

# Aerospace Industry

## Summary

- Alabama ranks 10<sup>th</sup> nationally for Department of Defense Prime Contracts – Over \$7.0 Billion in FY 2005.
- Alabama's Marshall Space Flight Center will receive \$2.5 Billion in FY 2006 representing 15.0% of NASA's total budget.
- Alabama is home to over 300 aerospace companies.
- Aerospace equipment and parts exports were valued at over \$133 million in 2004.

## Employment

- 73,032 employees in 2002 (civilian/federal)
- 139,601 aerospace jobs (direct/indirect)
- 36% Engineering and R&D services
- 19% Aircraft maintenance, repair and overhaul (MRO)
- 16% Information technology services
- 14% Guided missile and space vehicle manufacturing
- 6% Guided missile and space vehicle parts manufacturing
- 6% Aircraft parts manufacturing and MRO
- 3% General manufacturing

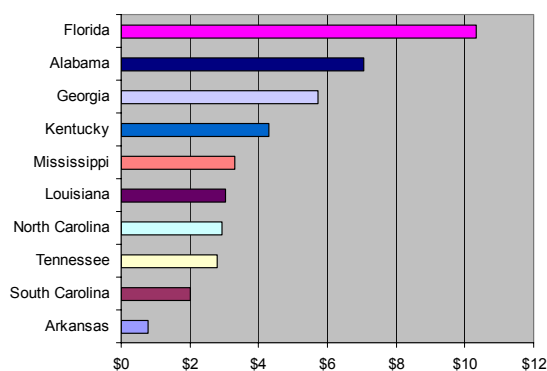
Sources: Alabama Aerospace Industry Association, 2003; American Electronics Association; International Trade Division, Alabama Development Office: EDPA Aerospace Database

- Average Weekly Wage: 2004 (Private)
  - Alabama Aerospace Industry: \$1,073
  - All Alabama Manufacturing Industries: \$761
  - All Alabama Industries: \$643

Source: U.S Department of Labor-Bureau of Labor Statistics, 2006 (Annual 2004 data)

## Outlook/Trends

### Southern States Receiving Prime Defense Contracts (\$Billions), FY 2005



Source: Department of Defense-2005

**Overview-** *Southern Business and Development* magazine has three times in a row named Alabama "State of Year" most recently in 2005, based on its record of job growth and economic development. Growth in the automotive industry is only one example of Alabama's successful corporate investments. The state has long been home to many world class companies including Mercedes, Wellborn Cabinets, Honda, 3M, Boeing and more recently EADS, Toyota and Hyundai.

Alabama has recorded strong economic growth numbers. Its economic cycles have mirrored those of the United States, though on a more moderate scale. Manufacturing is at the center of the Alabama economy. The manufacturing sector accounts for almost 20 percent of the gross state product and 16 percent of the state's nonagricultural employment. A major contributor to the state's success is the Alabama Industrial Development Training, the state's workforce training program ranked #2 in the nation by *Site Selection* in 2005, helps to train a capable workforce for new and expanding companies.

Alabama is a state with great economic growth. The state's pro-business climate allows its corporate citizens to grow, prosper and profit. At the center of the United States' fastest growing, most populous region, and with 11 metropolitan areas and a variety of industry sectors, Alabama's economy is characterized by great diversity and a bright future for success.

## An Alabama: Industry Profile

### Recent Expansions and New Projects (Selected)

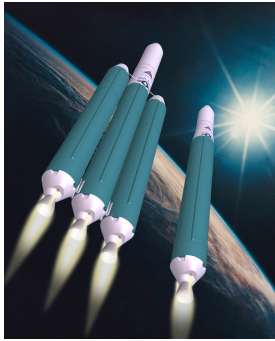
Company	County	Product	Jobs Created	Investment (Millions)
<b>2006</b>				
Raytheon Company	Madison	Engineering, management, customer support and business development	350	\$23.7 (New)
Sparta Inc.	Madison	Defense and intelligence engineering	NA	N/A (New)
EADS Casa N. America/Raytheon Cargo	Mobile	Military joint cargo aircraft delivery center	150	N/A (New)
Aerospace Integration Corp.	Marshall	Systems modifications and tech insertion for rotary wing aircraft	40	N/A (New)
<b>2005</b>				
EADS, North America	Mobile	Aircraft engineering, KC330 refueling tanker assembly	1,150	\$600 (New)
EJM Aerospace Services	Covington	Military/commercial aircraft maintenance, repair and overhaul	75	\$75 (New)
GKN Aerospace Services AL	Elmore	High performance composites	250	\$21.75 (Expansion)
Northrop Grumman	Mobile	KC -30 Production center	NA	NA (New)
Westar Aerospace & Defense Group, Inc.	Madison	Specialized technology services for government and aerospace industry	200	\$10.9 (Expansion)
<b>2004</b>				
CAS, Inc.	Madison	Weapon System Analysis	125	\$5 (Expansion)
Axsys Technologies	Cullman	Precision machined products	30	\$1 (Expansion)
Helispec, LLC	Crenshaw	Helicopter repair and overhaul	125	\$3.5 (New)
Toray Carbon Fibers	Morgan	Carbon fiber	49	\$102 (Expansion)
Evans Machine and Gear	Covington	Gears and helicopter parts	12	N/A (New)
<b>2003</b>				
Boeing Company	Morgan	Rocket production consolidation	160	\$40 (Expansion)
Axsys Technologies	Cullman	Precision machined products	37	\$2.2 (Expansion)
CTA	Madison	Aircraft coatings for radar avoidance	85	N/A (Expansion)
ST Mobile Aerospace Eng.	Mobile	Aircraft repair and modification	300	\$10 (Expansion)
Pemco Aeroplex	Jefferson	Aircraft modification and overhaul	100	N/A (Expansion)
<b>2002</b>				
GKN Aerospace	Elmore	Wing panels Airbus A380	100	\$1.5 (Expansion)
Lockheed Martin	Pike	Missile assembly	8	\$11 (Expansion)
Helipro Corp. Int'l	Covington	Helicopter repair/overhaul	25	N/A (New)

### U.S. Department of Defense Prime Contracts in Alabama by Major Procurement Program FY 2005

Total DoD Prime Contracts to Alabama		\$7,069,163,834	
Procurement Program	Amount	Procurement Program	Amount
Aircraft Engines and Spares	\$4,477,785	Missile and Space Systems	\$1,158,340,684
Airframes and Spares	\$83,334,116	Non-Combat Vehicles	\$65,584,925
All Other Supplies and Equipment	\$411,907,409	Other Aircraft Equipment	\$31,939,503
Ammunition	\$1,469,293	Other Fuels and Lubricants	\$15,959,008
Building Supplies	\$1,022,025	Petroleum	\$77,228,584
Combat Vehicles	\$203,411,138	Photographic Supplies and Equipment	\$6,528,362
Construction	\$402,063,992	Production Equipment	\$5,560,372
Construction Equipment	\$59,629,395	Services	\$4,067,270,282
Containers and Handling Equipment	\$1,712,249	Ships	\$22,138,289
Electronics and Communication Equip	\$197,076,347	Subsistence	\$44,504,944
Materials Handling Equipment	\$18,863,542	Textiles, Clothing and Equipage	\$104,884,933
Medical/Dental Supplies/Equipment	\$63,351,971	Weapons	\$20,904,686

Source: U.S. Department of Defense, FY 2005

### MAJOR CLUSTERS MAKE FOR A DIVERSE AEROSPACE INDUSTRY.



#### **Space & Defense**

The space/defense cluster of Alabama's aerospace industry is centered around Huntsville in north Alabama. Major companies there include Aegis Technologies, Boeing, COLSA Corporation, Lockheed Martin, PPG Aerospace and Teledyne Brown Engineering. In addition to its Huntsville facilities, Boeing Company also manufactures common core boosters for the Delta IV rocket and performs final assembly of Delta II rockets in Decatur. Axsys Technologies and SUMMA Technology in nearby Cullman are also major players in this sector. In southeast Alabama, Pike County's Lockheed Martin plant assembles missiles. EADS, the second largest aerospace/defense company in the world announced in June 2005 that it

would build an Airbus engineering center co-located with a future production facility for KC-330 refueling tankers in Mobile.

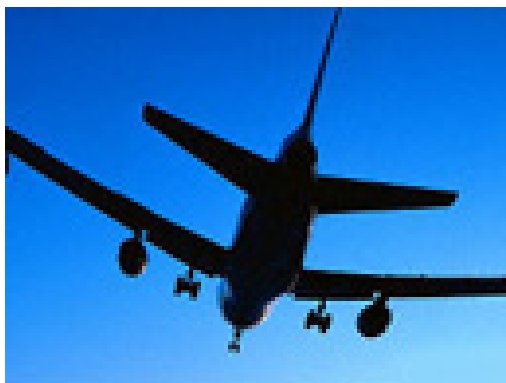
#### **Aviation**

Aviation companies targeted for both the commercial and defense sectors are located throughout the state, with concentrations in central and southeast Alabama. Area companies include GKN Aerospace, with facilities in Montgomery and Tallassee, and Kelly Aerospace, also in Montgomery. In the south Alabama locations of Abbeville and Mobile, Teledyne Continental Motors employs more than 450 workers in the manufacture of engines, components and ignition systems for general aviation.



#### **Maintenance, Repair & Overhaul (MRO)**

The MRO industry is spread across the state. Pemco World Air Services facility in Dothan provides maintenance services for numerous rotary wing aircraft as well as heavy maintenance and major modifications on wide-body and narrow-body aircraft. Pemco



Aeroplex in Birmingham provides a full range of aviation maintenance and modification services for both U.S. and foreign military, with a specialization in cargo planes. In Mobile, ST Mobile Aerospace Engineering focuses on providing scheduled maintenance and major modifications to wide-body and narrow-body aircraft. In Pike County, Sikorsky Support Services has helicopter service operations. Army Fleet Support, a joint venture of L-3 Communications, Vertex Aerospace, Paragon Systems and U.S. Helicopter, operates a large helicopter service facility in Dale County to serve Fort Rucker. AcroHelipro operates a helicopter repair and overhaul facility in Andalusia. In 2006, Aerospace Integration Corporation

announced that the company will open a new modification facility in Albertville, Alabama integrating enhanced technology into military helicopters.

## Major Government Facilities

### Redstone Arsenal

Established in 1941, Redstone Arsenal has been at the forefront of U.S. Army and NASA aerospace developments. The arsenal is home to Marshall Space Flight Center, the U.S. Army Aviation and Missile Command, and the U.S. Army Space and Missile Defense Command. The Arsenal's advanced research and development of weapons used on land and in space is unmatched. Over 14,000 military and civilian personnel work at Redstone.

As a result of the 2005 BRAC (Base Realignment and Closure Commission) 4,800 jobs will be relocating to the Redstone Arsenal. Seven different entities will move to Redstone as part of BRAC 2005: U.S. Army Material Command; U.S. Army Security Assistance Command; U.S. Army Space and Missile Defense Command; Missile Defense Agency; U.S. Army's Aviation Technical Test Center; Rotary Wing Air Platform Research, Development, Acquisition, Test and Evaluation; and the U.S. Army 2<sup>nd</sup> Recruiting Brigade.

### Marshall Space Flight Center

Headquartered within Redstone Arsenal, MSFC employs over 2,700 workers. The center houses the following programs: Advanced Space Transportation Program, Center for Excellence for Space Propulsion, Center for Microgravity, Center for Space Transportation Systems, Chandra X-Ray Observatory, Earth and Science Research and International Space Station. MSFC is also home to the U.S. Space and Rocket Center, which hosts over 300,000 visitors annually.

### Fort Rucker

Located near Ozark, Fort Rucker is the home of U.S. Army Aviation. Fort Rucker trains helicopter pilots for the Army and other international organizations. Fort Rucker employs over 8,000 military and civilian workers.

### Maxwell Air Force Base

Located in Montgomery, Maxwell Air Force base employs over 4,000 military and civilian personnel. Maxwell is home to the Air University for professional military education. The academic training of Air Force officers at Maxwell and the computer support at its Gunter annex is used worldwide.

### National Space Science and Technology Center

The Huntsville based NSSTC is a partnership between NASA's Marshall Space Flight Center, Alabama universities, federal agencies, and industry. The laboratory is for cutting-edge research in selected scientific and engineering disciplines. The NSSTC houses the following centers: Space Science Research, Global Hydrology and Climate, Information Technology Research, Advanced Optics and Energy Technology, Propulsion Research, Biotechnology Research and Materials Science Research.

## Major Milestones

- 1930s: Maxwell Air Force Base became the designated home of the U.S. Army Air Force Tactical School for professional military education.
- 1940s: Redstone Arsenal was established in Huntsville.
- 1950s: Werner von Braun came to Huntsville.
- 1960s: Marshall Space Flight Center (MSFC) opened at Redstone Arsenal, making Huntsville a major center for the future development of rockets and space exploration.
- Apollo 4 launched using the Saturn V rocket developed at MSFC.
- 1970s: The Alabama Space and Rocket Center opened in Huntsville, becoming the future site of the U.S. Space Camp and Space Academy.
- The Lunar Roving Vehicle, built in Huntsville, was driven on the moon.
- 1980s: The first Space Shuttle mission was powered into orbit by the main engine and solid rocket boosters developed by the Marshall Space Flight Center.
- Lockheed Martin moved its smart missile operations from Orlando, Florida to Troy, Alabama.
- 1990s: The Army's Aviation and Missile Command moved to Huntsville.
- 1998: Boeing announced that the Delta IV rocket would be built in Decatur.
- 2003: All Boeing Delta IV rockets are consolidated to Alabama for production.
- 2005: EADS, North America announced it will build an aircraft engineering center and future production facility for KC-330 aerial refueling tankers.

