



Orbital

ORBITAL SCIENCES CORP.
21839 Atlantic Blvd.
Dulles, VA 20166, USA
Tel: (703) 406-5000
Fax: (703) 406-5572
www.orbital.com

Employment: 2,100

Officers:

Chairman and CEO David W. Thompson
Vice Chairman, President and COO James R. Thompson
Vice Chairman and CFO Garrett E. Pierce

Aerospace Organization/Products:

Launch Vehicles Systems (Huntsville, AL, Chandler, AZ, Vandenberg AFB, CA, Dulles, VA, all USA):

Missile Defense Vehicles: Designs, manufactures and operates missile defense-related interceptor boosters and target launch vehicles. Is developing an interceptor boost vehicle for the US Missile Defense Agency's Ground-Based Mid-Course Defense (GMD) System and Kinetic Energy Interceptors (KEI) program. Target vehicles support the GMD program, the Sea-based Mid-Course System, and programs such as PAC-3, US Army Theater High-Altitude Air Defense (THAAD), Vandal and GQM-153 (Supersonic Sea Skimming Target). **Space Launch Vehicles:** Produces air-launched Pegasus and ground-launched Taurus and Minotaur rockets used to place satellites into low-Earth orbit.

Satellites & Space Systems (Beltsville, Germantown and Greenbelt, MD, Dulles, VA, all USA):

GEO Communications Satellites: Manufactures small, light-weight STAR-1 and STAR-2 geosynchronous Earth orbit (GEO) satellites for domestic and international providers of satellite communications services. Primary satellite projects include Telkom of Indonesia and US-based PanAmSat. **LEO Satellites and Planetary Spacecraft:** Makes small satellites used for communications, remote sensing and space technology demonstration missions in low-Earth orbit (LEO). Primary projects include AIM, Glory and ROCSAT. Also produces spacecraft for "deep space" or planetary scientific missions such as DAWN planetary mission scheduled for launch in 2006 to Ceres and CVesta in the asteroid belt between Mars and Jupiter.

Space-Related Technical Services (Huntsville, AL and Dulles, VA, both USA):

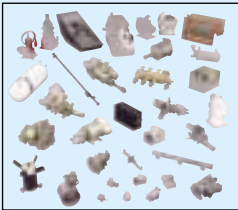
NASA and Department of Defense Programs: Provides engineering support services and product production to government customers such as NASA.

Transportation Management Systems (Columbia, MD, USA):

GPS Satellite-Based Vehicle Location Systems: Produces integrated and customized systems that use satellite-based GPS positioning information, ground-based communications and Internet data-delivered systems to track fleets of vehicles for public transit systems, highway maintenance and private vehicle fleet operators.

FINANCIALS (\$ MILLIONS):	2001†	2002	% Change
Operating Revenues	415	552	33%
Operating Expenses	468	523	12%
Operating Income	(53)	29	77%
Debt to Equity Ratio	3.1%	0.9%	(70%)

† Values updated from 2003 Source Book.



PARKER HANNIFIN CORP.
6035 Parkland Blvd.
Cleveland, OH 44124, USA
Tel: (216) 896-3000; Fax: (216) 896-4000
www.parker.com

Employment: 46,787 (5,200 Parker Aerospace)

Officers:

Chairman of the Board Duane Collins; **President and CEO** Don Washkewicz; **Parker Aerospace President** Bob Barker

Aerospace Organization/Products:

Customer Support Operations (Irvine, CA, USA):

Customer Support Commercial Div. (Irvine, CA, USA): Provides around-the-clock support services for Parker Aerospace parts, as well as online inventory, overhaul and repair services, engineering support, technical data, training and field service support. **Customer Support Military Div.** (Irvine, CA, USA): Provides logistics support for systems and components manufactured by Parker Aerospace for military aircraft and related equipment. Services include sales and management of spares, warranty administration, overhaul and repair, ground-support equipment, technical data and reliability management, engineering assistance, training, field service and in-theater support.

Flight Control & Hydraulic Systems Branch (Irvine, CA, USA):

Abex Div. (Kalamazoo, MI, USA): Designs, manufactures and services electromechanical actuators, hydraulic thrust-reverser actuators, hydraulic motors, hydraulic piston pumps, hydraulic systems and electro-hydraulic servovalves. **Abex Aerohydraulic Div.** (Mainz-Kastel, Germany): Manufactures and services electro-mechanical actuators, hydraulic thrust-reverser actuators, hydraulic motors, hydraulic piston pumps, hydraulic systems and electro-hydraulic servovalves. **Control Systems Div.-Commercial** (Ogden, UT, USA): Designs, manufactures and services hydraulic systems, primary flight-control actuation and engine-control systems, integrated fly-by-wire electro-hydraulic servomodels, electronically controlled actuators, electromechanical actuators, flight-control components and hydraulic systems and components. **Control Systems Div., Dublin** (Dublin, GA, USA): Designs and manufactures electro-hydraulic servovalves and electromechanical products. **Control Systems Div., Irvine** (Irvine, CA, USA): Designs, manufactures and services hydraulic systems, primary flight-control actuation and engine-control systems, integrated fly-by-wire electro-hydraulic servomodels, electronically controlled actuators, electromechanical actuators, flight-control components and ballistic-tolerant hydraulic systems and components. **Parker Aerospace Japan** (Yokohama, Japan): Manufactures electromechanical actuators, hydraulic thrust-reverser actuators, hydraulic motors, hydraulic piston pumps, hydraulic systems and electro-hydraulic servovalves.

FINANCIALS (\$ MILLIONS)*:	2002	2003	% Change
Operating Revenues	6,150	6,410	4%
Operating Expenses	686	721	5%
Net Profits	130	196	51%
Debt to Equity Ratio	37%	36%	(43%)

*Fiscal year ends June 30.

Fluid Management & Control Systems Branch (Cleveland, OH, USA):

Air & Fuel Div. (Irvine, CA, USA): Designs, manufactures and services aircraft fuel system components, aerial refueling equipment, high-temperature bleed air valves, turbine clearance control valves, air turbine starters and aircraft fire-suppression systems. **Aircraft Wheel & Brake Div.** (Avon, OH, USA): Designs, manufactures and services aircraft wheels, brakes, master cylinders, parking valves and hydraulic systems and components. **Electronic Systems Div.** (Smithtown, NY, USA): Designs, manufactures and services fuel- and oil-management systems, quantity-gauging systems, flow-measurement systems, flight-deck displays and flight inspection and aircraft-control systems. **Gas Turbine Fuel Systems Div.** (Mentor, OH, USA): Designs, manufactures and services fuel nozzles, atomizer devices, spraybars, valves, metering devices and manifolding for gas turbine main combustion and augmentation for commercial, industrial and aerospace propulsion engines and related products. **Nichols Airborne Div., Ayer** (Ayer, MA, USA): Designs, manufactures and services lubrication and scavenge oil pumps for aircraft gas turbine engines, auxiliary power units, helicopter transmissions and accessories. **Nichols Airborne Div., Elyria** (Elyria, OH, USA): Designs, manufactures and services DC fuel pump products, AC fuel pumps, bleed-air temperature control systems, bleed-air valves, regulator valves, filters, gauges and fittings.

Parker Hannifin Industrial Groups:

Fluid Connectors Group, Stratoflex Products Div. (Fort Worth, TX, USA): Manufactures field-attachable fittings and flexible hose assemblies. **Parker Seal Group** (Irvine, CA, USA): Produces engineered seals and sealing systems.