

# ARCHIVED REPORT

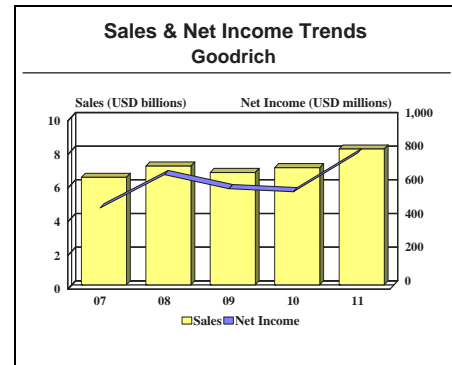
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## Goodrich

### Outlook

- United Technologies and Goodrich agreed to merge in late 2011 in a deal valued at \$18.4 billion
- Goodrich will become the lead operation in UTC's combined Propulsion and Aerospace Systems unit
- To meet the increased demand, both Airbus and Boeing have raised production rates
- Goodrich remains well positioned for future growth based on its increased content on new commercial and military aircraft



### Headquarters

The Goodrich Corporation  
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BFGoodrich, formed in 1870 by Dr. Benjamin Franklin Goodrich, rapidly became a leading manufacturer of rubber products, especially tires. In 1986, the company exited the tire business and focused on its growing aerospace and performance-materials businesses.

In 1997, a \$1.3 billion merger with Rohr nearly doubled the size of BFG's aerospace segment and made it a leading producer of aircraft nacelle systems. Soon after

this acquisition, a 1999 merger with Coltec Industries created a multi-industry company with leading positions in aerospace and engineered industrial products.

To reflect the changed composition of the company, BFGoodrich changed its name to Goodrich in 2001.

In September 2011, Goodrich entered into a merger agreement with United Technologies Corporation (UTC). This merger should be completed in mid-to-late 2012.

Today, Goodrich Corporation provides aerospace and engineered industrial products and services to customers around the world. The company employed more than 28,000 people – 17,000 in the United States and 11,000 abroad – as of early 2012.

### Structure and Personnel

Marshall O. Larsen  
Chairman, President and Chief Executive Officer  
John J. (Jack) Carmola  
Segment President, Actuation and Landing Systems  
Cynthia M. Egnotovich  
Segment President, Nacelles and Interior Systems  
Curtis Reusser  
Segment President, Electronic Systems  
Jerry Witowski  
Executive Vice President, Operational Excellence and

Technology  
Terrence G. Linnert  
Executive Vice President, Administration and  
General Counsel

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Scott E. Kuechle

Executive Vice President and Chief Financial Officer

Jennifer Pollino

Senior Vice President, Human Resources

Karl Kleiderer

Vice President, Mergers and Acquisitions

Scott Cottrill

Vice President and Controller

Sally L. Geib

Vice President, Associate General Counsel and Secretary

Mike McAuley

Vice President and Treasurer

Frank A. DiPiero

Vice President & Segment Counsel, Electronic Systems and Secretary

Wendy Taylor

Vice President, Internal Audit

## Product Area

Goodrich is a provider of aerospace components, systems and services to the commercial and general aviation markets as well as the defense and space industries. Products include aircraft engine nacelles, pylons, and thrust reversers; wheels; brakes and landing gear; emergency evacuation systems; sensors; and ice protection systems. The company also supplies instruments and avionics, and flight management and control systems. In addition, Goodrich has established itself as a premier supplier of aircraft maintenance, repair, and overhaul (MRO) services. Goodrich's current structure is as follows:

1. Actuation and Landing Systems
  - 1.1 Landing Gear
  - 1.2 Aircraft Wheels and Brakes
  - 1.3 Actuation Systems
  - 1.4 Engine Components
    - 1.4.1 Turbine Fuel Technologies
    - 1.4.2 Turbomachinery Products
    - 1.4.3 Power Transmission
2. Electronic Systems
  - 2.1 Sensors and Integrated Systems
  - 2.2 Engine Control and Electrical Power Systems
    - 2.2.1 Engine Control Systems
    - 2.2.2 Electrical Power Systems
  - 2.3 ISR Systems
3. Nacelles and Interior Systems
  - 3.1 Aerostructures
    - 3.1.1 Engineered Polymer Products
  - 3.2 Interiors
    - 3.2.1 Evacuation Systems
    - 3.2.2 Lighting Systems
    - 3.2.3 Cargo Systems
    - 3.2.4 Propulsion Systems
    - 3.2.5 Specialty Seating Systems
  - 3.3 Customer Services

### Actuation and Landing Systems

Landing Gear. This group manufactures aircraft landing gear, aircraft wheels and brakes, and high-temperature

composites for commercial, military, regional, and business aviation customers, as well as for space programs.

Aircraft Wheels and Brakes manufactures and services aircraft wheels and brakes for a variety of commercial, regional, business, and military applications.

Actuation Systems supplies a full range of aircraft actuation systems, including primary and secondary flight controls, engine and nacelle actuation systems, main and tail rotor actuation systems for helicopters, and utility actuation systems for military aircraft, such as the weapons bay door on the Joint Strike Fighter.

Engine Components is composed of three operations:

*Turbine Fuel Technologies*. This unit specializes in the design, development, and manufacture of gas turbine fuel injection components.

*Turbomachinery Products*. This operation produces precision turbomachinery products as a subcontractor to aviation industry primes.

*Power Transmission*. This unit produces drive shafts and couplings as well as hydraulic actuation systems.

### Electronic Systems

Sensors and Integrated Systems produces actuation and control systems, specialty products and systems, temperature sensors, utility systems, vehicle health management systems, in-flight entertainment systems, mission data systems, air data products and systems, fire protection systems, flight deck products and systems, fuel measurement/management systems, ice detection and protection systems, rate gyros and inertial sensors, rescue hoists and cargo winches, and security, surveillance and monitoring systems.

Engine Control and Electrical Power Systems consists of two units:

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*Engine Control Systems* products include fuel metering controls, fuel pumping systems, electronic controls (software and hardware), variable geometry actuation controls, and engine health monitoring systems. These systems are utilized on both civil and military aircraft.

*Electrical Power Systems* produces aircraft electrical power generation systems.

ISR Systems builds high-performance custom-engineered electronics, optics, shortwave infrared cameras and arrays, intelligence exploitation systems, and electro-optical products for defense, scientific, and commercial applications.

### **Nacelles and Interior Systems**

Aerostructures. This operation's core products are nacelle, pylon and flight control surfaces. Products include nacelle thrust reversers, inlet and fan cowls, nozzle assemblies, exhaust systems, and other structural components. This unit also offers MRO services. *Engineered Polymer Products* manufactures composite structures for marine and fireproof applications.

Interiors provides a variety of interior products for commercial aircraft, regional and business jets and military aircraft, including helicopters. It consists of five units:

*Evacuation Systems*. Products include slides and slide/rafts, and life rafts.

*Lighting Systems*. This unit produces all types of lights, including passenger service units, strobe light systems, landing and taxi lights with high-intensity discharge xenon tubes, and LED lights for various applications.

*Cargo Systems*. This unit produces powered cargo-handling systems for fast and easy loading and unloading of aircraft.

*Propulsion Systems* manufactures electro-explosive devices, gas generators, stun grenades, and rocket motors. Also offers complete air crew escape systems, including canopy removal tools, sequencing systems, and the Advanced Concept Ejection Seat (ACES).

*Specialty Seating Systems* provides cockpit and cabin crew seats for business, regional, commercial and military aircraft, in addition to fully assembled ejection seats for military aircraft.

Customer Services. This business unit primarily provides aftermarket product support as well as MRO services.

## Facilities

Selected Goodrich facilities are detailed below. For a full listing, please visit:

Web site: <http://www.goodrich.com/Locations>

### **Actuation and Landing Systems**

Landing Gear, 6225 Oak Tree Blvd, Independence OH 44131. Business unit headquarters, military unit headquarters, engineering, customer service, manufacturing, machining, assembly and administration.

Aircraft Wheels and Brakes, 101 Waco St, PO Box 340, Troy, OH 45373. Telephone: + 1 (937) 339-3811. Business unit headquarters and manufacturing. Wheel and brake service center.

Actuation Systems, Stafford Rd, Fordhouses, Wolverhampton WV10 7EH, U.K. Telephone: + 44 1902 624 644. Business unit headquarters, Manufacturing, maintenance and product support.

Engine Components, PO Box 65100, 811 Fourth St, West Des Moines, IA 50265. Telephone: + 1 (515) 274-1561. Product support operations, service center and research.

Engine Components, Blades and Vanes, 323 S Bracken Ln, Chandler, AZ 85224. Telephone: + 1 (480) 857-5700. Manufacturing

### **Electronic Systems**

Sensors and Integrated Systems, 14300 Judicial Rd, Burnsville, MN 55306-4898. Telephone: + 1 (952) 892-4000. Business unit headquarters. Air data sensors, angle of attack systems, electronic flight bags, engine sensors and sensing suites, ice detection and protection systems, rate gyros and inertial sensors, SmartProbe air data systems, temperature sensors, security and surveillance systems, windshield wiper systems.

Sensors and Integrated Systems, 100 Panton Rd, Vergennes, VT 05491. Telephone: + 1 (802) 877-2911. Electric brake control and actuation systems, electro-mechanical actuation systems, data concentrators, fire protection systems, fuel measurement and management systems, proximity sensing system and vehicle management system design, manufacturing and support.

Sensors and Integrated Systems, 1555 Corporate Woods Pkwy, Uniontown, OH 44685. Telephone: + 1 (330) 374-3040. Ice detection and protection systems, potable water systems, specialty composites and heaters, and supplemental heating systems.

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Sensors and Integrated Systems, 1 Cupania Circle, Monterey Park, CA 91755. Telephone: + 1 (323) 837-2715. Airborne mission data, video recording and debrief products for the defense industry, and cabin video systems for commercial airlines.

Engine Control Systems, Charter Oak Blvd, PO Box 330651, West Hartford, CT 06133-0651. North American Operations, small engine engineering, manufacturing and product support.

ISR Systems, 7 Technology Park Dr, Westford MA 01886-3141. Business unit headquarters, defense-related airborne high-, medium- and low-altitude sensor systems and subsystems.

ISR Systems, 100 Wooster Heights Rd, Danbury, CT 06810. High-quality electro-optical and special-purpose products to support critical military and civil space missions. Defense-related laser warning systems, ground and airborne.

ISR Systems, 6600 Gulton Ct NE, Albuquerque, NM 87109. Telephone: + 1 (505) 345-9031. Satellite and launch vehicle electronic systems and engineering.

### Nacelles and Interior Systems

Aerostructures, 850 Lagoon Dr, Chula Vista, CA 92012. Telephone: + 1 (619) 691-4111. Business unit headquarters. Aircraft structures, nacelle and pylon systems and MRO services.

Engineered Polymer Products, 6061 Goodrich Blvd, Jacksonville, FL 32226. Telephone: + 1 (904) 757-3660. Composite structures and component design, manufacturing and product support.

Interiors, 3420 S 7th St, Suite 100, Phoenix, AZ 85040. Telephone: + 1 (602) 243-2200. Business unit headquarters, evacuation systems, slides, slide/rafts and life rafts.

Interiors, Propulsion Systems, 3530 Branscombe Rd, PO Box KK, Fairfield CA 94533. Telephone: + 1 (707) 422-1880. Energetic devices consisting of cartridge-actuated devices, propellant-actuated devices, and linear explosive products.

Goodrich Lighting Systems GmbH, Bertramstrasse 8, 59557 Lippstadt, Germany. Telephone: + 49 2941 7676 0. Designs, develops, manufactures, tests and repairs interior and exterior aircraft lighting products.

Web site: <http://www.goodrich-lighting.com>

## Corporate Overview

Serving the aviation and space markets worldwide, Goodrich is one of the largest suppliers of aircraft systems and components. Virtually every aircraft flying in the world today is equipped or could be serviced by Goodrich.

### New Products and Services

**KC-390 Components.** In May 2012, Goodrich was selected to provide the air data system, ice detector, windshield ice protection controller, and fuel quantity gauging and control system for the new Embraer KC-390 military transport aircraft. Hardware deliveries are expected to begin in 2013. The systems will be provided by Goodrich's Sensors and Integrated Systems teams in Minnesota and Vermont. Goodrich previously had been selected in July 2011 to design and manufacture electro-hydrostatic actuators, electro-backup hydrostatic actuators, actuator electronics, and electrical controls for the fully integrated, fly-by-wire, primary flight control system of the aircraft.

**S-97 Raider Components.** In January 2012, Goodrich announced that it will participate as a member of Sikorsky Aircraft Corporation's S-97 Raider helicopter supplier team that is building a next-generation helicopter for evaluation by the U.S. military in 2014. Goodrich will provide the high-speed flexible couplings and an advanced tail propulser drive shaft

system, a SmartProbe air data system, and a lightweight, efficient LED lighting system. Products will be developed and produced by Goodrich teams in Rome, New York; Burnsville, Minnesota; and Oldsmar, Florida.

**MicroNav.** In September 2011, Goodrich introduced its latest miniature integrated guidance technology device, the MicroNav. This tiny inertial navigation system supports precise, low-cost guidance for a range of applications such as smaller rockets and missiles or aircraft standby instruments. The total volume of the new, integrated device is just over 2 cubic inches (340 cu mm), with a weight of 2.8 ounces (79 grams). The technology was developed by Goodrich's Sensors and Integrated Systems team in Plymouth, U.K.

**ORS-1.** In April 2011, Goodrich delivered the Operationally Responsive Space-1 (ORS-1) satellite. The ORS-1 satellite is equipped with a sensor payload from Goodrich's SYERS-2 multispectral sensor, the primary imaging sensor on the U-2 reconnaissance plane. The ORS-1 spacecraft includes a bus built for Goodrich by ATK Space Systems, based on the system it built for TacSat-3. A Goodrich ground segment formats the image data from the payload sensor to be compatible with the downstream processing, exploitation, and dissemination infrastructure used for the operational SYERS-2 sensor. The satellite was

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manufactured and integrated by Goodrich's ISR Systems team in Danbury, Connecticut. The contract was awarded in November 2008.

**SYERS-2A.** In March 2011, Goodrich was awarded a contract to deliver two upgraded Senior Year Electro-Optical Reconnaissance Sensors (SYERS) to the U.S. Air Force for use on the U-2 platform. These upgrades, known as SYERS-2A, will enhance the U-2's functionality by adding extra multispectral imaging capability to the platform, providing significantly more utility in discerning imagery.

**MRJ Components.** In December 2010, Goodrich signed an agreement with Mitsubishi Aircraft Corporation to supply air data sensors, ice detectors, and windshield heat controllers for the new Mitsubishi Regional Jet (MRJ) aircraft family. Goodrich was earlier selected to provide integrated braking systems, lighting systems, and evacuation systems for the MRJ. The company is also providing the engine nacelles for the Pratt & Whitney PurePower PW1000G engine.

**Submarine Components.** In April 2010, Goodrich was awarded a contract from Northrop Grumman Shipbuilding (now Huntington Ingalls Industries) to manufacture lightweight, composite sail cusps for the next eight Virginia-class nuclear fast attack submarines, collectively referred to as Block III. Delivery of the first sail cusp was scheduled for the second quarter of 2011. Contract value was not disclosed. In January 2010, Northrop Grumman awarded Goodrich a \$49 million contract for various components, including the bow dome and sonar and weapons equipment. Goodrich's Engineered Polymer Products team in Jacksonville, Florida, is building the components.

**Night Vision Technology.** In November 2009, Goodrich was selected by the Defense Advanced Research Project Agency (DARPA) to further develop its shortwave infrared (SWIR) imaging technology for enhanced night vision capability. Under DARPA's Photon Counting Array (PCAR) program, Goodrich will develop materials and circuitry to allow its small, lightweight cameras to provide images under darker conditions than previously possible. Work will be performed at Goodrich's ISR Systems business in Princeton, New Jersey.

**Geared Turbofan Engine Nacelle Systems.** In April 2008, Pratt & Whitney selected Goodrich to be the exclusive provider of the complete nacelle systems for its new Geared Turbofan engine for both the MRJ and the Bombardier CSeries aircraft. The award is expected to generate more than \$5 billion in original equipment and aftermarket revenue for Goodrich during the 25-year period following entry into service. Under the agreement, the Goodrich Aerostructures business unit,

headquartered in Chula Vista, California, will produce the entire nacelle system, including the inlet, fan cowl, thrust reverser, exhaust system, and engine mounts.

### Plant Expansion/Organization Update

**Brea Facility Opened.** In June 2012, Goodrich opened a new facility in Brea, California. The facility is part of Goodrich's Sensors and Integrated Systems business, and employs approximately 260 people. The Brea site will provide rescue hoists, cargo winches, digital data systems and in-flight entertainment products and related services for the aerospace and defense industry. The site will also serve as the business' software center of excellence, providing software design and support to all Sensors and Integrated Systems sites worldwide. The new site combines two former Goodrich facilities in Diamond Bar and Monterey Park, California, and has additional space available for expansion and business growth.

**New Massachusetts Facility Opened.** In June 2011, Goodrich opened a new facility in Westford, Massachusetts. Over the following three years the company expects to employ an additional 200 personnel at the site, which will specialize in the development and manufacture of sensors for Goodrich's intelligence, surveillance and reconnaissance (ISR) business.

**MRO Center Opened in Brazil.** In October 2009, Goodrich opened a new MRO facility in Sao Carlos, Brazil, in the TAM Technological Condominium. The facility, Goodrich do Brasil, will initially focus on repairing International Aero Engines (IAE) V2500-A5 engine inlets, fan cowls and thrust reversers for customers in Latin America and the Caribbean. Capabilities will be expanded in the future to service other nacelle platforms currently operating in the region.

**New Chinese MRO Facility.** In June 2009, Goodrich opened a new facility in China's Tianjin Airport Industrial Park to support nacelle and thrust reverser original equipment as well as MRO activities. The 50,000-square-foot facility performed nacelle and thrust reverser MRO work for customers in the region. In addition, it supported engine buildup and podding work for the Airbus A320 family aircraft final assembly line in Tianjin. The facility was part of Goodrich's Aerostructures business. The facility served as an interim location. In 2010 Goodrich opened a 170,000-square-foot permanent facility in Tianjin directly across from the Airbus final assembly line. The new facility serves as the headquarters for Goodrich's supply chain activities in China.

**ISR Unit Formed.** In February 2008, Goodrich created a new ISR Systems business unit that encompasses the former Optical and Space Systems

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electro-optics units. Products produced by ISR Systems serve military and industrial markets and include long-range reconnaissance sensors, electro-optical technology for space deployment, laser warning systems, and advanced miniature SWIR vision technology. ISR Systems is part of Goodrich's Electronic Systems segment. Headquartered in Chelmsford, Massachusetts, the unit has locations in Danbury, Connecticut; Princeton, New Jersey; Albuquerque, New Mexico; Ithaca, New York; and Malvern in the U.K.

**BFGoodrich Becomes Goodrich.** In June 2001, the BFGoodrich Company officially changed its name to Goodrich Corporation.

### Mergers/Acquisitions/Divestitures

**UTC Merger.** In September 2011, United Technologies Corporation (UTC) reached an agreement to purchase Goodrich for \$18.4 billion. Marshall Larsen, chairman, president and chief executive officer of Goodrich, would become chairman and CEO of a combined UTC Aerospace Systems business unit. The senior leadership team of the combined business will be located in Charlotte, North Carolina. The deal is expected to close in mid-to-late 2012.

Once the Goodrich acquisition is approved, the new UTC structure is expected to be as follows:

1. Aerospace Systems
  - 1.1 Sikorsky
  - 1.2 Propulsion and Aerospace Systems
    - 1.2.1 Goodrich
    - 1.2.2 Hamilton Sundstrand
    - 1.2.3 Pratt & Whitney
2. Climate, Controls & Security
  - 2.1 UTC Fire & Security
  - 2.2 Carrier
3. Otis
4. UTC Power

**Winslow Marine Acquired.** In September 2011, Goodrich acquired Winslow Marine Products Corporation, a provider of life rafts to the corporate aviation, helicopter, and marine markets. Winslow, a privately held company, employs approximately 70 people at its Lake Suzy, Florida, facility. Winslow is now part of Goodrich's Interiors business. Terms of the acquisition were not disclosed.

**Microtecnica Acquired.** In May 2011, Goodrich completed its acquisition of Microtecnica S.r.l. for EUR331 million (\$478 million). Based in Italy and the U.K., Microtecnica is a provider of flight control actuation systems for helicopters, regional and business aircraft, missile actuation systems, and aircraft thermal and environmental control systems. Microtecnica

employs approximately 700 people at facilities located in Turin, Luserna San Giovanni and Brugherio, Italy, and Bristol, U.K. Major customers include AgustaWestland, Alenia, Hamilton Sundstrand, Avio, Bombardier and Eurocopter. Microtecnica will become part of Goodrich's Actuation Systems business, within its Actuation and Landing Systems segment.

Web site: <http://www.microtecnica.net>

**DeCrane Cabin Management Assets Acquired.** In September 2010, Goodrich completed the acquisition of the Cabin Management assets of DeCrane Holdings Co for \$280 million. DeCrane Cabin Management employs approximately 850 people at six facilities located throughout the U.S. Major customers include business jet manufacturers such as Bombardier, Cessna, Dassault, Embraer, Gulfstream and Hawker Beechcraft. Primary products include aircraft seats, molded composites, custom cabinetry, custom veneers and furniture, cabin management systems, and in-flight entertainment systems. The Cabin Management assets became part of Goodrich's Interiors strategic business unit, within its Nacelles and Interior Systems segment. The transaction did not include the aircraft completions business of DeCrane.

**Crompton Technology Acquired.** In June 2010, Goodrich acquired U.K.-based Crompton Technology Group Ltd (CTG), a designer and manufacturer of advanced carbon-fiber composite products for the aerospace, defense, advanced vehicle and clean energy markets. CTG employs approximately 150 people at its Banbury, U.K., facility. CTG is now part of Goodrich's Actuation Systems business. Terms of the acquisition were not disclosed.

Web site: <http://www.ctgltd.co.uk/>

**Atlantic Inertial Systems Acquired.** In December 2009, Goodrich completed the \$375 million acquisition of AIS Global Holdings LLC (AIS), known as Atlantic Inertial Systems, from an investment affiliate of J.F. Lehman & Company. AIS is a provider of guidance, stabilization and navigation products and systems for the military and defense markets. AIS employs approximately 800 people at facilities located in Cheshire, Connecticut; Heath, Ohio; Plymouth, U.K.; and Totowa, New Jersey. Primary products include inertial sensors, inertial measurement units (IMUs), integrated IMU/GPS systems, stability systems, and terrain avoidance systems for missiles, military aircraft and land systems. AIS became part of Goodrich's Sensors and Integrated Systems business. The deal was first announced in November 2009.

Web site: <http://www.atlanticinertial.com>

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**Cloud Cap Technology Acquired.** In May 2009, Goodrich acquired Cloud Cap Technology Inc (CCT), a provider of proprietary end-to-end avionics solutions for small unmanned aerial vehicles (UAVs) and of sensors for manned vehicles. CCT, a privately held company, has been in business for more than 10 years and employs roughly 30 people at its Hood River, Oregon, facility. Its products are used on most of the small UAV models in operation or under development. Primary products include autopilot flight management systems, inertial measurement sensors, and stabilized imaging microgimbals. CCT was to become part of Goodrich's ISR Systems business. Terms were not disclosed.

**Recon/Optical Acquired.** In July 2008, Goodrich acquired the Chicago Aerial Industries (CAI) and Pacific Optical Division (POD) assets of Recon/Optical Inc (ROI), a provider of low- to medium-altitude airborne reconnaissance cameras and optical products for the homeland security and military markets. ROI employs approximately 170 people at facilities in Barrington, Illinois, and Riverside, California. Major customers include original equipment defense contractors as well as U.S. and allied military forces around the world. Primary products include dual-band and infrared framing cameras, imagery and data exploitation systems, and sophisticated optical devices. The company was founded in 1922, and had 2007 revenue of \$27 million. ROI was to become part of Goodrich's ISR Systems business. Terms were not disclosed.

**Goodrich Acquires TEAC Aerospace.** In February 2008, Goodrich acquired TEAC Aerospace Holdings Inc, a provider of proprietary airborne mission data, video recording and debrief products for the defense industry, and cabin video systems for commercial airlines. Terms were not disclosed. The company had 2007 revenues of over \$50 million. TEAC is now part of Goodrich's Sensors and Integrated Systems business.

**Aviation Technical Services Divested.** In October 2007, Goodrich sold its airframe heavy maintenance business, Goodrich Aviation Technical Services Inc (ATS), to Macquarie Bank Ltd. ATS has over 1,200 employees at its facility in Everett, Washington. ATS provides MRO services to airlines, cargo fleet operators and aircraft owners. ATS services include airframe heavy maintenance, aircraft modifications and painting, passenger-to-freighter conversions, engineering and certification, and component repair and overhaul. Terms were not disclosed.

**Sensors Unlimited Acquired.** In October 2005, Goodrich completed the acquisition of Sensors Unlimited Inc for \$60 million. The purchase included a

39,000-square-foot leased facility in Princeton, New Jersey, and more than 50 employees. Sensors Unlimited develops SWIR and indium gallium arsenide (InGaAs) imaging technology.

**JcAIR Test Systems Divested.** In April 2005, Goodrich completed the sale of its JcAIR Test Systems business to Aeroflex Inc of Plainview, New York, for \$35 million. JcAIR Test Systems, with 2004 revenues of approximately \$24 million, designs and supplies a variety of specialized electronic test equipment used in the commercial and military aerospace industry. Its customers include aerospace equipment manufacturers, airframe manufacturers, and airlines. Located in New Century, Kansas, JcAIR Test Systems has approximately 130 employees.

### Teaming/Competition/Joint Ventures

**Boeing.** In June 2011, Goodrich was selected by Boeing Defense, Space & Security to work on the U.S. Air Force Research Laboratory's Integrated Vehicle Energy Technology (INVENT) program. Goodrich's Actuation Systems business will design, develop and test an integrated suite of advanced actuators featuring technologies focused on improving energy, power, and thermal management. These new technologies will target the next generation of tactical fighters and air mobility transport systems. The Goodrich team based in Wolverhampton, U.K., is supporting the HPEAS (high-performance electric actuation system) integrated product team within the INVENT program.

In October 2008, Goodrich entered into a data license with Boeing granting Goodrich Parts Manufacturing Authority (PMA) to produce replacement landing gear spare parts. The license permits Goodrich to manufacture licensed parts under Goodrich's FAA-approved quality system and distribute them directly to operators.

**CFM International.** In 1989, Goodrich Aerostructures and engine manufacturer CFM International signed a contract to provide nacelle systems for the CFM56-5C2 engine of the Airbus A340 airliner. CFM International is a joint venture of General Electric Aircraft Engines of the United States and France's Snecma. Goodrich Aerostructures continues to lead an international team that includes associate contractor Hispano Suiza of France. Goodrich Aerostructures is responsible for overall nacelle program management.

**Jeppesen.** In May 2006, Goodrich entered into a teaming agreement under which Jeppesen serves as a supplier of electronic flight bag applications and data for Goodrich's EFB system. Under the agreement,

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Goodrich provides aircraft integration, certification, and aftermarket support services related to the EFB.

**KNK.** In October 2011, Goodrich teamed with U.K.-based Knowledge Network Consulting (KNK) Ltd to develop solutions to meet future ISR requirements.

**Mubadala Aerospace.** In July 2010, Goodrich and Mubadala Aerospace, a business unit of Mubadala Development Company, signed a Heads of Agreement (HOA) to establish a joint venture company in the United Arab Emirates (UAE) to perform MRO work on landing gear. The joint venture company will be the Middle East's first dedicated landing gear service provider once fully operational in 2012.

**Rockwell Collins.** In March 2006, Goodrich entered into a teaming agreement to provide electronic flight bag and related video solutions to Rockwell Collins. These video solutions would be applied to Rockwell Collins' Flight Information Management System for military applications. The system solutions include cargo video surveillance systems, outside-the-aircraft video monitoring and recording systems, and a variety of other video systems used to enhance flight deck and flight crew situational awareness.

In October 2000, Rockwell Collins and Goodrich Avionics Systems Inc formed a strategic alliance to offer customers more competitive avionics solutions for business and regional jet aircraft and additional opportunities in the aviation aftermarket. Utilizing the aircraft avionics and integration expertise from both companies, the alliance would provide opportunities for the complete integration of aircraft systems, including primary flight, navigation, communications, safety, and standby systems.

Earlier that year, Rockwell Collins and Goodrich Aerospace formed a strategic alliance to provide airlines with a broad range of equipment, parts, and maintenance services, including "single-stop solutions" for avionics, instrumentation, and other aircraft components. Within the alliance, Rockwell Collins would provide its expertise in avionics and in-flight entertainment systems, its avionics integration capabilities, and its global service network, which includes MRO of avionics equipment manufactured by Collins and other companies. Goodrich would contribute its avionics and airframe component MRO expertise.

**Rolls-Royce.** In December 2008, Goodrich and Rolls-Royce completed the formation of a joint venture to develop and supply engine controls for Rolls-Royce aero engines. The joint venture company, Rolls-Royce Goodrich Engine Control Systems Ltd, operates as Aero

Engine Controls. Each of the contributing companies owns 50 percent of Aero Engine Controls.

Web site: <http://www.aeroenginecontrols.com>

**SIAEC.** In March 2001, Goodrich Aerospace and SIA Engineering Company (SIAEC) entered into a partnership to repair and overhaul aircraft nacelles, thrust reversers, and pylon components. SIAEC acquired 30 percent of the shares of Goodrich's wholly owned subsidiary Rohr Aero Services-Asia (RASA). SIAEC also had an option to acquire a further 10 percent equity share of RASA, subject to certain conditions. RASA was incorporated in Singapore in 1995 and, at the time the partnership was formed, operated a 60,000-square-foot MRO facility in Singapore's Loyal aerospace hub.

**SYPAQ.** In July 2010, Goodrich's ISR Systems business in Malvern in the U.K. signed a teaming agreement with Australia's SYPAQ, a systems integration and consultancy company based in Melbourne, Victoria, to support future ISR systems within Australia. Under the agreement, SYPAQ will act as the prime contractor for Goodrich's civil and defense ISR campaigns within Australia.

**Turkish Technic.** In July 2010, Goodrich and Turkish Technic Inc signed all appropriate agreements related to the formation of a joint venture company to provide MRO services in Istanbul, Turkey. The joint venture company, known as Goodrich Turkish Technic Service Center, will provide nacelle, thrust reverser and related component services, including rotatable support. The center will provide services for the Airbus and Boeing fleets of Turkish Airlines and other carriers in Turkey and neighboring regional fleets. The two companies previously announced the intention to form the joint venture in November 2007.

**VEM.** In June 2004, Goodrich entered into a strategic alliance with VEM (Varig Engineering Maintenance) for the servicing of aircraft wheels and brakes. This agreement, which covers all civil aircraft, was a first for Goodrich's Aircraft Wheels and Brakes division. It established the VEM workshop as an authorized Goodrich Wheels and Brakes Service Center.

**Xi'an Aircraft.** In August 2009, Goodrich and Xi'an Aircraft International Corporation (XAIC) signed agreements to form two joint venture companies to produce landing gear and engine nacelle components for the fast-growing Chinese aerospace market. The new companies would compete for market positions on the COMAC C919 single-aisle Chinese commercial aircraft currently under development, and would manufacture various landing gear and nacelle components and subassemblies for other aircraft. The agreements called



for the creation of two joint venture companies between XAIC and each of Goodrich Landing Gear and Goodrich Aerostructures. In each case, the new joint ventures would be equally owned.

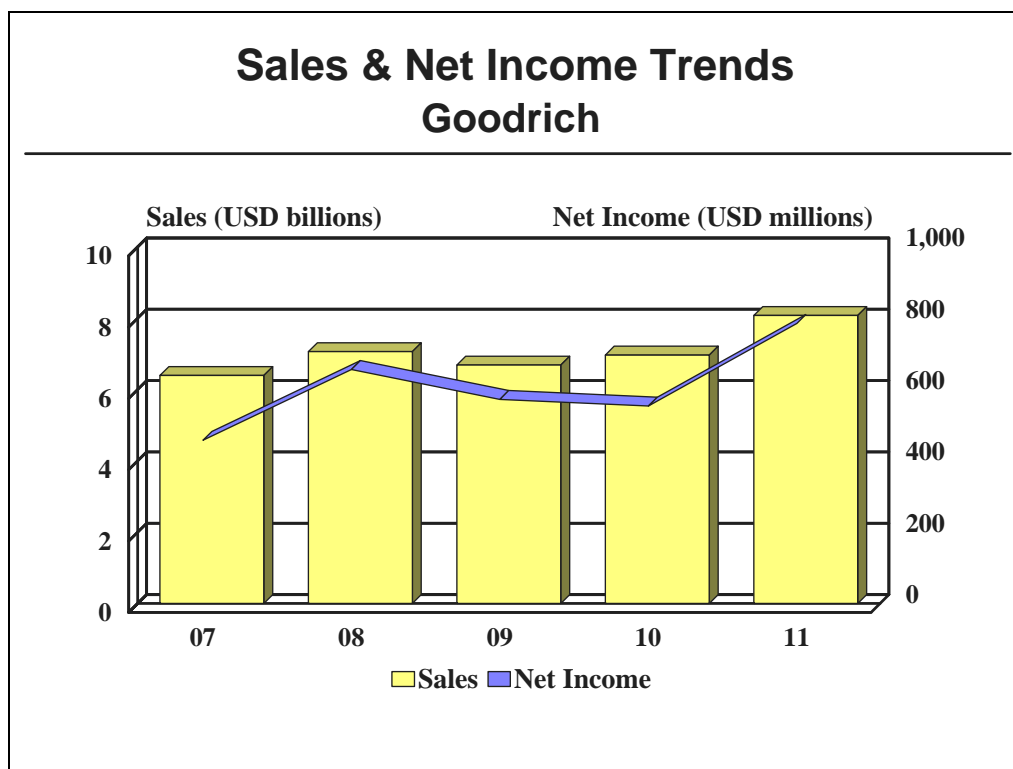
technological and investment issues, and that the two firms had failed to jointly bid on the COMAC C919 landing gear and nacelles. As a result, the joint venture efforts were terminated.

However, in 2011 news reports indicated that XAIC and Goodrich had failed to reach agreements on various

## Financial Results/Corporate Statistics

Goodrich's sales for 2011 rose almost 16 percent to \$8.07 billion, from \$6.97 billion in 2010. The company posted net income of \$810.4 million for the year, compared with \$578.7 million in 2010. In 2011, 2010 and 2009, direct and indirect sales to Airbus were approximately 18 percent, 17 percent and 17 percent, respectively, of consolidated sales. In 2011, 2010 and 2009, direct and indirect sales to Boeing were approximately 15 percent, 15 percent and 16 percent, respectively, of consolidated sales. Research and development is company-funded. Financial statistics for the last six years, restated to the company's current presentation, are provided below.

Y/E December 31	2006	2007	2008	2009	2010	2011
(USD millions)						
Sales	5,719.1	6,392.2	7,061.7	6,685.6	6,966.9	8,074.9
Percent Gov't	16.0	17.0	17.0	22.0	25.0	23.0
Net Income	482.1	482.6	681.2	597.3	578.7	810.4
R&D Expenditures	247.0	280.0	284.0	239.0	247.0	247.0
Backlog	4,920.0	5,413.0	4,212.0	4,452.0	4,823	5721
Debt/Equity Ratio	0.87	0.60	0.65	0.67	0.69	0.63



## Goodrich

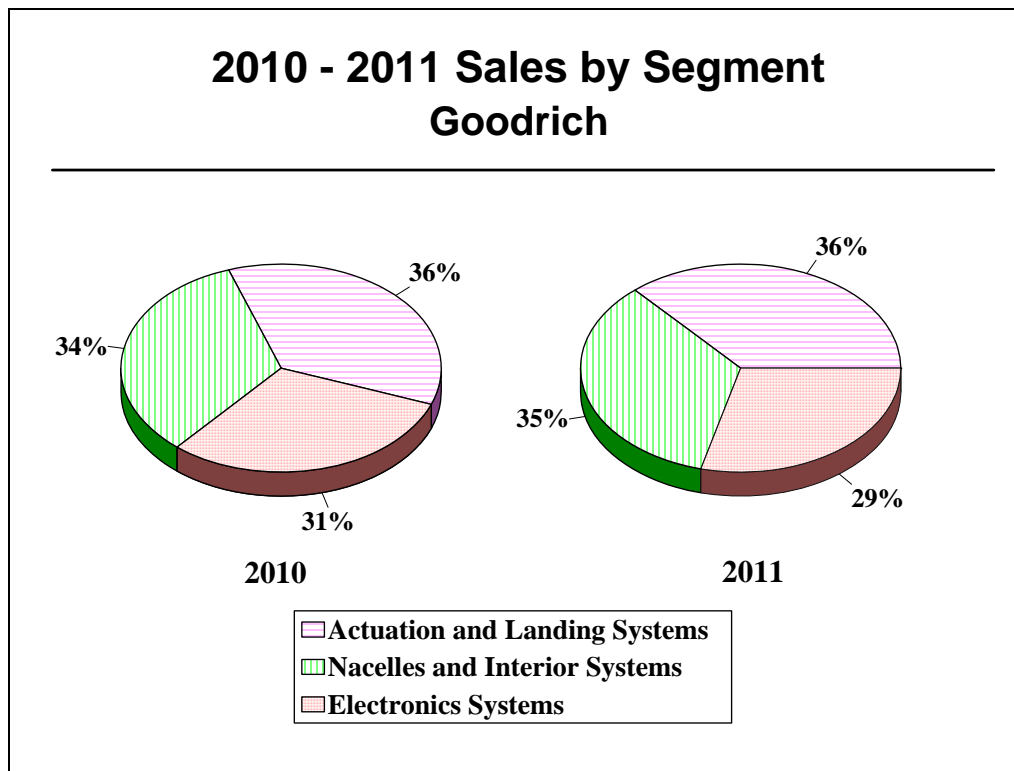
## Industry Segments

A breakdown of the firm's sales and operating income by major business segment for the past five years is provided below.

<b>SALES</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
(USD millions)					
Actuation and Landing Systems	2,400.6	2,614.9	2,524.3	2,491.5	2,945.3
Nacelles and Interior Systems	2,169.0	2,485.6	2,322.6	2,339.5	2,796.7
Electronics Systems	1,822.6	1,961.2	1,838.7	2,135.9	2,332.9
<b>TOTAL</b>	<b>6,392.2</b>	<b>7,061.7</b>	<b>6,685.6</b>	<b>6,966.9</b>	<b>8,074.9</b>

<b>OPERATING INCOME</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
(USD millions)					
Actuation and Landing Systems	247.8	300.0	266.9	273.1	373.4
Nacelles and Interior Systems	531.0	647.5	515.3	555.9	729.7
Electronics Systems	247.8	268.8	276.4	324.9	390.8
<b>TOTAL</b>	<b>1,026.6</b>	<b>1,216.3</b>	<b>1,058.6</b>	<b>1,153.9</b>	<b>1,493.9</b>



## Strategic Outlook

With commercial aerospace improving well ahead of the general economy, so too are the fortunes of Goodrich.

Jetliner modernization continues to drive demand as airlines look to upgrade their fleets with new, fuel-efficient aircraft. To meet the new demand, both Airbus and Boeing have introduced new models and increased production rates, and this, in turn, has translated into record sales for Goodrich. Further adding to the bottom

line has been an increase in regional, business and general aviation airplane original equipment sales; this segment was perhaps the hardest hit during the downturn.

Balancing out its commercial exposure is a solid presence in defense. The company is well positioned in such growth markets as ISR, helicopters and precision munitions, as well as niche electronics. Despite

anticipated defense cuts, these sectors should continue to maintain funding.

Enter United Technologies Corporation. With a rebound occurring in aerospace, UTC sensed the time was right to expand its operations in this market via a merger with Goodrich. The blockbuster deal will create a commercial aerospace powerhouse with a large portfolio of products.

As part of UTC, Goodrich will now form the center of UTC Aerospace's operations, with Pratt & Whitney and Hamilton Sundstrand operating with Goodrich as part of the planned Propulsion and Aerospace Systems division. This new operation will be a super supplier of aerospace systems and components with a product line

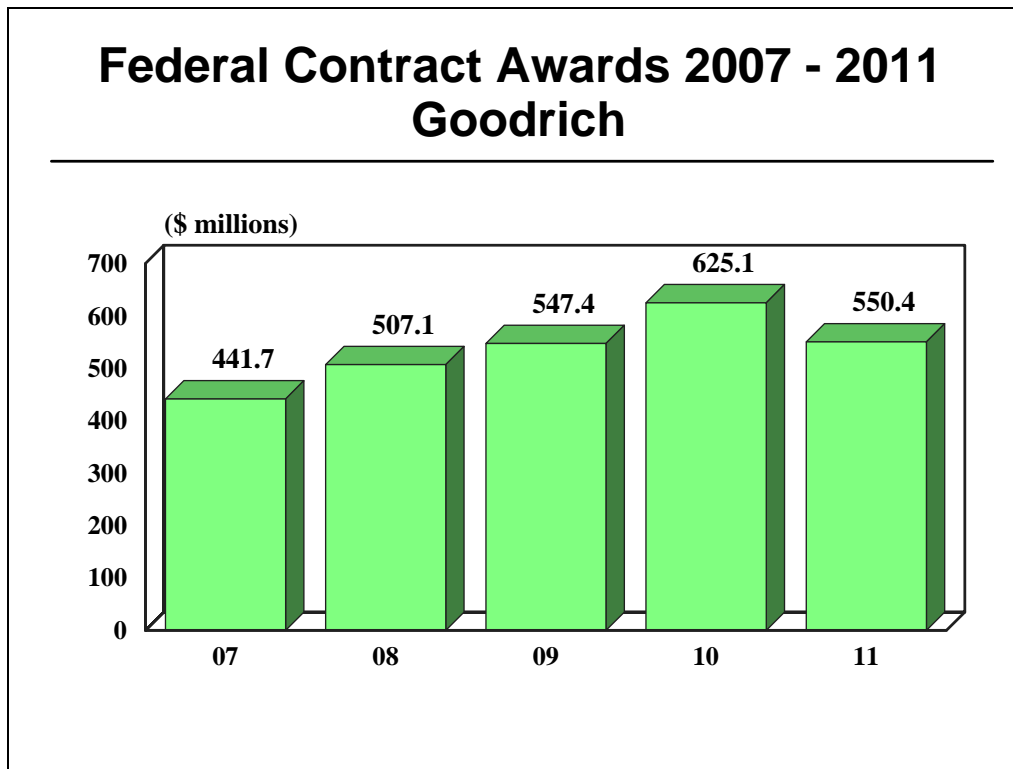
ranging from engines, landing gear, wheels and brakes to aerostructures, electronics, and interiors. The new division's closest rival is Honeywell, which it will surpass in terms of aerospace suppliers.

Under UTC, Goodrich will remain well positioned for future growth based on its increased content on leading new commercial and military aircraft. The company's broad position across many platforms, combined with increased air-framer production rates, will drive sustainable long-term aftermarket growth. Further, the new combination puts UTC in the catbird seat on future commercial jet opportunities thanks to the increased breadth of operations.

## Prime Award Summary

The following chart and table show the dollar volume of Goodrich's federal prime contract awards for 2007 through 2011. For more information, refer to Appendix I, "Recipients of Federal Contract Awards."

<b>Goodrich</b> (USD millions)	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
Rank	-	-	-	-	-
<b>Total DoD Awards</b>	<b>441.7</b>	<b>507.1</b>	<b>547.4</b>	<b>625.1</b>	<b>550.4</b>



Source: <http://www.usaspending.gov>

## Goodrich

## Program Activity

Some important aerospace and government programs currently under way at Goodrich are listed below. The briefs are intended to provide a listing of programs of major importance to the company. For detailed information on or analysis of specific aerospace and defense programs or equipment, please refer to the applicable Forecast International binder (for example, *Civil Aircraft, Military Aircraft, Military Vehicles, Warships, Missiles, Electronic Systems, and Aviation Gas Turbines*). The following are Goodrich's current business interests:

- Aircraft Nacelles and Components
- Civil Aircraft Components
- Military Aircraft Components
- Space Systems
- Systems Integration

### Aircraft Programs

All of Goodrich's three operating segments provide components, systems and services for both commercial and military aircraft. The company describes its segments and products as follows:

**Actuation and Landing Systems** provides systems, components, and related services pertaining to aircraft taxiing, takeoff, flight control, landing and stopping, as well as engine components, including fuel delivery systems and rotating assemblies.

**Nacelles and Interior Systems** produces products associated with aircraft engines, including thrust reversers, cowlings, and nozzles, and aircraft interior products including slides, seats, and cargo and lighting systems. It also provides MRO services.

**Electronic Systems** produces a wide array of systems and components, including flight performance measurement systems, flight management systems, fuel controls, electrical systems, control and safety data, reconnaissance and surveillance systems, and precision guidance systems.

### **Airbus A350 XWB**

In October 2009, Goodrich signed a research agreement with Rolls-Royce to develop the next generation of fuel nozzles for "lean burn" combustion technology systems that would be used on future environmentally responsible gas turbine aircraft engines. Goodrich also has been selected to supply Rolls-Royce with the combustion system fuel nozzles for the new Rolls-Royce Trent XWB engine for the Airbus A350 XWB commercial aircraft. All work will be performed by

Goodrich's Engine Components team in West Des Moines, Iowa.

In May 2009, Goodrich was selected by Airbus to supply the external video system for the A350 XWB commercial aircraft. Goodrich expects the award to generate more than \$1 billion in original equipment and aftermarket revenue over the life of the program. Work will be performed by Goodrich's Sensors and Integrated Systems teams in Burnsville, Minnesota, and Toulouse, France.

In December 2008, Goodrich was selected to supply wheels and carbon brakes for all variants of the A350 XWB family of aircraft. The selection is expected to generate more than \$3 billion in revenue over the life of the program. The equipment will be provided by Goodrich's Aircraft Wheels and Brakes team in Troy, Ohio.

In September 2008, Goodrich was selected to supply the air data system and ice detection system for the A350 XWB. Together, the awards are expected to generate more than \$600 million in original equipment and aftermarket revenue over 20 years. Work will be performed by Goodrich's Sensors and Integrated Systems team in Burnsville.

### **Airbus A380**

In March 2001, Goodrich was selected to supply the body and wing landing gear for Airbus' new A380 aircraft. This marked the first time that Goodrich had been selected by Airbus to supply main landing gear. The program has the potential to generate total revenues of \$2 billion to \$3 billion over a 20-year period, depending on the number of aircraft ordered. In addition to the original equipment, Goodrich is also providing spare parts and gear packages directly to operators of A380 aircraft.

### **Boeing 787**

In December 2004, Goodrich was selected by Boeing to supply the entire cargo-handling system for the new 787 Dreamliner. The Goodrich cargo system includes the mechanical system, power drive units, electrical control system, and floor panels. The contract is expected to generate over \$450 million in original equipment and aftermarket sales through 2028. This was the eighth selection of Goodrich technology for the Boeing 787. Boeing has awarded Goodrich contracts for the 787's electric braking system, exterior lighting, nacelles and thrust reversers, proximity sensing system, fuel quantity indicating system, and fuel management

software. In addition, Goodrich was selected by Rolls-Royce to provide the engine control system and sensor suite for the Trent 1000 engine, an engine option for the 787. These contracts are expected to generate over \$7.5 billion in original equipment and aftermarket sales through 2028.

### **Lockheed Martin F-35 Joint Strike Fighter (JSF)**

In November 2001, Goodrich announced that it will supply the landing gear, and lead the landing-system integration effort, for the Lockheed Martin Joint Strike Fighter (JSF). The company estimated the potential value of this business at \$4 billion to \$5 billion over the life of the new fighter jet program, including original equipment and aftermarket sales and service, but excluding foreign military sales. Goodrich has a signed agreement in excess of \$70 million for initial System Design and Development (SDD) of the landing gear and for undercarriage integration. In addition to landing gear technologies, Goodrich will provide fuel-quantity gauging components and the associated wiring harnesses as part of the aircraft's fuel measurement system. The company will be pursuing additional JSF content opportunities for aerostructures, engine systems, lighting systems, avionics, and sensors as they become available.

### **Electronics Programs**

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#### **ASQ-228/Advanced Targeting Forward-Looking Infrared (ATFLIR)**

ATFLIR is a sensor used for long-range delivery of air-to-ground weapons on the F/A-18 Hornet and Super Hornet aircraft. Goodrich's ISR Systems handles production of the ATFLIR window. The U.S. Navy may buy additional F/A-18 Super Hornets to fill a "fighter gap," which could lead to ATFLIR sales.

#### **AVR-2(V)**

The AVR-2(V) is a laser warning receiver that warns aircraft of threats from laser designators, rangefinders, and beamriders. The AVR-2 laser warning receiver is a key self-protection component of the AH-64A/D, MH-47E, MH-60K, OH-58D, and EH-60A aircraft. It is integrated with the APR-39(V) radar warning receivers, and provides a combined radar/laser threat detection capability for Army, Marine, and Navy helicopters. Goodrich's ISR Systems produces this system.

## **U.S. Contract Awards**

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Below is a listing of major contracts recently awarded to Goodrich from the U.S. government (contracts as of press date). Most of the company's work is as a subcontractor to major airframe providers. Note that the Description section is excerpted directly from U.S. DoD listings. For full details on individual contracts and their associated modifications, visit: <http://www.defense.gov/contracts> and enter the contract number in the "Search Contracts" box.

#### **SQS-53(V)**

The SQS-53(V) is a bow-mounted sonar for surface vessels, designed for long-range passive and active submarine detection. Goodrich produces SQS-26/53 sonar rubber domes and windows under this program.

#### **SQS-56(V)/DE-1160/DE-1164**

This is a modern sonar family for use on surface ships. Goodrich produces sonar rubber domes for the SQS-56. Production is believed to be complete, with no further sales expected. Production for replacement components is likely in the future.

### **Space Systems Programs**

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#### **AMOS**

The Affordable Modular Optimized Satellite (AMOS) is a family of small communications satellites for deployment in geosynchronous orbit. Goodrich provides Earth sensors for these satellites.

#### **Atlas V**

The Atlas V is a family of medium- to heavy-lift expendable launch vehicles produced by Lockheed Martin. Goodrich produces the digital acquisition system.

#### **Globalstar**

Globalstar is a satellite-based mobile communications system. Goodrich provides Earth and Sun sensors for these satellites. A total of 72 Globalstar satellites have been produced, including ground spares. Thales Alenia is building the second-generation system.

#### **Landsat**

Landsat is a U.S. remote sensing satellite system. The Landsat Data Continuity Mission is an innovative program to seek partnerships with industry to continue receiving critical land remote sensing data. Goodrich Space Flight Systems produced the Landsat-7 attitude determination and control system.

#### **NOAA/NPOESS**

National Oceanic and Atmospheric Administration (NOAA) Polar-orbiting Operational Environmental Satellite Systems (POESS) are polar-orbiting meteorological spacecraft. Goodrich Space Flight Systems (Albuquerque, New Mexico) produces the attitude determination control sensor for these spacecraft.

## Goodrich

Date	Award (USD millions)	Contract #	Description
<b>2007</b>			
5/7/07	37.0	FA8620-07-C-4021	Delivery of two reconnaissance pods, one mobile ground station, and test & integration support.
5/9/07	9.4	FA8221-07-D-0002	Forward nose landing gear door and aft nose landing door for A-10 aircraft.
6/26/07	17.1	N00019-06-C-0298	56 CH-53 integrated mechanical diagnostics & health usage monitoring system kits.
6/29/07	6.9	W58RGZ-07-C-0142	Support of health monitoring for Iraq- and Afghanistan-deployed UH-60A/L.
8/22/07	13.7	W9133L-07-C-0031	High-speed internal rescue hoists for the Army National Guard-Aviation.
9/11/07	12.8	N00104-07-C-K099	Digital recovery sequencers in support of the CAD/PAD Joint Program Office.
9/24/07	7.4	N00104-07-C-K113	CKU-5/C aircraft ejection seat catapults.
<b>2008</b>			
8/18/08	32.9	N00164-08-D-GP21	Composite domes and sonar dome rubber windows.
8/28/08	87.9	FA8620-08-C-3013	Four reconnaissance pods.
9/18/08	10.3	N00173-08-C-2134	Seven CA-247 cameras to be deployed in Iraq.
<b>2009</b>			
9/28/09	13.1	N00019-06-C-0298	47 integrated mechanical diagnostics and health usage monitoring system units for CH-53 helicopters.
<b>2010</b>			
4/6/10	20.6	SPRTA1-10-D-0053	Jet engine fuel pump.
9/2/10	6.8	N00019-10-C-0090	348 electronic digital engine control units for the H-60 helicopter.
9/6/10	5.8	N00019-06-C-0298	19 MH-53 integrated mechanical diagnostic & health usage monitoring system units.
10/8/10	10.8	FA8620-11-C-3003	One DB110 reconnaissance pod system for use on the F-16C/D Block 50/52 being purchased by the Egyptian Air Force.
11/18/10	14.2	SPRHA1-09-C-0042	Wheel & brake assembly parts.
11/19/10	6.9	W911W6-09-D-0017	R&D program entitled, "Universal Control (UC) Full Authority Digital Electronic Control."
12/21/10	10.2	W58RGZ-05-D-0487	Overhaul of 217 Chinook main fuel controls.
<b>2011</b>			
1/20/11	71.9	FA8620-11-C-3006	Provision of five DB110 pods; two datalink upgrades to existing pods; two fixed ground stations; one mobile ground station; four ground station datalink receiver kits; initial spares; technical manuals; minimal initial engineering support for final in-country installation, integration, and testing; and a study of a potential fusion center. This contract supports an FMS program related to Pakistani F-16 aircraft.
10/27/11	14.4	SPRHA1-09-C-0042	C-130 main wheel & brake assemblies.
<b>2012</b>			
1/5/12	7.2	W58RGZ-12-C-0050	Procurement of 137 high-performance shock struts, with an option for an additional 76 struts.
2/1/12	9.2	W58RGZ-12-C-0058	Procurement of 200 fuel controls applicable to the CH-47 helicopter.
4/13/12	183.0	FA8620-12-C-4020	DB110 pods, support equipment, and contractor logistics support for the FMS F-15 modernization program.

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