow) incurs any tax liability related to the benefits referred to in the preceding paragraph, the Company shall make an additional payment to Mr. Kresa (or his widow, as applicable) (a "gross-up payment") to put him (or her) in the same after-tax position as if such benefits were not taxable to Mr. Kresa (or his widow, as the case may be).

B. Pro-Rata ICP Payment. Pursuant to the retirement practices of the Company, Mr. Kresa shall be eligible to receive an annual bonus for 2003 under the Company's 2002 Incentive Compensation Plan. The amount of such bonus shall be calculated pursuant to the terms of the Incentive Compensation Plan in which Mr. Kresa currently participates multiplied by a fraction, the numerator of which is the number of days in 2003 that Mr. Kresa was employed by the Company prior to his retirement and the denominator of which is 365.

C. Equity and Incentive Plan Awards. Mr. Kresa's rights with respect to stock options, restricted stock rights ("RSRs"), and restricted stock performance rights ("RPSRs") previously granted by the Company shall be governed by the terms of the applicable grant agreements (as previously amended), the applicable stock incentive plan, and the guide to administration for the applicable stock incentive plan. Mr. Kresa shall not be entitled to any new equity or incentive plan award. By way of clarification to the existing terms of Mr. Kresa's awards, if a Change in Control (as such term is defined in the Special

Agreement) of the Company occurs after the date of this Agreement, the then-outstanding and previously unvested stock options and RSRs granted by the Company to Mr. Kresa shall thereupon become fully vested and the RPSR performance period will be prorated and grants will be made based upon Company performance at that time.

D. Benefits Not Subject to Tax Gross-up. The Company shall provide Mr. Kresa with the following benefits until the earlier of (1) Mr. Kresa's death, or (2) April 1, 2008:

- reimbursement of up to \$30,000 per year, in the aggregate, for Mr. Kresa's financial planning and income tax preparation expenses and club memberships; and
- reasonable access to Company aircraft for personal use, subject to availability and payment or reimbursement by Mr. Kresa at direct operating cost.

In the event that Mr. Kresa dies before April 1, 2008 and he is married at the time of his death, the Company shall continue to reimburse Mr. Kresa's widow for up to \$30,000 per year, in the aggregate (and after reducing any reimbursement obligation for the year of Mr. Kresa's death by the amount of any such expenses incurred by Mr. Kresa in that year and prior to his death that the Company is obligated to reimburse pursuant to the foregoing), for her financial planning and income tax preparation expenses and club memberships; provided that such reimbursement obligation shall terminate on the earlier of Mr. Kresa's widow's death or April 1, 2008.

In addition to the foregoing, at the time of his retirement Mr. Kresa may purchase the two Dawson paintings that are currently in his office for their fair market value.

E. Retirement and Other Benefits. Mr. Kresa's rights to receive benefits under retirement, deferred compensation, estate enhancement and

welfare plans and programs of Northrop Grumman will be determined in accordance with the existing terms of such plans and programs. These benefits include post-retirement medical coverage under the Special Officer Retiree Medical Plan .

III. COMPENSATION FOR SERVICES AS A DIRECTOR

As consideration for Mr. Kresa's continued services as Chairman of the Board, the Company shall pay Mr. Kresa a director's fee of \$164,500 for each full or partial month of Mr. Kresa's services as Chairman of the Board commencing with April 2003 and ending with the month in which Mr. Kresa ceases to be Chairman of the Board. Mr. Kresa shall have no right to any other compensation (including, without limitation, directors fees, stock options or other equity awards, or other compensation or benefits otherwise payable or to be paid to the other members of the Board) for his services as a non-employee Chairman and as a non-employee member of the Board for such period of time. However, Mr. Kresa will be reimbursed for expenses pursuant to Section V A of this Agreement.

IV. CONSULTING SERVICES

A. Place of Engagement. Mr. Kresa shall perform the services called for under this Agreement during the Consulting Period in Los Angeles, California and in such other places and at such times as the Company and Mr. Kresa may mutually agree.

B. Term of Consulting Period. This Consulting Period shall commence as of the Consulting Period Commencement Date and shall end on the second anniversary of the Consulting Period Commencement Date. The Consulting Period may be renewed or extended for such time as the Company and Mr. Kresa may agree upon in writing.

C. Consulting Fee. Mr. Kresa agrees to make himself available to perform services for the Company no less than three (3) days per month during the Consulting Period. The Company shall pay Mr. Kresa a fixed \$15,000 per full or partial month during the Consulting Period for such services. To the extent that Mr. Kresa performs services for the Company on more than (3) days in any month during the Consulting Period, the Company shall pay Mr. Kresa an additional amount equal to \$5,000 multiplied by the result of (A) the total number of full or partial days worked by Mr. Kresa in performing services for the Company during such month, less (B) three (3). Mr. Kresa shall, on a monthly basis, notify the Company in writing of his services performed for the Company in the preceding month in the event he performed services for the Company in such month on more than three (3) days. Any consulting fee due for a calendar month shall be paid by the Company promptly after the end of such month (or, in the case of any amount due for services in excess of the minimum three (3) day commitment, promptly after the earlier of the end of such month or the Company's receipt of a report from Mr. Kresa which notifies the Company of such services). Mr. Kresa acknowledges and agrees that by accepting these consulting payments he is certifying his compliance with the provisions of this Agreement.

V. EXPENSES; MISCELLANEOUS COMPENSATION PROVISIONS

A. Expenses. The Company shall reimburse Mr. Kresa for all reasonable and necessary business expenses, including first class airfare and accommodations, incurred by Mr. Kresa in connection with the rendering of services hereunder. Claims for expenses must be in accordance with the Company's established policies and limitations pertaining to allowable expenses and documented pursuant to the procedures applicable to the Company's officers. Mr. Kresa shall be entitled to reasonable and necessary use of Company aircraft in connection with the rendering of services hereunder, subject

to availability and the Company's aircraft policies in effect from time to time applicable to the Company's officers.

B. Full Extent Of Compensation. Unless otherwise specifically stated in writing, this Agreement describes the full extent of compensation Mr. Kresa shall receive for his services to the Company on and after the date hereof.

C. Warranty. Mr. Kresa certifies and warrants that in the course of performing services under this Agreement, no payments will be made to government officials or customer representatives, that no government official or customer representative has any direct or indirect investment interest or interest in the revenues or profits of Mr. Kresa, and that no expenditure for other than lawful purposes will be made.

D. Exclusion Of Lobbying Costs From Overhead Rates. The Company is prohibited from charging, directly or indirectly, costs associated with lobbying activities to its contracts with the United States Government. Unallowable costs associated with lobbying activities are defined at Federal Acquisition Regulations (FAR) 31.205-22, effective as of the date of this Agreement. Mr. Kresa agrees that in the event that Mr. Kresa performs lobbying activities under this Agreement, Mr. Kresa shall provide the Company with a detailed accounting of time expended, individual agency/congressional employees contacted, and the Company programs discussed in the required activity report.

VI. MARCH 2000 SPECIAL AGREEMENT

Mr. Kresa and the Company entered into a March 2000 Special Agreement on or about September 15, 1999 (the "Special Agreement"). Effective April 1, 2003 Mr. Kresa hereby waives and relinquishes any and all rights and benefits he may have under the Special Agreement, and he agrees not to make

any claim, now or in the future, for benefits which accrue under the Special Agreement after that date. Mr. Kresa acknowledges that he is currently due no amount or benefit under the Special Agreement. Mr. Kresa and the Company hereby terminate the Special Agreement in its entirety effective April 1, 2003.

VII. TRADE SECRETS AND PROPRIETARY INFORMATION

A. Disclosure To Third Parties Prohibited. Mr. Kresa shall not divulge, disclose or communicate any information concerning any matters affecting or relating to the business of the Company without the express written consent of the Company or as may be required for Mr. Kresa to fulfill his obligations as Chairman or as a member of the Board. The terms of this Section shall remain in full force and effect after the termination or expiration of this Agreement.

B. Ideas, Improvements and Inventions. Any and all ideas, improvements and inventions conceived of, developed, or first reduced to practice in the performance of work hereunder for the Company shall become the exclusive property of the Company and ideas and developments accruing therefrom shall all be fully disclosed to the Company and shall be the exclusive property of the Company and may be treated and dealt with by the Company as such without payment of further consideration than is hereinabove specified. Mr. Kresa shall preserve such ideas, improvements and inventions as confidential during the term of the contract and thereafter and will execute all papers and documents necessary to vest title to such ideas, developments, information, data, improvements and inventions in the Company and to enable the Company to apply for and obtain letters patent on such ideas, developments, information, data, improvements and inventions in any and all countries and to assign to the Company the entire right, title and interest thereto.

C. Notes, Memoranda, Reports and Data. Mr. Kresa agrees that the original and all copies of notes, memoranda, reports, findings or other data prepared by Mr. Kresa in connection with the services performed hereunder shall become the sole and exclusive property of the Company.

D. Disclosure of Confidential or Proprietary Information of Third Parties Prohibited. Mr. Kresa will not disclose to the Company or induce the Company to use any secret process, trade secret, or other confidential or proprietary knowledge or information belonging to others, including but not limited to the United States. Such information includes but is not limited to information relating to bids, offers, technical proposals, responses to requests for procurement, rankings of competitors and other similar procurement sensitive information.

VIII. PRESERVATION OF TRADE NAMES, TRADE MARKS AND PATENT RIGHTS

All trade names, trade marks and patent rights of the Company pertaining to Company products, including the names “Northrop,” “Grumman” “Litton,” “Newport News Shipbuilding,” “Ingalls,” “Avondale,” “TRW,” and “Northrop Grumman Corporation” shall remain the sole property of the Company and Mr. Kresa agrees, upon request, to take such reasonable action as may be requested by the Company to protect and preserve such trade names, trade marks and patent rights from claims by other persons or entities.

IX. COOPERATION WITH THE COMPANY

During and after the expiration of this Agreement, Mr. Kresa shall cooperate with the Company in regard to any matter, dispute or controversy in which the Company is involved, or may become involved and of which Mr. Kresa may have knowledge. Such cooperation shall be subject to further agreement

providing payment for Mr. Kresa's expenses and reasonable compensation for his time.

X. INDEMNIFICATION; INDEPENDENT CONTRACTOR

Mr. Kresa shall render all services hereunder during the Consulting Period as an independent contractor and shall not hold out himself or herself as an agent of the Company. Nothing herein shall be construed to create or confer upon Mr. Kresa the right during the Consulting Period to make contracts or commitments for or on behalf of the Company. Mr. Kresa and the Company entered into an Indemnification Agreement that was effective on or about October 12, 1987 (the "Indemnification Agreement"). The Indemnification Agreement provides that the Company will indemnify Mr. Kresa for certain losses that Mr. Kresa may incur in connection with providing services that are within Mr. Kresa's "Corporate Status" with the Company. Mr. Kresa's services as Chairman and as a member of the Board, and Mr. Kresa's other services pursuant to this Agreement, shall constitute "Corporate Status" for purposes of the Indemnification Agreement.

XI. TAXES

Mr. Kresa shall provide all services contemplated by this Agreement (during both the period of time that he is a member and Chairman of the Board and during the Consulting Period) as a non-employee of the Company and the Company shall withhold (or not withhold, as applicable) income and employment taxes on such basis.

Except as provided below and in Section II A, Mr. Kresa shall pay all taxes which are imposed on him with respect to the compensation paid hereunder (including, without limitation, all taxes that may be due if the classification

contemplated by the preceding paragraph is erroneous or if the Company is required to revise such classification).

If upon or following a change in the ownership or effective control of the Company or a change in the ownership of a substantial portion of the assets of the Company (as these terms are used for purposes of Section 280G of the Internal Revenue Code of 1986, as amended (the "Code")) (a "Change in Control"), the tax imposed by Section 4999 of the Code or any similar or successor tax (the "Excise Tax") applies, solely because of the Change in Control, to any payments, benefits and/or amounts received by Mr. Kresa from the Company (including, without limitation, any fees, costs and expenses paid under this Agreement) and/or any amounts received or deemed received, within the meaning of any provision of the Code, by Mr. Kresa as a result of (and not by way of limitation) any automatic vesting, lapse of restrictions and/or accelerated target or performance achievement provisions, or otherwise, applicable to outstanding grants or awards to Mr. Kresa under any of the Company's incentive plans, including without limitation, the 2001 Long Term Incentive Stock Plan, the 1993 Long Term Incentive Stock Plan, the 1987 Long Term Incentive Plan and the 1981 Long-Term Incentive Plan, the Company shall pay to Mr. Kresa in cash an additional amount or amounts (the "Gross-Up Payment(s)") such that the net amount retained by Mr. Kresa after the deduction of any Excise Tax on such payments, benefits and/or amounts so received and any Federal, state and local income tax and Excise Tax upon the Gross-Up Payment(s) provided for by this Section shall be equal to such payments, benefits and/or amounts so received had they not been subject to the Excise Tax. Such payment(s) shall be made by the Company to Mr. Kresa as soon as practicable following the receipt or deemed receipt of any such payments, benefits and/or amounts so received, but in all events shall be made within thirty (30) days of the receipt or deemed receipt by Mr. Kresa of any such payment, benefit and/or amount.

The Company's obligation to make a Gross-Up Payment, and the amount of any Gross-Up Payment, shall be determined by the Company's independent auditors. For purposes of determining whether any payments, benefits and/or amounts will be subject to Excise Tax, and the amount of any such Excise Tax:

- Any other payments, benefits and/or amounts received or to be received by Mr. Kresa in connection with or contingent upon a Change in Control of the Company (whether pursuant to the terms of this Agreement or any other plan, arrangement or agreement with the Company, or with any person whose actions result in a Change in Control of the Company or any person affiliated with the Company or such persons) shall be combined to determine whether Mr. Kresa has received any "parachute payment" within the meaning of Section 280G(b)(2) of the Code, and if so, the amount of any "excess parachute payments" within the meaning of Section 280G(b)(1) that shall be treated as subject to the Excise Tax, unless in the opinion of tax counsel selected by the Company's independent auditors, such other payments, benefits and/or amounts (in whole or in part) do not constitute parachute payments, or such excess parachute payments represent reasonable compensation for services actually rendered within the meaning of Section 280G(b)(4) of the Code in excess of the base amount within the meaning of Section 280G(b)(3) of the Code, or are otherwise not subject to the Excise Tax; and
- The value of any non-cash benefits or any deferred payment or benefit shall be determined by the Company's independent auditors in accordance with the principles of Sections 280G(d)(3) and (4) of the Code.

For purposes of determining the amount of the Gross-Up Payment, Mr. Kresa shall be deemed to pay Federal income taxes at the highest marginal rate

of Federal income taxation in the calendar year in which the Gross-Up Payment is to be made. Such highest marginal rate shall take into account the loss of itemized deductions by Mr. Kresa and shall also include the effect of employment taxes and state and local income taxes at the highest marginal rate of taxation in the state and locality of Mr. Kresa's residence, net of the maximum reduction in Federal income taxes that could be obtained from the deduction of such taxes.

In the event the Internal Revenue Service adjusts the computation of the Company's independent auditors under this Section so that Mr. Kresa did not receive the greatest net benefit, the Company shall reimburse Mr. Kresa as provided herein for the full amount necessary to place Mr. Kresa in the same after-tax position as he would have been in had no Excise Tax applied.

XII. OBSERVANCE OF APPLICABLE LAWS AND REGULATIONS

A. United States Laws. Mr. Kresa shall comply with and do all things necessary for the Company to comply with United States laws and regulations and express policies of the United States Government, including but not limited to the requirements of the Foreign Corrupt Practices Act, 15 U.S.C. Section 78 dd-1 et seq.; the Federal Acquisition Regulations, 48 CFR Section 1.101 et seq., ("FAR"); the International Traffic in Arms Regulations, 22 CFR Parts 120 through 130 and applicable regulations; the Byrd Amendment (31 U.S.C. Section 1352) and applicable regulations; the Office of Federal Procurement Policy Act (41 U.S.C. Section 423) and applicable regulations; and the DoD Joint Ethics Regulation (DoD 5500.7-R). No part of any compensation or fee paid by the Company will be used directly or indirectly to make any kickbacks to any person or entity, or to make payments, gratuities, emoluments or to confer any other benefit to an official of any government or any political party. Mr. Kresa shall not seek, nor relay to the Company, any classified, proprietary or source selection information not generally available to the public. Mr. Kresa shall also comply

with and do all things necessary for the Company to comply with provisions of contracts between agencies of the United States Government or their contractors and the Company that relate either to patent rights or the safeguarding of information pertaining to the security of the United States. This entire Agreement and/or the contents thereof may be disclosed to the United States Government.

B. No Selling Agency Employed. Mr. Kresa further represents and warrants that, in the event he is authorized pursuant to Section XV hereof to utilize or employ a third party, no person or selling agency has been or will be employed or retained to solicit or secure any contract, including but not limited to a United States Government contract, upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by Mr. Kresa for the purpose of receiving business. In the event of a breach or violation of this warranty, the Company shall have the right to annul this Agreement without liability or in its discretion to deduct from the fee or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage or contingent fee.

C. State Law And Regulations. Mr. Kresa shall comply with and do all things necessary for Mr. Kresa and the Company each to comply with all laws and regulations of the State of California and any other state, including the Commonwealth of Virginia and the District of Columbia, in which services hereunder are or may be rendered.

D. Maintenance Of Time And Expense Records. Mr. Kresa shall maintain appropriate time and expense records pertaining to the services performed under this Agreement. Said records shall be subject to examination and audit by the Company and the United States Government until notified by the Company in writing, that the records no longer need to be maintained.

E. Certification. This Agreement is made in material reliance upon the representations and warranties made by Mr. Kresa herein and in Attachment B hereto. The effectiveness of this Agreement is contingent upon and will not commence until receipt by the Company of the certifications set forth in Attachment B hereto. In the event that the Company has reason to believe that these certifications are incorrect, the Company may treat this Agreement as being null and void or may terminate this Agreement pursuant to Section XVIII.

F. Standards of Business Conduct. Mr. Kresa hereby acknowledges that he has received a copy of the Company's Values, Ethics and Business Conduct For Northrop Grumman Associates (or amendment thereof) and agrees to conduct his activities for or on behalf of the Company in accordance with such principles as a condition of this Agreement. In connection with the execution of this Agreement, Mr. Kresa shall also execute the Certificate attached hereto as Attachment D.

XIII. ASSIGNMENT OF RIGHTS

This Agreement and the rights, benefits, duties and obligations contained herein may not be assigned or otherwise transferred in any manner to third parties without the express written approval of the Company and Mr. Kresa, except by operation of law. Any such assignment or transfer without prior approval of the Company and Mr. Kresa or by operation of law will be null, void and without effect.

XIV. MODIFICATION

No waiver or modification of this Agreement or of any covenant, condition, or limitation herein shall be valid and enforceable unless such waiver or modification is in writing.

XV. USE OR EMPLOYMENT OF THIRD PARTIES

Mr. Kresa shall not utilize or employ any third party, individual or entity, in connection with Mr. Kresa's performance of services under this Agreement during the Consulting Period without the express written approval of the Company.

XVI. CONFLICTS OF INTEREST

No business or legal conflicts of interest shall exist between services performed or to be performed by Mr. Kresa on behalf of the Company and by Mr. Kresa on behalf of any other client. The identity of Mr. Kresa's directorship's, other employment and clients shall be fully disclosed by Mr. Kresa in Attachment C hereto. Mr. Kresa shall promptly notify the Company in writing of any change in his directorships, employment, and clients.

XVII. EXCLUSIVITY OF CONSULTING ARRANGEMENT

During the Consulting Period Mr. Kresa shall not directly or indirectly engage in any activities designed to deprive or which may have the effect of depriving the Company of the good will of customers or potential customers of its products and services. Further, Mr. Kresa shall not, prior to the expiration of the Consulting Period, represent, act as representative for, or market or sell, directly or indirectly, products competing with Company products and services.

XVIII. TERMINATION

A. Violation Of Term Or Condition. In the event of a violation by Mr. Kresa of any term or condition, express or implied, of this Agreement or of any federal or state law or regulation pertaining to or arising from Mr. Kresa's

performance of services under this Agreement, the Company may, in its discretion, terminate this Agreement immediately, without notice and in such event, Mr. Kresa shall only be entitled to compensation up to the time of such violation.

B. Bankruptcy; Death. In the event that Mr. Kresa dies or is adjudicated a bankrupt or petitions for relief under bankruptcy, reorganization, receivership, liquidation, compromise or other arrangement or attempts to make an assignment for the benefit of creditors, this Agreement shall be deemed terminated automatically, without requirement of notice, without further liability or obligation to the Company (except, in the event of Mr. Kresa's death, for (A) obligations to Mr. Kresa expressly contemplated by Sections II B, C and E and to Mr. Kresa's widow expressly contemplated by Sections II A and D; (B) any amount then due Mr. Kresa pursuant to Sections IV and V; (C) any indemnification obligation pursuant to Section X; and (D) any tax obligation owed to Mr. Kresa pursuant to Section XI.)

XIX. SEVERABILITY OF PROVISIONS

All provisions contained herein are severable and in the event any of them are held to be invalid by any competent court, this Agreement shall be interpreted as if such invalid provision was not contained herein.

XX. AVAILABILITY OF EQUITABLE REMEDIES

Mr. Kresa understands and agrees that any breach or evasion of any of the terms of this Agreement may result in immediate and irreparable injury to the Company and will entitle the Company to all legal and equitable remedies including, without limitation, injunction or specific performance.

XXI. GOVERNING LAW

This Agreement and the performance hereunder shall be governed by and construed in accordance with the laws of the State of California (excluding any conflicts of laws provisions) which shall be the exclusive applicable law.

XXII. SETTLEMENT OF DISPUTES

A. The Company and Mr. Kresa hereby consent to the resolution by arbitration of all disputes, issues, claims or controversies arising out of or in connection with this Agreement, Mr. Kresa's employment with and/or retirement from the Company, and/or Mr. Kresa's services to the Company, that the Company may have against Mr. Kresa, or that Mr. Kresa may have against the Company, or against its officers, directors, employees or agents acting in their capacity as such. Each party's promise to resolve all such claims, issues, or disputes by arbitration in accordance with this Agreement rather than through the courts, is consideration for the other party's like promise. It is further agreed that the decision of an arbitrator on any issue, dispute, claim or controversy submitted for arbitration, shall be final and binding upon the Company and Mr. Kresa and that judgment may be entered on the award of the arbitrator in any court having proper jurisdiction.

B. Except as otherwise provided herein or by mutual agreement of the parties, any arbitration shall be administered in accordance with the then-current Commercial Arbitration Procedures of the American Arbitration Association (AAA) before a single arbitrator who is a retired federal or state court judge in the state in which the arbitration is convened. The arbitration shall be held in Los Angeles, California or at any other location mutually agreed upon by the parties.

C. The parties shall attempt to agree upon the arbitrator. If the parties cannot agree on the arbitrator, the AAA shall then provide the names of nine (9)

arbitrators experienced in business employment matters along with their resumes and fee schedules. Each party may strike all names on the list it deems unacceptable. If more than one common name remains on the list of all parties, the parties shall strike names alternately until only one remains. The party who did not initiate the claim shall strike first. If no common name remains on the lists of the parties, the AAA shall furnish an additional list until an arbitrator is selected.

D. The arbitrator shall interpret this Agreement, and any applicable Company policy or rules and regulations, any applicable substantive law (and the law of remedies, if applicable) of the State of California, or applicable federal law. In reaching his or her decision, the arbitrator shall have no authority to change or modify any lawful Company policy, rule or regulation, or this Agreement. The arbitrator, and not any federal, state or local court or agency, shall have exclusive and broad authority to resolve any dispute relating to the interpretation, applicability, enforceability or formation of this Agreement, including, but not limited to, any claim that all or any part of this Agreement is voidable.

XXIII. NOTICE

Any notice to be given hereunder shall be in writing, mailed by certified or registered mail with return receipt requested addressed to the Company:

Northrop Grumman Corporation
1840 Century Park East
Los Angeles, CA 90067
Attn.: Chief Human Resources Officer

or to Mr. Kresa:

Kent Kresa
[address omitted]

or to such other address as may have been furnished at the date of mailing either by the Company or Mr. Kresa in writing.

XXIV. COMPLETE AGREEMENT

Effective April 1, 2003 this Agreement constitutes the entire agreement of the parties with respect to the engagement of Mr. Kresa by the Company and supersedes any and all other agreements between the parties (other than the Indemnification Agreement which is outside of the scope of the foregoing and the Company's employee benefit programs in which Mr. Kresa participated and is due a benefit or in which he continues to participate in accordance with this Agreement, including, but not limited to, annual bonuses which are payable to him under incentive compensation plans, grants under long term incentive plans, and benefits under retirement, deferred compensation, estate enhancement and welfare plans and programs). The parties stipulate and agree that neither of them has made any representation with respect to this Agreement except such representations that are specifically set forth herein. The parties acknowledge that any other payments or representations that may have been made are of no effect and that neither party has relied on such payments or representations in connection with this Agreement or the performance of services contemplated herein.

[Remainder of page intentionally left blank.]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be entered into and executed as set forth below.

NORTHROP GRUMMAN CORPORATION

/s/ J. Michael Hateley

J. Michael Hateley
Corporate Vice President and Chief Human
Resources and Administrative Officer

Date: February 19, 2003

KENT KRESA

/s/ Kent Kresa

Kent Kresa

Date: February 19, 2003

TIN: [omitted]

ATTACHMENT A

**KENT KRESA
RELEASE**

1. **PARTIES:** The parties to this Release Agreement (referred to hereafter as "Agreement") are **KENT KRESA** (referred to hereafter as "Executive") and **NORTHROP GRUMMAN CORPORATION** (referred to hereafter as "Northrop Grumman" or the "Company").
2. **RECITALS:** This Agreement is made with reference to the following facts:
 - 2.1 Executive retired from employment with and as Chief Executive Officer of the Company on or about April 1, 2003.
 - 2.2 Executive and the Company entered into a Transition Agreement, dated February 19, 2003 (the "Transition Agreement") that provides for certain enhanced retirement benefits, and for Executive's continued service as a non-employee member of the Company's Board of Directors, as Chairman of the Company's Board of Directors, and as a consultant to the Company for certain specified periods following Executive's retirement.
 - 2.3 This Agreement is the release Executive is required to sign in order to receive the enhanced retirement benefits set forth in the Transition Agreement.

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3. **CONSIDERATION:** In exchange for the Executive's agreement to abide by all of the terms of this Agreement, Northrop Grumman will provide Executive with the enhanced retirement benefits set forth in the Transition Agreement.
4. **COMPLETE RELEASE:** In consideration of the promises contained herein, and for other good and valuable consideration the receipt of which is hereby acknowledged, Executive does hereby acknowledge full and complete satisfaction of and does hereby agree to release, absolve and discharge Releasees (as defined below) from all claims, causes of action, demands, damages or costs he may have against Releasees on behalf of himself or others arising prior to the date he signs this Agreement. "Releasees" shall mean the Company, its subsidiaries, affiliated and related companies, past, present and future, and each of them, as well as its and their employees, officers, directors, and agents (in their capacities as employees, officers, directors and agents), past and present, and each of them in such capacities.
- 4.1 This waiver and release includes, but is not limited to, any rights, claims, causes of action, demands, damages or costs arising under the Age Discrimination in Employment Act, which prohibits discrimination in employment based on age, and retaliation; Title VII of

the Civil Rights Act of 1964, which prohibits discrimination in employment based on race, color, religion, sex or national origin, and retaliation; the Americans with Disabilities Act, which prohibits discrimination based on disability and retaliation; the California Fair Employment and Housing Act, which prohibits discrimination in employment based on race, color, religion, sex, sexual orientation, national origin, ancestry, physical disability, mental disability, medical condition, marital status or age, and retaliation; or any other federal, state or local laws or regulations prohibiting employment discrimination or retaliation whether such claim be based upon an action filed by Executive or by any governmental agency.

- 4.2** This waiver and release also includes, but is not limited to, any rights, claims, causes of action, demands, damages or costs arising in relation to the Company's employee handbook and personnel policies, or any or statements made by officers, directors, lawyers, employees or agents of the Company, past and present, and each of them, or under any state or federal law regulating wages, hours, compensation or employment, or any claim for retaliation, wrongful discharge, breach of contract, breach of the implied covenant of good faith and fair dealing, intentional or negligent infliction of emotional distress, intentional or negligent misrepresentation, or defamation.

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- 4.3** This waiver and release also includes, but is not limited to, any rights, claims, causes of action, demands, damages or costs arising under or in relation to any severance plan, program, or arrangement.
- 4.4** This waiver and release also includes, but is not limited to, any rights, claims, causes of action, demands, damages or costs arising under the federal False Claims Act.
- 4.5** This release covers both claims that Executive knows about and those he may not know about. Executive hereby specifically waives and relinquishes all rights and benefits provided by Section 1542 of the Civil Code of the State of California, and does so understanding and acknowledging the significance of this specific waiver of Section 1542. Section 1542 of the Civil Code of the State of California states as follows:

“A general release does not extend to claims which the creditor does not know or suspect to exist in his favor at the time of executing the release, which if known by him must have materially affected his settlement with the debtor.”

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- 4.6** Notwithstanding the provisions of Section 1542 and for the purpose of implementing a full and complete release, Executive expressly acknowledges that this Agreement is intended to include all claims which he does not know or suspect to exist in his favor at the time of his signature on the Agreement, and that this Agreement will extinguish any such claims.
- 4.7** Notwithstanding anything to the contrary herein, this Agreement does not waive or release: (i) any rights or claims which Executive may have under the Age Discrimination in Employment Act or other laws which arise after the date he signs this Agreement, (ii) any rights or claims Executive may have under the Transition Agreement; (iii) any rights Executive may have for indemnification from the Company; (iv) any rights which Executive may have under the Company's Directors and Officers liability insurance policy; (v) any rights Executive may have under stock grants, restricted stock right grants, and/or restricted performance stock right grants provided to him by the Company; (vi) any rights Executive may have as a shareholder of Northrop Grumman; and (vii) any rights Executive may have to benefits under any Company annual incentive plan or employee benefit

plan, including without limitation retirement, deferred compensation, estate enhancement and welfare plans or programs.

5. **ARBITRATION**: Any dispute or controversy arising under or in connection with this Agreement shall be settled exclusively by arbitration, conducted before a single arbitrator in the State of California (in the major city nearest Executive's residence) in accordance with the procedures set forth in Section XXII B, C and D of the Transition Agreement. The decision of the arbitrator will be final and binding upon the parties hereto. Judgment may be entered on the arbitrator's award in any court having jurisdiction. The arbitrator may, but need not, award the prevailing party in any dispute (as determined by the arbitrator) its or his legal fees and expenses.
6. **PERIOD FOR REVIEW AND CONSIDERATION OF AGREEMENT; ADVICE OF COUNSEL**: Executive agrees and understands that he has been given a period of twenty-one (21) calendar days from his receipt of this Agreement to review and consider this Agreement before signing it. Executive further understands that he may use as much of this review period as he wishes prior to signing; he can sign this Agreement at any time prior to the expiration of the twenty-one calendar day period. At the end of this period, the offer of the enhanced retirement benefits set forth in the Transition Agreement will be deemed

automatically withdrawn if not earlier signed by Executive and delivered to the Company. Executive is advised and encouraged to consult with his own legal counsel prior to signing this Agreement.

7. **RIGHT TO REVOKE AGREEMENT:** Executive may revoke this Agreement within seven (7) calendar days of signing it. Revocation can be made by delivering a written notice of revocation to Chief Human Resources Officer, Northrop Grumman Corporation, 1840 Century Park East, Los Angeles, CA 90067. For this revocation to be effective, written notice must be received by the Chief Human Resources Officer no later than 5:00 p.m. PST on the seventh calendar day after Executive signs this Agreement. If Executive revokes this Agreement, it shall not be effective or enforceable, and Executive will not receive the benefits described in Section 3 of this Agreement.
8. **NON-ADMISSION OF LIABILITY:** Nothing contained herein shall be construed as an admission by either Executive or by Northrop Grumman of liability of any kind.
9. **SEVERABILITY:** The provisions of this Agreement are severable, and if any part of it is found to be illegal or invalid and thereby unenforceable, the validity of the remaining parts, terms or provisions shall not be affected and shall remain fully enforceable. The unenforceable

part, term or provision shall be deemed not to be a part of this Agreement.

10. **SOLE AND ENTIRE AGREEMENT**: Except as otherwise expressly set forth herein, this Agreement sets forth the entire agreement between the parties hereto, and fully supersedes any and all discussions, prior agreements or understandings between the parties hereto pertaining to the subject matter of this Agreement.
11. **GOVERNING LAW**: This Agreement shall be interpreted and enforced in accordance with the laws of the State of California without regard to rules regarding conflicts of law.

[Remainder of page intentionally left blank.]

EXECUTIVE ACKNOWLEDGES THAT HE HAS HAD AN OPPORTUNITY TO ASK QUESTIONS, CONFER WITH COUNSEL, AND TO CAREFULLY CONSIDER ALL OF THE PROVISIONS OF THIS AGREEMENT BEFORE SIGNING IT. HE FURTHER AGREES THAT HE HAS READ THIS AGREEMENT, UNDERSTANDS IT, AND IS VOLUNTARILY ENTERING INTO IT.

PLEASE READ THIS AGREEMENT CAREFULLY. IT CONTAINS A RELEASE OF ALL KNOWN AND UNKNOWN CLAIMS.

NORTHROP GRUMMAN CORPORATION

J. Michael Hateley
Corporate Vice President and Chief Human Resources and
Administrative Officer

Date: _____

KENT KRESA

Kent Kresa

Date: _____

ATTACHMENT B

**KENT KRESA
CERTIFICATION**

The undersigned, Kent Kresa ("Mr. Kresa"), hereby certifies, represents and warrants the following:

1. In past dealings with Northrop Grumman Corporation (the "Company") or other clients, to the best of his knowledge Mr. Kresa has complied with all applicable laws, rules, regulations and express policies of the United States and the State or territory in which services were performed.
2. In performing services under the Transition Agreement ("Agreement"), Mr. Kresa will comply with all applicable laws, rules, regulations and express policies of the United States and the State or territory in which services will be performed.
3. There have been no kickbacks or other payments made, either directly or indirectly, to or by Mr. Kresa or to or by any member of his family.
4. No kick-backs or other payments will be made, either directly or indirectly, to or by Mr. Kresa or to or by any member of his family.
5. Mr. Kresa will not use any part of the compensation paid by the Company under the Agreement to make payments, gratuities, or emoluments or to confer any other benefit to an official of any government, or any political party, or official of any political party.
6. No person or selling agency will be employed or retained to solicit or secure any contract, including but not limited to a United States government

contract, upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial selling agencies maintained by Mr. Kresa for the purpose of receiving business.

7. No classified, proprietary, source selection or procurement sensitive information will be solicited by Mr. Kresa on behalf of or conveyed by Mr. Kresa to the Company.

8. Mr. Kresa will not influence or attempt to influence any United States government official or employee in connection with the award, extension, continuation, renewal, amendment or modification of a federal contract or otherwise engage in "non-exempt services" within the meaning of the Byrd Amendment, 31 U.S.C. Section 1352.

9. Mr. Kresa will not utilize or employ any third party, individual or entity, in connection with the performance of services under the Agreement on behalf of the Company, except as follows: (if none, state "None").

10. No business or legal conflicts of interest exist between services to be performed under the Agreement by Mr. Kresa on behalf of the Company and by Mr. Kresa on behalf of any other client, the identities of which Mr. Kresa has fully disclosed to the Company.

I declare under penalty of perjury that the foregoing certificate is true and correct.

Signed:

Kent Kresa

Date: _____

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ATTACHMENT C

KENT KRESA

CERTIFICATION OF DIRECTORSHIPS, EMPLOYMENT AND CLIENTS

The following is a complete list of directorships, employment and consulting clients:

I. Directorships and Employment

<u>Name of Company</u>	<u>Responsibilities/Duties</u>
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II. CLIENTS

<u>Name of Company</u>	<u>Services/Duties</u>
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Signed:

Kent Kresa

Date: _____

ATTACHMENT D

MR. KRESA

CERTIFICATE REGARDING

NORTHROP GRUMMAN CORPORATION

STANDARDS OF BUSINESS CONDUCT

I, Kent Kresa, do hereby certify that I am familiar with and will conform to the principles and practices set forth in the Northrop Grumman publication entitled Values, Ethics, and Business Conduct For Northrop Grumman Associates.

Signed:

Kent Kresa

Date: _____

EMPLOYMENT AGREEMENT

1. **PARTIES:** The parties to this Employment Agreement (hereafter referred to as this "Agreement") are **DR. RONALD D. SUGAR** (hereafter referred to as "Executive") and **NORTHROP GRUMMAN CORPORATION** (hereafter referred to as "Northrop Grumman" or "the Company").
2. **EMPLOYMENT:** Executive has been employed by Northrop Grumman as its President and Chief Operating Officer since September 19, 2001 and member of the Company's Board of Directors (the "Board") since April, 2001. Executive and Northrop Grumman were parties to an Employment Agreement that was effective on or about September 19, 2001 (the "2001 Employment Agreement"). Northrop Grumman and Executive now wish to terminate the 2001 Employment Agreement and to enter into new employment terms and conditions as set forth in this Agreement in connection with Executive's election to the position of Chief Executive Officer and President of Northrop Grumman and continuation as a member of the Board.
3. **TERM:** The term of this Agreement shall commence as of the date (the "Effective Date") that the Board elects the Executive as Chief Executive Officer and President of the Company and shall end at the close of business on the day before the fifth anniversary of the Effective Date, unless sooner terminated as hereinafter provided and subject to extension as provided in the next sentence. Commencing with the day before the fifth anniversary of the Effective Date and on each subsequent annual

anniversary of such date, the term of this Agreement shall automatically be extended for an additional one-year period unless the Executive or the Company has provided the other party hereto at least ninety (90) day's prior written notice that the term of this Agreement shall not be so extended (or further extended, as the case may be). Providing any such notice shall not constitute a breach of this Agreement by either party and shall not entitle the Executive to the special severance benefits set forth in Section 15. Notwithstanding anything else contained herein to the contrary, the term of this Agreement shall not extend beyond, and shall terminate on or before, the last day of the month in which the Executive attains his sixty-fifth (65th) birthday.

4. POSITION AND DUTIES: Executive shall serve as Chief Executive Officer and President of the Company and shall be an elected officer of the Company throughout the term of this Agreement. Executive will also continue as a member of the Board throughout the term of this Agreement. Executive also agrees to serve on any Company subsidiary Board to which he has been or may in the future be elected. Executive shall, during the term hereof:

A. be responsible for the general supervision, direction and control of the business and affairs of the Company and shall have such other duties and responsibilities as the Board shall designate that are consistent with Executive's position as Chief Executive Officer and President of the Company. Executive shall perform all of such duties and responsibilities in accordance with the legal directives of the Board and in accordance with the practices and policies of the Company as in effect

from time to time. While employed as Chief Executive Officer and President of the Company, Executive shall report exclusively to the Board.

B. devote all of his business time (excluding periods of vacations and absences made necessary because of illness or other traditionally approved leave purposes), energy and skill in the performance of his duties with the Company; provided, however, that the foregoing will not prevent Executive from reasonably (i) participating in charitable, civic, educational, professional, community or industry affairs or serving on the boards of directors or advisory boards of other companies, and (ii) managing his and his family's personal investments.

5. **COMPENSATION AND BENEFITS**: During the term of this Agreement, the following terms shall apply:

A. **Base Salary**: Executive's base salary during the term of this Agreement shall be no less than \$1,100,000 per year, which amount shall be subject to periodic increases, but not decreases, in accordance with the Company's normal salary review process.

B. **ICP Bonus**: Executive shall continue to participate in the Incentive Compensation Plan ("ICP"), a bonus plan for certain selected officers of the Company.

C. **Benefits:** For the term of this Agreement, Executive shall participate in the Northrop Grumman welfare plans, and shall continue benefit accruals under the Northrop Grumman pension plans, in which Northrop Grumman's elected officers participate, as such plans may be amended from time to time. These plans currently include, but are not limited to, the Northrop Grumman Retirement Plan (the "NG Retirement Plan"), the Northrop Grumman Savings and Investment Plan, and, for the purpose of providing non-qualified benefits in excess of Internal Revenue Code Sections 415 and 401(a)(17) limits, two non-qualified supplemental executive retirement plans known as "ERISA 1" and "ERISA 2".

D. Special Pension Benefits:

1. **CPC SERP:** Executive shall be a participant in a supplemental retirement plan known as the CPC SERP. As of January 1, 2002 Executive shall be deemed to have 5 years of vesting service under the CPC SERP and shall continue to accrue service for his employment after January 1, 2002. His defined benefit retirement plan benefits shall include benefits accrued under the CPC SERP, the NG Retirement Plan, ERISA 1 and ERISA 2, in addition to benefits accrued under defined benefit retirement plans in which he participated at TRW Inc. ("TRW") and Litton Industries, Inc. ("Litton"), his prior employers.

2. **SRI Plan:** In addition to the CPC SERP, Executive shall be a participant in the Northrop Supplemental Retirement Income Program for Senior Executives (the "SRI Plan"), which provides for a maximum benefit of 60% of Final

Average Salary (which term is defined to include salary and bonus) at age 65. In order to be eligible for any benefits under the SRI Plan, Executive must have 10 years of vesting service. Executive shall be deemed to have 5 years of vesting service under the SRI Plan as of January 1, 2002 and shall continue to accrue service for his employment thereafter. In the event Executive meets this vesting requirement and terminates from employment on or after January 1, 2007, his retirement benefits from defined benefit retirement plans shall be equal to the sum of the values of (i) the monthly benefits accrued under all the plans noted in D 1, above; plus, if any, (ii) the monthly benefits under the SRI Plan formula, which formula will incorporate an offset for the sum of (x) the monthly benefits payable to him at retirement under all the plans noted in D 1 above, and (y) an annual benefit of \$124,788 commencing at retirement (representing an offset for a portion of the retirement benefits already paid to him under certain Litton retirement plans). Each pension benefit shall be paid under the terms (including choice of optional forms) of the plan from which it is paid.

E. Stock and Stock Options: As of the Effective Date, Executive will be awarded a non-qualified stock option covering 50,000 shares of Northrop Grumman common stock (subject to proportional adjustment to give effect to any stock splits, reverse stock splits or similar changes in capitalization that occur after the date of this Agreement and prior to the Effective Date). These options will be subject to the terms and conditions of the Company's 2001 Long Term Incentive Stock Plan ("LTISP"), the Guide to Administration for the LTISP ("Guide") and the grant certificate to be provided to Executive to evidence such options (which certificate shall be in substantially the same form as the form of option certificate customarily used by the Company for

employee stock option grants). Executive shall also be eligible to receive future grants under the LTISP in accordance with the Company's normal practice of awarding such grants to elected officers.

6. PERQUISITES: For the term of this Agreement, Executive shall be eligible for Company perquisites that are, in the aggregate, no less favorable than the perquisites provided by the Company to any other elected officer. The perquisites provided to the Company's Chief Executive Officer, as currently in effect, are listed on Exhibit A of this Agreement. The perquisites provided by the Company are subject to change from time to time. In addition, Executive shall be entitled to four weeks vacation per year.

7. RETIREE MEDICAL BENEFIT: Executive shall be eligible to participate in the Special Officer Retiree Medical Program on the same terms and conditions as other elected officers. That program currently provides lifetime medical benefits to elected officers who retire and to their spouses, if Executive has at least 5 years of service as an elected officer.

In the event that the Executive terminates from employment at any time and is not eligible to receive medical benefits under the Special Officer Retiree Medical Program, the Company will make the benefits otherwise provided under such program available to Executive and his spouse (during the lifetime of each) provided that the Executive (or, after his death, his spouse) reimburses the Company for the full premium for such coverage.

8. **SPECIAL AGREEMENT**: Executive's March 2000 Special Agreement (the "Special Agreement") previously entered into with the Company providing certain protections for Executive in the event of a Change in Control of the Company shall continue in effect.

9. **TERMINATION OF 2001 EMPLOYMENT AGREEMENT**: Executive's 2001 Employment Agreement shall continue in effect until the Effective Date. Executive and Northrop Grumman hereby terminate the 2001 Employment Agreement in its entirety as of the Effective Date; provided, however, that this termination shall not affect Executive's rights to any pension benefits which he previously accrued pursuant to the 2001 Employment Agreement and pursuant to certain agreements previously entered into with Litton, certain pension plans (including a Benefit Equalization Plan or BEP) in which he participated at TRW, and this termination shall not affect the termination of any other agreement that was terminated pursuant to or in connection with the 2001 Employment Agreement.

10. **SPECIAL RETENTION BENEFITS**: The Company awarded Executive 66,480 Restricted Stock Rights as of September 19, 2001 (the "RSRs"). In the event Executive's employment is terminated for any of the following reasons, the RSRs then remaining outstanding and unvested shall thereupon vest and all shares not yet issued pursuant to the grant certificate for the RSRs shall be issued as of the date of such termination: (i) the death of Executive; or (ii) Executive's "Disability" (as hereinafter

defined); or (iii) termination of Executive's employment by Northrop Grumman without "Cause" (as hereinafter defined); or (iv) termination of employment by Executive for "Good Reason" (as hereinafter defined); provided further, that the Company shall have the right to pay equivalent cash value in lieu of issuing all or a portion of the shares of stock required by this Section 10. Except as otherwise modified by this Section 10, the RSR grant shall be governed by the terms of the LTISP, the Guide, and the grant certificate.

11. TERMINATION OF EMPLOYMENT BY THE COMPANY:

A. The Company shall have the right to terminate the term of this Agreement and Executive's employment at any time, with or without Cause, upon giving at least 10 day's advance written notice to the Executive of the date when such termination shall become effective. If the Company terminates Executive's employment without "Cause" (as that term is defined below) during the term of this Agreement, then Executive shall receive, within 30 days after he signs a release (substantially in the form of Exhibit C hereto) which is not revoked, the Accrued Obligations (as defined below) (with the exception of certain benefits under Accrued Obligations, which will be paid as soon as administratively practicable), and all of the Special Severance Benefits set forth in Sections 15.A and 15.C of this Agreement, and the Benefit Continuation set forth in Section 15.B shall commence as of the date of such termination.

For purposes of this Agreement, "Cause" shall mean the occurrence of either or both of the following: (i) the willful misconduct by the Executive with regard to the Company that is significantly injurious to the Company, provided, however, that no act or failure to act on the Executive's part shall be considered "willful" unless done, or omitted to be done, by the Executive not in good faith and without reasonable belief that his action or omission was in the best interests of the Company; or (ii) the conviction of the Executive of (or the pleading by the Executive of nolo contendere to) any felony (other than traffic related offenses or as a result of vicarious liability).

B. Notwithstanding the foregoing, the Executive shall not be deemed to have been terminated for Cause unless the provisions of this paragraph B are complied with. Executive shall be given written notice by the Board of the intention to terminate him for Cause, and he shall then be entitled to a meeting before the Board to present his position, provided he requests in writing such a meeting within ten calendar days of his receipt of the written notice from the Board of the intention to terminate him. Following such a meeting, if Executive is then furnished written notice by the Board confirming that, in its judgment, grounds for Cause on the basis of the original notice exist, Executive shall thereupon be terminated for Cause, which determination shall be subject to review by the arbitrator on a de novo basis.

C. In the event that Executive is terminated for "Cause," Executive will be entitled to receive only (w) any unpaid base salary through the date of termination and any accrued and unpaid vacation; (x) any unpaid bonus for services rendered during the

calendar year prior to the calendar year in which the termination occurs; (y) reimbursement for any unreimbursed expenses incurred through the date of termination; and (z) all other payments, benefits or fringe benefits to which Executive may be entitled subject to, and in accordance with, the terms of any applicable compensation arrangement or benefit, equity or fringe benefit plan or program or grant (including, but not limited to, any then vested stock options, RPSRs or RSRs) (collectively, (w) through (z) are referred to as “Accrued Obligations”), and will not receive any of the Special Severance Benefits set forth in Section 15.

12. **TERMINATION OF EMPLOYMENT BY DEATH OR DISABILITY OF EXECUTIVE:**

A. **Death:** In the event that Executive dies during the term of this Agreement, this Agreement shall automatically terminate as of the date of death without further obligation on the part of the Company, except that the Company shall pay to Executive’s estate, within 30 days of death, the Accrued Obligations (with the exception of certain benefits under certain Accrued Obligations, which shall be paid as soon as administratively practicable), all of the Special Severance Benefits set forth in Sections 15.A and 15.C of this Agreement, and the Benefit Continuation set forth in Section 15.B shall apply to his eligible dependents commencing as of the date of death.

B. **Disability:** If the Executive’s employment terminates by reason of his Disability (as defined below) during the term of this Agreement, this Agreement shall

terminate without further obligation to Executive, except that the Company shall provide to Executive, within 30 days after he signs a release (substantially in the form of Exhibit C hereto) which is not revoked, the Accrued Obligations (with the exception of certain benefits under Accrued Obligations, which shall be paid as soon as administratively practicable), and all of the Special Severance Benefits set forth in Sections 15.A and 15.C of this Agreement. In such circumstances, the Benefit Continuation set forth in Section 15.B shall commence as of the date of such termination and shall, subject to Executive's prompt execution of a release (substantially in the form of Exhibit C hereto) which is not revoked, continue for the period of time contemplated by Section 15.B. For purposes of this Agreement, "Disability" shall be defined as the inability of the Executive to perform his material duties hereunder due to the same or a related physical or mental injury, infirmity or incapacity for 180 days in any 365-day period. The Company may terminate the Executive for a Disability as of the end of the aforementioned period or at any time thereafter during which the Disability continues upon 30 days prior written notice provided the Executive has not returned to full time employment prior to the end of such 30-day period.

13. **TERMINATION OF EMPLOYMENT BY EXECUTIVE FOR GOOD REASON:**

Executive shall have the right to terminate the term of this Agreement and his employment with Northrop Grumman for “Good Reason” as that term is defined below. If Executive terminates his employment for “Good Reason” during the term of this Agreement, Executive shall receive, within 30 days after he signs a release (substantially in the form of Exhibit C hereto) which is not revoked, the Accrued Obligations (with the exception of certain benefits under Accrued Obligations which shall be paid as soon as administratively practicable), and all of the Special Severance Benefits set forth in Sections 15.A and 15.C of this Agreement. In such circumstances, the Benefit Continuation in Section 15.B shall commence as of the date of such termination and shall, subject to Executive’s prompt execution of a release (substantially in the form of Exhibit C hereto) which is not revoked, continue for the period of time contemplated by Section 15.B. For purposes of this Agreement, “Good Reason” shall mean without the Executive’s express written consent, the occurrence of any one or more of the following:

A. any reduction or diminution in the Executive’s then titles or positions (including as a Director), a material reduction in the nature or status of the Executive’s then authorities, duties, and/or responsibilities (when such authorities, duties, and/or responsibilities are viewed in the aggregate), other than an insubstantial and inadvertent act that is remedied by the Company promptly after receipt of notice thereof given by

the Executive; provided that Good Reason will be deemed to exist if the Executive's reporting relationship is changed such that the Executive does not report to the Board;

B. a reduction by the Company of the Executive's base salary as in effect on the Effective Date, or as the same shall be increased from time to time;

C. the election of a Company employee other than Kent Kresa or Executive as Chairman of the Board (the election of a non employee to be Chairman shall not be "Good Reason");

D. any material failure by the Company to comply with any of the provisions of this Agreement, other than isolated and inadvertent failure(s) not occurring in bad faith and remedied by the Company promptly after receipt of notice thereof given by the Executive; or

E. the failure of the Company to obtain a satisfactory agreement from any successor to the Company to assume and agree to perform the Company's obligations under this Agreement, as contemplated in Section 19 herein.

Should Executive desire to terminate his employment for "Good Reason," he shall first give at least 30 days prior written notice of his intent to so terminate to the Board of the Company and give the Company an opportunity to promptly cure the event giving rise to "Good Reason." In addition, such written notice must describe the

event(s) constituting "Good Reason" and must be given to the Board within six months of the event(s).

14. **TERMINATION OF EMPLOYMENT WITHOUT GOOD REASON:** The Executive shall have the right to terminate the term of this Agreement and his employment with Northrop Grumman at any time without Good Reason by giving written notice to the Board at least thirty days in advance of such termination. In the event that Executive's employment with the Company is terminated during the term of this Agreement by Executive without Good Reason, Executive shall not be entitled to any additional payments or benefits hereunder, other than Accrued Obligations.

15. **SPECIAL SEVERANCE BENEFITS:** In the event Executive's employment terminates due to his death or Disability, or if he is terminated by Northrop Grumman without "Cause," or if he terminates employment for "Good Reason," then he shall be entitled to receive the following Special Severance Benefits, provided, however, that he first signs a release of claims (in a form substantially similar to Exhibit C) which is not revoked:

A. **Salary and Bonus:** A payment equal to two times the sum of (i) the Executive's highest annual base salary in effect at any time in the six months preceding the termination of the Executive's employment and (ii) the highest of any of the following: (x) Executive's target bonus percentage under the ICP multiplied by his highest annual base salary in effect at any time in the six months preceding the

termination of the Executive's employment; or (y) the last bonus paid to Executive under the ICP prior to his termination. In addition, the Company shall pay Executive a pro-rata portion of the Executive's target bonus under the ICP for the calendar year in which the Executive's termination occurs (determined by multiplying Executive's target bonus under the ICP for such year by a fraction, the numerator of which is the number of days during the calendar year in which the termination occurs up to and including the date on which Executive's employment by the Company terminates, and the denominator of which is 365).

B. Stock Incentive Continuation: (i) One year of additional vesting for all stock options, RSRs and other stock incentive grants (excluding Restricted Performance Stock Rights ("RPSRs")); (ii) Pro-rata vesting of RPSRs; and (iii) Two year extension of the time period otherwise available to exercise options, but not to exceed the maximum time to exercise set forth in the option grant (this extension does not apply if Executive gets the benefit of the five year exercise period due to retirement).

C. Welfare Benefit Continuation: Three years of continued coverage for Executive and his eligible dependents under the Company's medical, dental, vision and life insurance plans and programs applicable to Executive at the time of his termination, on the same terms and conditions as apply to other elected officers during this three-year period.

D. Other Benefits: In addition to the benefits noted above, the following additional benefits shall be paid Executive: (i) a lump sum payment equal to three times the value of his annual car allowance; (ii) continuation of his then current financial planning benefits through the end of his third financial planning year; (iii) the income tax preparation reimbursement benefit for the year in which he terminates employment and for the following two full calendar years; (iv) outplacement benefits provided through an outside provider selected by the Executive, at a cost not to exceed \$50,000 in total; and (v) any benefits to which Executive is entitled pursuant to Sections 7, 9 or 10 of this Agreement.

The foregoing severance benefits shall be offset by any severance benefits Executive is entitled to receive under any other Company plan, program, practice or agreement, including the Special Agreement.

16. **GROSS-UP FOR SECTION 280G PURPOSES:** In the event that the Executive becomes or has already become entitled to payments and/or benefits or any other amounts in the “nature of compensation” which would constitute “parachute payments” within the meaning of Section 280G of the Internal Revenue Code of 1986, as amended (the “Code”), (including without limitation as a result of this Agreement, or any other plan, arrangement or agreement with the Company or any affiliate (including Litton), or from any person whose actions result in a change of ownership or effective control of the Company or Litton covered by Section 280G(b)(2) of the Code or any person affiliated with the Company or Litton or such person), the provisions of Exhibit B shall

apply. For purposes of Exhibit B, the term “Change in Control” shall mean a change of ownership or effective control (as such terms are used in Section 280G and the proposed regulations thereunder) heretofore or hereafter of the Company or Litton.

17. **NO MITIGATION; NO OFFSET EXCEPT FOR CIC BENEFITS**: Except as set forth in this Agreement, the Company’s obligation to make the payments provided for in this Agreement and otherwise to perform its obligations hereunder shall not be affected by any circumstances, including without limitation, set-off, counterclaim, recoupment, defense or other claim, right or action which the Company may have against the Executive or others; provided, however, that any severance benefits Executive may receive as a result of a change in control of the Company under the Special Agreement (or successor thereto) shall offset any severance benefits Executive is eligible to receive under this Agreement. In no event shall the Executive be obliged to seek other employment or take any other action by way of mitigation of the amounts payable to the Executive under any of the provisions of this Agreement, nor shall the amount of any payment thereunder be reduced by any compensation earned by the Executive as a result of employment by another employer.

18. **TRADE SECRETS**: In the course of performing his duties for his former employer Litton and for the Company, Executive will receive, and acknowledges that he has received, confidential information, including without limitation, information not available to competitors relating to the Company’s existing and contemplated financial plans, products, business plans, operating plans, research and development

information, and customer information, all of which is hereinafter referred to as "Trade Secrets." Executive agrees that he will not, either during his employment or subsequent to the termination of his employment with the Company, directly or indirectly disclose, publish or otherwise divulge any Northrop Grumman or Litton Trade Secrets to anyone outside the Company, or use such information in any manner which would adversely affect the business or business prospects of the Company; provided, however, that the foregoing shall not preclude Executive from complying with due legal process or governmental inquiry or from taking actions or making disclosures while employed by the Company in good faith performance of his duties and obligations hereunder. Executive further agrees that if, at the time of the termination of his employment with the Company, he is in possession of any documents or other written or electronic materials constituting, containing or reflecting Trade Secrets, he will return and surrender all such documents and materials to the Company upon leaving its employ. The restrictions and protection provided for in this paragraph shall be in addition to any protection afforded to Trade Secrets by law or equity.

19. **INVENTIONS:** Executive agrees that all inventions, discoveries and improvements, and all new ideas for manufacturing and marketing products or services of the Company, which Executive has conceived during his prior employment with Litton or may conceive while employed by the Company, whether during or outside business hours, on the premises of the Company or elsewhere, alone or in collaboration with others, or which he has acquired or may acquire from others, whether or not the same can be patented or registered under patent, copyright, or trademark laws, shall be and

become the sole and exclusive property of the Company. Executive agrees to promptly disclose and fully acquaint his management with any such inventions, discoveries, improvements and ideas which he has conceived, made or acquired, and shall, at the request of the Company, make a written disclosure of the same and execute such applications, assignments, and other written instruments as may reasonably be required to grant to the Company sole and exclusive right, title and interest thereto and therein and to enable the Company to obtain and maintain patent, copyright and trademark protection therefore.

20. **NON-SOLICITATION AND NON-DISPARAGEMENT:**

A. For a period of one year following the termination of Executive's employment with the Company, Executive shall not, directly or indirectly, through aid, assistance or counsel, on his own behalf or on behalf of another person or entity (i) solicit or offer to hire any person who was, within a period of six months prior to Executive's termination, employed by the Company, or (ii) by any means issue or communicate any public statement that may be critical or disparaging of the Company, its products, services, officers, directors or employees; provided the foregoing shall not apply to truthful statements made in compliance with legal process or governmental inquiry.

B. For a period of one year following the termination of Executive's employment with the Company, the Company shall not by any means issue or

communicate any public statement that may be critical or disparaging of the Executive, provided the foregoing shall not apply to truthful statements made in compliance with legal process, governmental inquiry or as required by legal filing or disclosure requirements.

21. **ASSIGNMENT**: This Agreement is personal to Executive and shall not be assigned by him. However, this Agreement shall be binding upon any entity succeeding to all or substantially all of the assets or business of the Company, whether by merger, consolidation, acquisition or otherwise and may not otherwise be assigned by the Company.

22. **TAX WITHHOLDING**: The Company shall be entitled to withhold from any amounts payable 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).

23. **SAVINGS CLAUSE**: If any provision under this Agreement or its application is adjudicated to be invalid or unenforceable, such invalidity or unenforceability shall not affect any other provision or application of this Agreement which can be given effect without the invalid or unenforceable provision or application.

24. **ENTIRE AGREEMENT**: This Agreement represents the complete agreement and understanding between Executive and the Company pertaining to the subject

matters contained herein, and supersedes all prior agreements or understandings, written or oral, between the Parties with respect to such subject matters. The Special Agreement, as well as any and all obligations of Executive and rights of the Company, Litton, TRW Inc. or any of their respective affiliates under any prior confidentiality or proprietary information agreement, are outside of the scope of the preceding sentence.

25. **INDEMNIFICATION:** The Company hereby covenants and agrees to indemnify Executive and hold him harmless to the fullest extent permitted by law and under the By-laws of the Company against and in respect to any and all actions, suits, proceedings, claims, demands, judgments, costs, expenses (including attorney's fees), losses, and damages resulting from the Executive's good faith performance of his duties and obligations with the Company or with Litton or TRW (including service prior to the Effective Date hereof). The Company, within 30 days of presentation of invoices, shall, to the extent permitted by law, advance to Executive reimbursement of all legal fees and disbursements incurred by Executive in connection with any potentially indemnifiable matter; provided, however, that in order to receive such advanced fees and disbursements, Executive must first sign an undertaking reasonably satisfactory to the Company that he will promptly repay the Company all advanced fees and disbursements in the event it is finally determined that Executive cannot be indemnified for the matter at issue under applicable law or Company By-laws; and provided further, that Executive shall consult with the Company prior to selecting his counsel and shall make a reasonable effort to select counsel reasonably acceptable to the Company. In addition, the Company and Executive have previously entered into a separate

Indemnification Agreement, in the form previously entered into with other senior officers of the Company, which shall also be deemed to cover the Executive's performance of services with the Company, Litton and TRW (including service prior to the effective date hereof).

26. **LIABILITY INSURANCE**: The Company shall cover Executive under directors and officers liability insurance both during and, while potential liability exists (but no less than six years), after the term of this Agreement in the same amount and to the same extent, if any, as the Company covers its other officers and directors.

27. **ARBITRATION**: Any dispute or controversy arising under or in connection with this Agreement or arising out of or in connection with Executive's employment shall be settled exclusively by arbitration, conducted before a single arbitrator (who is a retired federal or state court judge) in the State of California (in the major city nearest Executive's residence) in accordance with the National Rules for the Resolution of Employment Disputes of the American Arbitration Association then in effect. The decision of the arbitrator will be final and binding upon the parties hereto. Judgment may be entered on the arbitrator's award in any court having jurisdiction. The arbitrator may, but need not, award the prevailing party in any dispute (as determined by the arbitrator) its or his legal fees and expenses.

28. **SURVIVAL OF CERTAIN PROVISIONS** The following provisions of this Agreement shall survive and continue to be in effect to the extent applicable following

Executive's termination of employment and any purported termination of the term of this Agreement: Section 7 (retiree medical benefit); Section 10 (special retention benefits); Section 9 (termination of 2001 Employment Agreement); Section 11 (termination of employment by the Company); Section 12 (termination of employment by death or disability of Executive); Section 13 (termination of employment by Executive for good reason); Section 14 (termination of employment without good reason); Section 15 (special severance benefits); Section 16 (gross-up for Section 280G purposes); Section 17 (no mitigation; no offset); Section 18 (trade secrets); Section 19 (inventions); Section 20 (non-solicitation and non-disparagement); Section 22 (tax withholding); Section 25 (indemnification); Section 26 (liability insurance); Section 27 (arbitration); this Section 28 (survival of certain provisions); Section 29 (cooperation with the Company); and Section 30 (governing law). The survival of Section 16 shall also cover payments or benefits received after the termination of employment and this Agreement if resulting from a Change in Control (as defined in Section 16) that occurs prior to such termination and during the term of this Agreement.

29. **COOPERATION WITH THE COMPANY**: During and after the expiration of this Agreement, the Executive shall cooperate with the Company in regard to any matter, dispute or controversy in which the Company is involved, or may become involved, and of which the Executive may have knowledge. Such cooperation at a time when the Executive is no longer employed by the Company or a member of the Board shall be subject to further agreement providing for legally appropriate compensation.

30. **GOVERNING LAW:** This Agreement shall be construed in accordance with and governed by the laws of the State of California without regard to principles of conflict of law.

Dated: February 19, 2003

Executive

By /s/ Ronald D. Sugar

Ronald D. Sugar

Dated: February 19, 2003

NORTHROP GRUMMAN CORPORATION

By: /s/ J. Michael Hateley

J. Michael Hateley
Corporate Vice President and Chief Human
Resources and Administrative Officer

Exhibit A to Employment Agreement

Executive Perquisites for the CEO

- Executive Life Insurance—three times base salary, up to a maximum of \$1,000,000
- Executive Accidental Death and Dismemberment Insurance—6 times base salary, up to a maximum of \$1,000,000
- Travel and Accident Insurance
- Long Term Disability—covers 65% of base pay up to a maximum of \$15,000 per month including social security
- Executive Medical—covers 100% of covered charges for Executive and dependents
- Executive Dental—covers 100% of covered benefits for Executive and dependents with a \$2,000 annual maximum
- Annual Executive Physical Exam
- Personal Liability Insurance of \$10,000,000
- Car Allowance of \$20,000 per year
- Financial Planning and Income Tax Preparation Benefit—covers 100% of combined charges up to a maximum of \$25,000 per year
- Corporate Airline Travel
- First Class Air Travel
- Payment for Two Airline Clubs
- Reimbursement for Two Private Club Membership up to \$5,000 per year
- Business Club Memberships
- Home Security

These perquisites are periodically modified by the Company.

Exhibit B: Gross-Up Provisions

Equalization Payment. If upon or following a Change in Control, the tax imposed by Section 4999 of the Code or any similar or successor tax (the "Excise Tax") applies, solely because of the Change in Control, to any payments, benefits and/or amounts received by the Executive from the Company or any of its subsidiaries as severance benefits or otherwise, including without limitation, any fees, costs and expenses paid under this Agreement and/or any amounts received or deemed received, within the meaning of any provision of the Code, by the Executive as a result of (and not by way of limitation) any automatic vesting, lapse of restrictions and/or accelerated target or performance achievement provisions, or otherwise, applicable to outstanding grants or awards to the Executive under any of the Company's incentive plans, including without limitation, the 2001 Long Term Incentive Stock Plan, the 1993 Long Term Incentive Stock Plan, the 1987 Long Term Incentive Plan and the 1981 Long-Term Incentive Plan, the Company shall pay to the Executive in cash an additional amount or amounts (the "Gross-Up Payment(s)") such that the net amount retained by the Executive after the deduction of any Excise Tax on such payments, benefits and/or amounts so received and any Federal, state and local income tax and Excise Tax upon the Gross-Up Payment(s) provided for by this Section shall be equal to such payments, benefits and/or amounts so received had they not been subject to the Excise Tax. Such payment(s) provided for by this Section shall be equal to such payments, benefits and/or amounts so received had they not been subject to the Excise Tax. Such payment(s) shall be made by the Company to the Executive as soon as practicable following the receipt or deemed receipt of any such payments, benefits and/or amounts so received, and may be satisfied by the Company making a payment or payments on Executive's account in lieu of withholding for tax purposes but in all events shall be made within thirty (30) days of the receipt or deemed receipt by the Executive of any such payment, benefit and/or amount.

Tax Computation. For purposes of determining whether any payments, benefits and/or amounts, including amounts paid as severance benefits, will be subject to Excise Tax, and the amount of any such Excise Tax:

- (a) Any other payments, benefits and/or amounts received or to be received by the Executive in connection with or contingent upon a Change in Control of the Company or the Executive's termination of employment, (whether pursuant to the terms of this Agreement or any other plan, arrangement or agreement with the Company, or with any Person whose actions result in a Change in Control of the Company or any person affiliated with the Company or such Persons) shall be combined to determine whether the Executive has received any "parachute payment" within the meaning of Section 280G(b)(2) of the Code, and if so, the amount of any "excess parachute payments" within the meaning of Section 280G(b)(1) that shall be treated as subject to the Excise Tax, unless in the opinion of tax counsel selected by the Company's

independent auditors and acceptable to the Executive, such other payments, benefits and/or amounts (in whole or in part) do not constitute parachute payments, or such excess parachute payments represent reasonable compensation for services actually rendered within the meaning of Section 280G(b)(4) of the Code in excess of the base amount within the meaning of Section 280G(b)(3) of the Code, or are otherwise not subject to the Excise Tax;

- (b) The value of any non-cash benefits or any deferred payment or benefit shall be determined by the Company's independent auditors in accordance with the principles of Section 280G(d)(3) and (4) of the Code.

For purposes of determining the amount of the Gross-Up Payment, the Executive shall be deemed to pay Federal income taxes at the highest marginal rate of Federal income taxation in the calendar year in which the Gross-Up Payment is to be made. Such highest marginal rate shall take into account the loss of itemized deduction by the Executive and shall also include the Executive's share of the hospital insurance portion of FICA and state and local income taxes at the highest marginal rate of taxation in the state and locality of the Executive's residence on the Effective Date of termination, net of the maximum reduction in Federal income taxes that could be obtained from the deduction of such state and local taxes.

Subsequent Recalculation. In the event the Internal Revenue Service adjusts the computation of the Company under this Section herein, so that the Executive did not receive the greatest net benefit, the Company shall reimburse the Executive as provided herein for the full amount necessary to place the Executive in the same after-tax position as he would have been in had no Excise Tax applied.

EXHIBIT C

RELEASE AGREEMENT

1. PARTIES: The parties to this Release Agreement (referred to hereafter as "Agreement") are **DR. RONALD D. SUGAR** (referred to hereafter as "Executive") and **NORTHROP GRUMMAN CORPORATION** (referred to hereafter as "Northrop Grumman" or the "Company").

2. RECITALS: This Agreement is made with reference to the following facts:

2.1 Executive and Northrop Grumman are parties to an Employment Agreement, one of the terms of which provides Executive, under certain conditions, with Special Severance Benefits in exchange for a release.

2.2 This Agreement is the release Executive is required to sign in order to receive those Special Severance Benefits.

3. CONSIDERATION: In exchange for the Executive's agreement to abide by all of the terms of this Agreement, Northrop Grumman will provide Executive with the Special Severance Benefits set forth in Section 15 of the Employment Agreement.

4. COMPLETE RELEASE: In consideration of the promises contained herein, and for other good and valuable consideration the receipt of which is hereby acknowledged, Executive

does hereby acknowledge full and complete satisfaction of and does hereby agree to release, absolve and discharge Releasees (as defined below) from all claims, causes of action, demands, damages or costs he may have against Releasees on behalf of himself or others arising prior to the date he signs this Agreement. "Releasees" shall mean the Company, its subsidiaries, affiliated and related companies, past, present and future, and each of them, as well as its and their employees, officers, directors, and agents (in their capacities as employees, officers, directors and agents), past and present, and each of them in such capacities.

4.1 This waiver and release includes, but is not limited to, any rights, claims, causes of action, demands, damages or costs arising under the Age Discrimination in Employment Act, which prohibits discrimination in employment based on age, and retaliation; Title VII of the Civil Rights Act of 1964, which prohibits discrimination in employment based on race, color, religion, sex or national origin, and retaliation; the Americans with Disabilities Act, which prohibits discrimination based on disability and retaliation; the California Fair Employment and Housing Act, which prohibits discrimination in employment based on race, color, religion, sex, sexual orientation, national origin, ancestry, physical disability, mental disability, medical condition, marital status or age, and retaliation; or any other federal, state or local laws or regulations prohibiting employment discrimination or retaliation whether such claim be based upon an action filed by Executive or by any governmental agency.

4.2 This waiver and release also includes, but is not limited to, any rights, claims, causes of action, demands, damages or costs arising under Executive's Employment Agreement, or in relation to the Company's employee handbook and personnel policies, or any oral or

written representations or statements made by officers, directors, lawyers, employees or agents of the Company, past and present, and each of them, or under any state or federal law regulating wages, hours, compensation or employment, or any claim for retaliation, wrongful discharge, breach of contract, breach of the implied covenant of good faith and fair dealing, intentional or negligent infliction of emotional distress, intentional or negligent misrepresentation, or defamation.

4.3 This waiver and release also includes, but is not limited to, any rights, claims, causes of action, demands, damages or costs arising under or in relation to any severance plan, program, or arrangement.

4.4 This waiver and release also includes, but is not limited to, any rights, claims, causes of action, demands, damages or costs arising under the federal False Claims Act.

4.5 This release covers both claims that Executive knows about and those he may not know about. Executive hereby specifically waives and relinquishes all rights and benefits provided by Section 1542 of the Civil Code of the State of California, and does so understanding and acknowledging the significance of this specific waiver of Section 1542. Section 1542 of the Civil Code of the State of California states as follows:

“A general release does not extend to claims which the creditor does not know or suspect to exist in his favor at the

time of executing the release, which if known by him must have materially affected his settlement with the debtor.”

4.6 Notwithstanding the provisions of Section 1542 and for the purpose of implementing a full and complete release, Executive expressly acknowledges that this Agreement is intended to include all claims which he does not know or suspect to exist in his favor at the time of his signature on the Agreement, and that this Agreement will extinguish any such claims

4.7 Notwithstanding anything to the contrary herein, this Agreement does not waive or release: (i) any rights or claims which Executive may have under the Age Discrimination in Employment Act or other laws which arise after the date he signs this Agreement, (ii) any rights or claims Executive may have under his Employment Agreement with the Company which survive termination of employment; (iii) any rights Executive may have for indemnification from the Company; (iv) any rights which Executive may have under the Company’s Directors and Officers liability insurance policy; (v) any rights Executive may have under stock option, RPSR, RSR or other stock incentive grants provided to him by the Company; (vi) any rights Executive may have as a shareholder of Northrop Grumman; and (vii) any rights Executive may have to vested benefits under any Company employee benefit plan.

5. ARBITRATION: Any dispute or controversy arising under or in connection with this Agreement shall be settled exclusively by arbitration, conducted before a single

arbitrator in the State of California (in the major city nearest Executive's residence) in accordance with the National Rules for the Resolution of Employment Disputes of the American Arbitration Association then in effect. The decision of the arbitrator will be final and binding upon the parties hereto. Judgment may be entered on the arbitrator's award in any court having jurisdiction. The arbitrator may, but need not, award the prevailing party in any dispute (as determined by the arbitrator) its or his legal fees and expenses.

6. **PERIOD FOR REVIEW AND CONSIDERATION OF AGREEMENT; ADVICE OF COUNSEL** : Executive agrees and understands that he has been given a period of twenty-one (21) calendar days from his receipt of this Agreement to review and consider this Agreement before signing it. Executive further understands that he may use as much of this review period as he wishes prior to signing; he can sign this Agreement at any time prior to the expiration of the twenty-one calendar day period. At the end of this period, this offer of Special Severance Benefits will be deemed automatically withdrawn if not earlier signed by Executive and delivered to the Company. Executive is advised and encouraged to consult with his own legal counsel prior to signing this Agreement.

7. **RIGHT TO REVOKE AGREEMENT**: Executive may revoke this Agreement within seven (7) calendar days of signing it. Revocation can be made by delivering a written notice of revocation to Chief Human Resources Officer, Northrop Grumman Corporation, 1840 Century Park East, Los Angeles, CA 90067. For this revocation to be effective, written notice must be received by the Chief Human Resources Officer no later than 5:00 p.m. PST on the seventh calendar day after Executive signs this Agreement. If

Executive revokes this Agreement, it shall not be effective or enforceable, and Executive will not receive the benefits described in Section 3 of this Agreement.

8. **NON-ADMISSION OF LIABILITY**: Nothing contained herein shall be construed as an admission by either Executive or by Northrop Grumman of liability of any kind.

9. **SEVERABILITY**: The provisions of this Agreement are severable, and if any part of it is found to be illegal or invalid and thereby unenforceable, the validity of the remaining parts, terms or provisions shall not be affected and shall remain fully enforceable. The unenforceable part, term or provision shall be deemed not to be a part of this Agreement.

10. **SOLE AND ENTIRE AGREEMENT**: Except as otherwise expressly set forth herein, this Agreement sets forth the entire agreement between the parties hereto, and fully supersedes any and all discussions, prior agreements or understandings between the parties hereto pertaining to the subject matter of this Agreement.

11. **GOVERNING LAW**: This Agreement shall be interpreted and enforced in accordance with the laws of the State of California without regard to rules regarding conflicts of law.

EXECUTIVE ACKNOWLEDGES THAT HE HAS HAD AN OPPORTUNITY TO ASK QUESTIONS, CONFER WITH COUNSEL, AND TO CAREFULLY CONSIDER ALL OF THE PROVISIONS OF THIS AGREEMENT BEFORE SIGNING IT. HE FURTHER AGREES THAT HE HAS READ THIS AGREEMENT, UNDERSTANDS IT, AND IS VOLUNTARILY ENTERING INTO IT.

PLEASE READ THIS AGREEMENT CAREFULLY. IT CONTAINS A RELEASE OF ALL KNOWN AND UNKNOWN CLAIMS.

EXECUTIVE

DATED: _____

BY: _____

NORTHROP GRUMMAN CORPORATION

DATED: _____

BY: _____

TITLE: _____

GUARANTEE

GUARANTEE dated as of January 9, 2003 (this "Guarantee") made by Northrop Grumman Space & Mission Systems Corp., an Ohio corporation ("Guarantor") in favor of and for the benefit of JP Morgan Chase Bank (formerly The Chase Manhattan Bank), as trustee (the "Trustee") for the Holders (as such term is defined in the Indenture referred to below) of the 7-1/8% Notes due 2011 (the "Notes") and the 7-3/4% Debentures due 2031 (the "Debentures") of Northrop Grumman Systems Corporation, a Delaware corporation (formerly Northrop Grumman Corporation) (the "Company"). The Notes and the Debentures shall be referred to collectively as the "Securities".

WHEREAS, the Company has entered into an Indenture dated as of October 15, 1994 between the Company and the Trustee, as supplemented by that certain Officers' Certificate attached hereto as Exhibit A dated as of February 22, 2001 establishing the Securities (as so supplemented, and as further amended, modified and supplemented from time to time with respect to the Securities, the "Indenture"). Capitalized terms not otherwise defined herein shall have the meanings set forth in the Indenture; and

WHEREAS, the Company offered and sold \$750,000,000 aggregate principal amount of Notes and \$750,000,000 aggregate principal amount of Debentures in 2001; and

WHEREAS, the Company and its affiliates (including, without limitation, the Guarantor) derive, and expect to continue to derive, substantial direct and indirect benefit from the transactions financed by the issuance and sale of the Securities; and

WHEREAS, Section 11 of the Guarantee dated as of April 3, 2000, executed by Northrop Grumman Corporation in favor of the Trustee provides that the Guarantor shall execute and delivery this Guarantee upon the occurrence of certain events.

NOW, THEREFORE, in consideration of the foregoing, the Guarantor hereby agrees as follows:

SECTION 1. Guarantee; Limitation of Liability.

(a) The Guarantor irrevocably and unconditionally guarantees as a primary obligor and not merely as a surety, to the Trustee and to each Holder of a Security authenticated and delivered by the Trustee the due and punctual payment of the principal of and any premium and interest on such Security (including, in case of default, interest on overdue principal and interest) and including any additional interest required to be paid according to the terms of the Securities or the Indenture, when due, whether at stated maturity, upon redemption or repayment, upon declaration of acceleration or otherwise according to the terms of the Securities or the Indenture and the due and punctual performance of all other obligations of the Company to such Holder or the Trustee, all in accordance with the terms of the Securities and the Indenture (such

obligations being the “Guaranteed Obligations”), and agrees to pay any and all expenses (including reasonable counsel fees and expenses) incurred by such Holder or the Trustee in enforcing any rights under this Guarantee. Without limiting the generality of the foregoing, the Guarantor’s liability shall extend to all amounts that constitute part of the Guaranteed Obligations and would be owed by the Company to such Holder or the Trustee under the Securities or the Indenture but for the fact that they are unenforceable or not allowable due to the existence of a bankruptcy, reorganization or similar proceeding involving the Company because it is the intention of the Guarantor, the Trustee and the Holders that the Guaranteed Obligations should be determined without regard to any rule of law or order that might relieve the Company of any portion of the Guaranteed Obligations.

(b) Notwithstanding anything to the contrary in this Agreement, the Guarantor hereby, and the Trustee and each Holder by accepting the benefits of this Guarantee, confirms that it is its intention that the guarantee by the Guarantor pursuant to this Guarantee together with each other guarantee by such Guarantor of Participating Indebtedness (as defined below) shall not constitute a fraudulent transfer or conveyance for purposes of any applicable provisions of Title 11 of the United States Code, the Uniform Fraudulent Conveyance Act, the Uniform Fraudulent Transfer Act, or any similar federal or state law. To effectuate the foregoing intention, the obligations of the Guarantor under this Guarantee and each other guarantee of Participating Indebtedness shall be limited, collectively, to such maximum amount as will, after giving effect to such maximum amount and all other liabilities of such Guarantor, contingent or otherwise, that are relevant under such laws, and after giving effect to any rights to subrogation, reimbursement, indemnification or contribution of such Guarantor pursuant to applicable law or pursuant to any agreement, result in the obligations of such Guarantor in respect of such maximum amount not constituting a fraudulent transfer or conveyance. The Trustee and each Holder by accepting the benefits of this Guarantee confirms its intention that, in the event of a bankruptcy, reorganization or other similar proceeding of the Guarantor in which concurrent claims are made upon such Guarantor hereunder and under any other guarantee of Participating Indebtedness, to the extent such claims will not be fully satisfied, each such claimant with a valid claim against the Guarantor shall be entitled to a ratable share of all payments by such Guarantor in respect of such concurrent claims. For purposes of this Section 1(b), “Participating Indebtedness” means any Indebtedness (as defined below) of the Company that is guaranteed by such Guarantor pursuant to a guarantee (i) the incurrence of which is not prohibited by the terms of the Indenture or any agreement governing any other Participating Indebtedness then outstanding (or, if so prohibited by the Indenture or any such agreement, is permitted as a result of a consent or waiver thereunder) and (ii) that contains a limitation of liability and confirmation of intention regarding ratability of payments on substantially the terms set forth in this Section 1(b). “Indebtedness” means any indebtedness, whether or not contingent, in respect of borrowed money or evidenced by bonds, notes, debentures or similar instruments or letters of credit and, to the extent not otherwise included, the guarantee by the Company of any indebtedness of any other Person.

(c) Anything contained herein to the contrary notwithstanding, the liability of the Company in respect of the Securities guaranteed by the Guarantor hereunder shall not be limited by the terms of Section 1(b).

SECTION 2. Guarantee Absolute. The Guarantor guarantees that the Guaranteed Obligations will be paid or performed strictly in accordance with the terms of the Securities and the Indenture, regardless of any law, regulation or order now or hereafter in effect in any jurisdiction affecting any of such terms or the rights of any Holder with respect thereto. The obligations of the Guarantor under this Guarantee are independent of the Guaranteed Obligations, and a separate action or actions may be brought and prosecuted against such Guarantor to enforce this Guarantee, irrespective of whether any action is brought against the Company or whether the Company is joined in any such action or actions. The liability of the Guarantor under this Guarantee shall be absolute and unconditional irrespective of:

(a) any lack of validity or enforceability of the Securities or the Indenture or any agreement or instrument relating to the Securities or the Indenture or any failure to enforce the provisions thereof;

(b) any renewal, extension or other change in the time, manner or place of payment or performance of, or in any other term of, all or any of the Guaranteed Obligations, or any other amendment or waiver of or any consent to the departure from the Securities or the Indenture;

(c) any settlement, compromise, release or discharge, or acceptance or refusal of any offer of performance with respect to, or any substitution for, the Guaranteed Obligations or any agreement related thereto and/or any subordination of the payment of the same to the payment of any other obligations;

(d) any taking, exchange, release or non-perfection of any mortgage, lien, pledge, charge, security interest or encumbrance of any kind, whether or not filed, recorded or otherwise perfected under applicable law (each a "Lien"), in any real or personal property to secure payment or performance of any or all of the Guaranteed Obligations (whether now or hereafter granted, the "Collateral"), or any taking, release, amendment, waiver of, or consent to the departure from, any other guarantee, for all or any of the Guaranteed Obligations;

(e) any manner of application of Collateral, or proceeds thereof, to all or any of the Guaranteed Obligations, or any manner of sale or other disposition of any Collateral or any other assets of the Company or any Subsidiary;

(f) any change, restructuring or termination of the corporate structure or existence of the Company or any Subsidiary; or

(g) any other circumstance (including, without limitation, any statute of limitations) that might otherwise constitute a defense available to, or a discharge of, the Company or the Guarantor of the Guaranteed Obligations.

This Guarantee shall continue to be effective or be reinstated, as the case may be, if at any time any payment of any of the Guaranteed Obligations is rescinded or must otherwise be returned by any Holder or the Trustee upon the insolvency, bankruptcy or reorganization of the Company or for any other reason, all as though such payment had not been made. The Guarantor further agrees, to the fullest extent that it may lawfully do so, that, as between such Guarantor on the one hand, and the Holders and the Trustee, on the other hand, (i) the maturity of the obligations guaranteed hereby may be accelerated as provided in Article Five of the Indenture for the purposes of this Guarantee, notwithstanding any stay, injunction or other prohibition extant under any applicable bankruptcy law preventing such acceleration in respect of the obligations guaranteed hereby and (ii) in the event of any declarations of acceleration of such obligations as provided in Article Five of the Indenture, such obligations (whether or not due and payable) shall forthwith become due and payable by the Guarantor for the purpose of this Guarantee. In addition, without limiting the foregoing provision, upon effectiveness of an acceleration under Article Five of the Indenture, the Trustee shall promptly make a demand for payment on the Securities under this Guarantee provided for hereunder and not discharged.

SECTION 3. Waivers.

(a) The Guarantor hereby waives: (i) promptness, diligence, presentment, notice of acceptance and any other notice with respect to any of the Guaranteed Obligations and this Guarantee, (ii) any requirement to file any claims with a court in the event of merger or bankruptcy of the Company or any guarantor of the Guaranteed Obligations, (iii) any right to require a proceeding first against the Company or any other guarantor of the Guaranteed Obligations, (iv) the benefit of discussion or protest or notice with respect to any such Securities or the Indebtedness evidenced thereby, (v) any requirement that any Holder or the Trustee protect, secure, perfect or insure any Lien or any Collateral subject thereto or exhaust any right or take any action against the Company or any other Person or any Collateral, (vi) any defense arising by reason of the incapacity, lack of authority or any disability or other defense of the Company, (vii) any defense based upon any statute or rule of law which provides that the obligation of a surety must be neither larger in amount nor in any other respects more burdensome than that of the principal, (viii) any defense based upon any errors or omissions of the Trustee or the Holders' administration of the Guaranteed Obligations, and (ix) any rights to set-offs, recoupments and counterclaims.

(b) The Guarantor hereby irrevocably waives all right to trial by jury in any action, proceeding or counterclaim (whether based on contract, tort or otherwise) arising out of or relating to any of the Securities or the Indenture, the transactions contemplated thereby or the actions of the Trustee in the negotiation, administration, performance or enforcement thereof.

SECTION 4. Financial Condition of the Company. The Guarantor represents and warrants that it is presently informed of the financial condition of the Company and of all other circumstances which a diligent inquiry would reveal and which bear upon the risk of nonpayment of the Guaranteed Obligations. The Guarantor hereby covenants that it will continue to keep itself informed of the Company's financial condition and of all other circumstances which bear upon the risk of nonpayment and hereby waives any duty on the part

of the Trustee or any Holder to disclose or discuss with such Guarantor its assessment, or such Guarantor's assessment, of the financial condition of the Company.

SECTION 5. Subrogation. The Guarantor will not exercise any rights that it may acquire by way of subrogation under this Guarantee, by any payment made hereunder or otherwise, until all the Guaranteed Obligations shall have been indefeasibly paid in full in cash. If any amount shall be paid to the Guarantor on account of any such subrogation rights at any time when all the Guaranteed Obligations shall not have been paid in full, such amount shall be held in trust for the benefit of the Holders and the Trustee and shall forthwith be paid to the Trustee, on behalf of the Holders, to be credited and applied to the Guaranteed Obligations, whether matured or unmatured.

SECTION 6. Amendments, Etc. No amendment or waiver of any provision of this Guarantee and no consent to any departure by the Guarantor therefrom shall in any event be effective unless the same shall be in writing and signed by the Trustee, on behalf of the Holders, pursuant to the provisions of Article Nine of the Indenture, and then such waiver or consent shall be effective only in the specific instance and for the specific purpose for which given.

SECTION 7. Notices, Etc. All notices and other communications provided for hereunder shall be in writing and delivered in person or mailed by first-class mail, if to the Guarantor, addressed to it at the address of the Company at 1840 Century Park East, Los Angeles, California 90067, Attention: Vice President and Secretary, if to any Holder, addressed to it c/o the Trustee at 450 West 33rd Street, 15th Floor, New York, New York 10001, Attention: Institutional Trust Services, and if to the Trustee, addressed to it at 450 West 33rd Street, 15th Floor, New York, New York 10001, Attention: Institutional Trust Services, or as to any party at such other address as shall be designated by such party in a written notice to each other party. All such notices and other communications shall, when mailed by first class mail, be effective when deposited in the first class mails.

SECTION 8. No Waiver; Remedies. No failure on the part of any Holder or the Trustee to exercise, and no delay in exercising, any right hereunder shall operate as a waiver thereof; nor shall any single or partial exercise of any right hereunder preclude any other or further exercise thereof or the exercise of any other right. The remedies herein provided are cumulative and not exclusive of any remedies provided by law.

SECTION 9. Continuing Guarantee. This Guarantee is a continuing guarantee and shall (a) remain in full force and effect until the earlier of the payment in full (including deemed payment pursuant to Section 1302 of the Indenture) of the Guaranteed Obligations and all other amounts payable under this Guarantee, and the termination of this Guarantee pursuant to Section 10 of this Guarantee, (b) subject to the terms hereof, be binding upon the Guarantor, its respective successors and assigns and (c) inure to the benefit of and be enforceable by each Holder and the Trustee and their respective successors, transferees and assigns.

SECTION 10. Guarantor May Consolidate, Etc., on Certain Terms. Except with the consent of the holders of Securities as provided in the Indenture, the Guarantor may not consolidate with or merge into another entity, or convey, transfer or lease its properties and assets substantially as an entirety to any Person unless:

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- (a) any successor entity is a corporation, partnership or trust organized and validly existing under the laws of the United States or any state thereof;
 - (b) the successor entity assumes the Guarantor's obligations under this Guarantee;
 - (c) after giving effect to the transaction, no Event of Default, and no event which, after notice or lapse of time or both, would become an Event of Default, has occurred and is continuing; and
 - (d) the Guarantor delivers to the Trustee certificates and opinions to the effect that the transaction complies with the Indenture.

Upon any such consolidation or merger or conveyance, transfer or lease of the properties and assets of the Guarantor as an entirety to any Person, the successor Person will succeed to, and be substituted for, such Guarantor under the Indenture and this Guarantee, and the Guarantor, except in the case of a lease, will be relieved of all obligations and covenants under the Indenture and this Guarantee.

SECTION 11. Governing Law. This Guarantee shall be governed by, and construed in accordance with, the law of the State of New York.

SECTION 12. Counterparts. This Guarantee may be executed in one or more counterparts, each of which shall be deemed an original but all of which together will constitute one and the same instrument.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the Guarantor has caused this Guarantee to be duly executed and delivered by its officer thereunto duly authorized as of the date first above written.

**NORTHROP GRUMMAN SPACE & MISSION
SYSTEMS CORP.**

By _____

Name:

Title:

By _____

Name:

Title:

NORTHROP GRUMMAN CORPORATION SUBSIDIARIES

Address for all subsidiaries is:

c/o NORTHROP GRUMMAN CORPORATION
 Office of the Corporate Secretary
 1840 Century Park East
 Los Angeles, California 90067

<u>Name of Subsidiary</u>	<u>Jurisdiction of Incorporation</u>	<u>Ownership Percentage</u>
Northrop Grumman Systems Corporation (formerly Northrop Grumman Corporation)	Delaware	100%
Litton Industries, Inc.*	Delaware	100%
Newport News Shipbuilding Inc.	Delaware	100%
Northrop Grumman Space & Mission Systems Corp. (formerly TRW Inc.)	Ohio	100%

* Merged into Northrop Grumman Systems Corporation on January 1, 2003.

The company has additional operating subsidiaries, which considered in the aggregate or as a single subsidiary, do not constitute a significant subsidiary.

All above listed subsidiaries have been consolidated in the company's consolidated financial statements.

INDEPENDENT AUDITORS' CONSENT

We consent to the incorporation by reference in Registration Statement Nos. 33-59815, 33-59853, 333-68003, 333-61936, 333-67266, 333-100179, 333-100180 and 333-103429 on Form S-8; Registration Statement Nos. 333-78251, 333-85633, 333-71290, and 333-77056 on Form S-3; and Registration Statement Nos. 333-40862, 333-54800, and 333-83672 on Form S-4 of our report dated March 18, 2003, appearing in this Annual Report on Form 10-K of Northrop Grumman Corporation for the year ended December 31, 2002.

Los Angeles, California
March 18, 2002

**POWER OF ATTORNEY IN CONNECTION WITH THE
2002 ANNUAL REPORT ON FORM 10-K**

KNOW ALL MEN BY THESE PRESENTS, that each of the undersigned directors and officers of NORTHROP GRUMMAN CORPORATION, a Delaware corporation, does hereby appoint W. BURKS TERRY and JOHN H. MULLAN, and each of them as his or her agents and attorneys-in-fact (the "Agents"), in his or her respective name and in the capacity or capacities indicated below, to execute and/or file the Annual Report on Form 10-K for the fiscal year ended December 31, 2002 (the "Report") under the Securities Exchange Act of 1934, as amended (the "Act"), and any one or more amendments to any part of the Report that may be required to be filed under the Act (including the financial statements, schedules and all exhibits and other documents filed therewith or constituting a part thereof) and to any part or all of any amendment(s) to the Report, whether executed and filed by the undersigned or by any of the Agents. Further, each of the undersigned does hereby authorize and direct the Agents to take any and all actions and execute and file any and all documents with the Securities and Exchange Commission (the "Commission"), which they deem necessary or advisable to comply with the Act and the rules and regulations or orders of the Commission adopted or issued pursuant thereto, to the end that the Report shall be properly filed under the Act. Finally, each of the undersigned does hereby ratify each and every act and documents which the Agents may take, execute or file pursuant thereto with the same force and effect as though such action had been taken or such document had been executed or filed by the undersigned, respectively.

