

U.S. Aviation/Aerospace Industry Report on the Competition



Aviation Partnership of Louisiana



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PROJECT OVERVIEW

The purpose of the project was to update the 2004 report done for the Aviation Partnership of Louisiana (APOL) on the activities and trends in the aviation/aerospace industry in competitor states and metro areas for the purpose of understanding the competitive position (strengths and weaknesses) of the Baton Rouge-Lake Charles-Lafayette-New Iberia- Alexandria-Shreveport areas (Louisiana).

This report is a compilation of resources & assets as well as examples of numerous creative programs and initiatives that the competitor areas have developed to assist in growing the aviation/aerospace sector. It also contains Louisiana's strengths and weaknesses as a place in which to operate an aviation/aerospace business and also some recommendations for the APOL to attract the industry to Louisiana. It was not intended to be an in-depth analysis of the sector but an outlook for opportunity.

SCOPE OF PROJECT

The APOL wanted to focus on the top structural aspects of a defined geographic area (list below) that are critical to the development of the aviation/aerospace industry in Louisiana including:

I. *Workforce Development* issues specific to the aviation/aerospace industry including:

- Labor force availability
- Skill level
- Incentives and training funds
- Training programs
- Centers of Excellence in aviation/aerospace training & education

II. *Infrastructure* (added anything new since the last report)

- Aviation parks serving the industry
- Airports
- R & D facilities, etc.

III. Taxes that apply specifically to the aviation/aerospace industry that might affect the growth of the industry, i.e., sales & use, property, and other fees. NBAA State Sales Tax Guide was the source used.

IV. Incentive Programs were confirmed from the 2004 report for the State and Local levels to determine what is offered to the aviation/aerospace industry including any customized packages used to locate or expand the industry. I confirmed what was in the 2004 report and added any new programs impacting the industry using Area Development magazine's annual incentives overview.

The following information on each existing program will be provided:

- 1) **Description** of each program – description and benefits to a qualifying company, i.e., income/franchise or sales/use tax credits, grants or loans;
- 2) **Qualifications** of each program - what companies need to do in order to qualify for the incentive.

V. Marketing the aviation/aerospace industry at the state and/or local level to include identifying:

Organizations formed specifically to research and target the industry, i.e. Alabama Commission on Aerospace

Marketing methods – advertising, direct mail, trade shows, networking, etc.

VI. Existing Industry Data Aviation Industry Association trends and forecast report I might come across.

Aviation/Aerospace states and metro areas in which to focus include:

- (a) Birmingham; Mobile; Dothan, Huntsville, Alabama
- (b) Jacksonville; Ft. Lauderdale, Florida
- (c) Wichita, Kansas
- (d) Columbus, Mississippi
- (e) Greensboro-Triad, North Carolina
- (f) Charleston, South Carolina
- (g) Amarillo; Dallas/Ft. Worth; San Antonio, Texas
- (h) Oklahoma City; Tulsa, Oklahoma

Data and information gathered was to be similar to what was reported in the 2004 report, which identified and described the situation of the industry in the state and local areas, new infrastructure developments, workforce, resources/assets, incentives and marketing initiatives.

METHODOLOGY

Step 1 *Area Development Magazine*, which publishes an annual incentive overview for each of the U.S. states, was used as the basis for updating the state incentives.

Step 2: Primary research in the form of telephone calls and/or e-mails to the state and local economic development departments was conducted in order to find out what is occurring in the industry and other data as outlined above.

Step 3: The states and areas outlined as having a significant aviation/aerospace industry will also be explored with the state departments, local economic developers, local government, aviation/aerospace organizations, workforce development entities, and possibly universities/colleges & training institutions, and other contacts as referred to research the information as outlined above.

Step 4: Phone interviews were conducted with each of the member regions in the Partnership including Baton Rouge, Lake Charles, New Iberia, Alexandria, Shreveport and Lafayette to gather same data as reported for the other states. The 2004 report was used as the basis of reporting.

Step 5: Coordinate with Louisiana Economic Development (LED) concerning ongoing state competitiveness analysis and surveys that are being conducted as well as information and questions that have resulted from LED's Project Lynx.

NOTE: This research was subject to the ability to speak with economic developers about their areas as well as the research available on the EDO web sites.

EXECUTIVE SUMMARY

The data and information resulting from this research should prove to be quite insightful as to the presence of the aviation/aerospace industry in each of the competitor areas; their marketing plans; workforce skills and training resources; incentives offered at the state and local levels; and area resources/assets that are attractive to the industry. This report also includes an outline of the strengths and weaknesses of Louisiana (communities in the Aviation Partnership of Louisiana), some 'best practices' of the competitor areas, as well as recommendations on tactics for APOL on growing the industry in the Louisiana.

Contacts in each of the states were reasonably forthcoming about the industry in the area and programs supporting it. We were able to profile the industry in each of the states – how it all began and/or where it is today, what types of businesses exist and the impact to the community. With regard to aviation/aerospace marketing programs, there are some interesting programs in place to target certain sectors of the industry and identifying specific companies. Industry intelligence, knowledge of industry trends and growth sectors/companies, is being used in the competitor communities in order to use their resources most effectively. Traditional marketing methods such as marketing visits, trade shows and web sites are also being utilized. The governors and congressional delegations have also been a marketing tool, which is something Louisiana has the opportunity to do as well.

Workforce issues are the same in any industry – availability, recruiting, training, and retaining them. There is a shortage of workers, both skilled and trainable, and many companies are moving further into contract workers and creating their own recruiting and training programs. The education and training programs are in place whether through the technical or community colleges, colleges/universities or on-site at local businesses. All the communities struggle with obtaining the interest of high school students in working in the industry and dual enrollment. Workforce consortiums consisting of industry, economic developers, education and training institutions, and local authorities meet regularly to discuss the issues and develop plans to overcome them. One issue that doesn't seem to be at the forefront is finding employment for laid off workers when companies lose major contracts.

Incentives are a big part of competing for the aviation/aerospace business. Most communities have policies and guidelines in place to make sound and quick decisions. Some states have enacted recent legislation to assist qualifying companies with cost reductions. They have funding mechanisms in place to provide infrastructure and grants for economic development projects, whether they are from tax incremental funding from projects, bond financing or dedicated sales tax or millage.

As we say in Louisiana, there is a bit of 'lagniappe' in the report on interesting findings and aviation/aerospace incentives offered by selected states or communities that have a significant presence of the industry to provide further insight into what the APOL and the state of Louisiana could possibly do.

2008 Industry Trends and Forecast for 2009

The Aerospace Industries Association (AIA), in its annual year-end review, commended the U.S. aerospace industry for showing resiliency and a modest 2008 growth in trying economic times. Aerospace sales were on pace to reach \$204.4 billion for 2008, a 2.1 percent increase, which was lower than in recent years, but a record sales figure for the industry for the 5th consecutive year.

The industry also continued to post very strong export numbers, reaching \$99.2 billion in 2008. That fuels a critically important foreign trade surplus of \$61 billion, the same figure as 2007 and the largest trade surplus of any U.S. manufacturing sector.

Employment also remained solid with an average workforce that reached 655,500 for 2008, about 10,000 more than in 2007.

AIA is forecasting modest sales growth for 2009. Sales should reach \$214 billion, a figure that is about 2.2 percent more than the total the industry would have achieved in 2008 had a work stoppage not impacted the bottom line. The short-term forecast could change in 2009 given the volatile economic times. However, the industry's key advantages position aerospace as one of the few U.S. manufacturing industries with visible long-term demand growth.

In recent years, aerospace companies have gained more solid financial footing in a number of ways, such as paying down debt and increasing solvency. These responsible strategies are now paying off, enabling aerospace companies to meet financial obligations and to continue to produce goods and services. Many companies have backlogs of contract orders that is anticipated to last through the next year or so, comprised largely of civil transport aircraft with a large part of it in foreign orders.

U.S. aerospace companies have become more geographically balanced in recent years, thereby reducing their reliance on any one market and foreign trade has become a larger part of their sales. Foreign customers bought U.S. aerospace products in record numbers, partly due to the declining U.S. dollar. The aerospace industry will make a significant positive impact on the nation's trade balance with a surplus of over \$60.6 billion.

It is unknown what will happen in the industry, but a December 2008 report by the U.S. General Accounting Office stated that it is unlikely that the Obama administration will slash defense spending in the near term, but has indicated a possible shift in priorities.

Civil Aircraft Sales

Sales increased by \$400 million to \$80.6 billion. Top sales were in transport aircraft, helicopters and general aviation aircraft. The U.S. civilian aviation market has grown tremendously in recent years on the strength of global economic expansion, world trade and aircraft innovations. However, on the short-term, commercial airlines are cutting back due to decreased customer demand and the same for business jets.

Military Aircraft Sales

Sales were up to \$54.7 billion, which is a reflection of the gradual rise in aircraft R& D, aftermarket labor and materials and UAV production and support. For aircraft production, fighter planes were responsible for the largest sales, followed by helicopters and military transports. Defense spending is sure to be down in production and R & D, which will likely have long-term consequences for the nation's competitiveness.

Missile Sales

This segment experienced strong growth in 2008 with a 6.7% increase to \$13.2 billion as the U.S. remains the largest buyer of missiles and R & D spending continues.

Space Sales

Space sales, made up primarily of R & D, and production costs & services, were up 4.2% to \$33.4 billion. R & D was flat in 2008, and production & services was up 15 percent. U.S. commercial satellites and launch services business grew dramatically.

Exports

Exports of U.S. aerospace products are expected to increase modestly in 2008 to \$99.2 billion with civil transport aircraft well over 1/3 of total exports. 2008 was a big year for general aviation aircraft, and foreign demand for military aircraft, engines and parts also increased. Japan was the largest market at 8.5% of aerospace exports.

Imports

Total imports are expected to increase by \$2 billion to \$38.6 billion, although the U.S. will import fewer civil transports and general aviation aircraft in 2008. Imports of helicopters and aircraft engines are on track for big increases, and aircraft engines & parts up well over half of U.S. aerospace imports. France, Canada, the U.K., Japan and Germany are the top 5 aerospace suppliers to the U.S. (3/4 of imports)

Southern U.S.

In recent years, the southern United States has attracted some significant projects for reasons that other long-time aviation centers such as Wichita and Dallas can't compete against. The recent union worker strikes in Wichita (Boeing) and Dallas (Vought) brings to mind the right-to-work laws in the southern states. These strikes lasted for weeks and the Boeing strike impacted the unveiling of the company's new Dreamliner. Taxes, real estate, wages, and other operating costs are much lower than in the Midwest and East Coast, traditional aviation/aerospace clusters. Incentives and deal closing funds have been utilized. The quality of life - climate, housing, schools, outdoor activities, etc. - is a location factor that has moved up in importance.

Competitor Communities

There were 15 areas of the country researched for this project as identified by the APOL either because of their long-term history in the aviation/aerospace industry or more recent experience. The areas were chosen by the Aviation Partnership of Louisiana (APOL) as follows:

- (a) Birmingham; Mobile; Dothan, Huntsville, Alabama
- (b) Jacksonville; Ft. Lauderdale, Florida
- (c) Wichita, Kansas
- (d) Columbus, Mississippi
- (e) Greensboro-Triad, North Carolina
- (f) Charleston, South Carolina
- (g) Amarillo; Dallas/Ft. Worth; San Antonio, Texas
- (h) Oklahoma City; Tulsa, Oklahoma

There are specific reasons why areas such as Wichita, Dallas/Ft. Worth, Oklahoma City and Tulsa have been attractive to the aviation/aerospace industry in the past and why the industry is expanding into new areas including Greensboro NC, San Antonio and Amarillo TX, and Columbus MS. The former have a history of the industry whether from the existence of a former military base or a local inventor, and have grown with the industry from its beginnings into a significant economic engine, sustaining for 50 years or more. The latter, the 'newer growth areas,' are those areas that have seen growth occur over the last decade or two have a new focus on the industry as a target for economic growth. They are developing the infrastructure necessary to attract the industry. These locations have investments in place, yet the growth strategies vary depending on what viable sectors of the industry exist.

Wichita, Dallas/Ft. Worth, Oklahoma City and Tulsa have a large presence of the big aerospace companies - OEMs, MROs, assemblers, electronics, guided missiles, and space vehicles and parts. These communities and industries are growing from within as contracts increase at the same time adjusting to the recent economic downturn. Wichita and is sustaining its existing industry, while also focusing on niche markets such as advance materials composites. Ft. Lauderdale revised its master development plan as it found itself relatively out of land for development. Without a product it will be difficult to continue to grow. Oklahoma City is proactively pursuing commercial space opportunities and also acquiring new sites for existing industry growth.

The 'new growth areas' have developed aggressive plans to increase the odds of attracting additional growth. Greensboro, NC is well-prepared with an incentive policy and guidelines, which is well-known now that HondaJet operates its R & D and HondaJet lightweight aircraft manufacturing facility at the ever-expanding Piedmont Triad International Airport. The airport and state of North Carolina have together invested several hundred million dollars over the last 10 years in this regional airport. The region is a major transportation hub for East Coast and Mid-America destinations.

Amarillo, the only metropolitan area of Texas that has a revenue stream for economic development from a local sales tax, has a new economic development plan refocusing the city's growth plan. The Southeastern Alabama Aviation Triangle has grown to 22 counties and continues to aggressively market to the aviation/aerospace industry using 'industry intelligence' to determine niche markets and specific companies in which to target. Although not unlike any other communities in this study, Columbus, Mississippi has had the help of its congressional delegation to jumpstart the development of the industry in its 17-county region.

Mobile, Alabama was the #1 choice for the U.S. Air Force refueling tanker assembly facility even though it had just landed the \$4 billion ThyssenKrupp steel mill plant employing thousands of related workers. Mobile's experience in MRO and manufacturing in Alabama's Aviation Triangle assisted in making that decision; however, workforce, costs, and other location factors must have come into play. There is also infrastructure in place and incentive plans to close deals.

The Charleston region has 16 million square feet of industrial and commercial development slated for logistics and other industries as the Port of Charleston completes a new terminal expansion in anticipation of growth from Asian and widening of the Panama Canal. It will also see a consolidation of military facilities by 2010 with anticipated civilian job growth. The regional EDO has identified niche markets within the aviation/aerospace sector.

KANSAS

Wichita, Kansas, located in south-central part of the state, is the largest city in the Kansas. The 5-county region has a population over 600,000 (8% growth 2000-2006) and labor force of 318,000, and employs 47,400 in the aviation/aerospace industry. Wichita is often referred to as the "Air Capital of the World." According to the Kansas Department of Commerce, the state annually produces approximately 55 percent of the western world's general aviation aircraft. It not only builds aircraft, it produces everything required to build and equip them - engines, avionics, ground support equipment, airport systems, aircraft instruments, navaid systems, de-icing and anti-icing systems and 21st century research and development. It is home to industry leaders such as Boeing, Cessna, Hawker Beechcraft, Learjet, Bombardier, Raytheon, and many subcontractors, built since the 1920's when an inventor produced the first commercial airplane in the United States.

Since the 2004 study, Wichita has made some strides towards proactively working to retain and grow the industry in a more logical way. A new aviation center of excellence is under construction and slated to open sometime in 2009 with assistance from the state

of Kansas for construction and equipment (roughly \$5M). Another move towards advancing the industry is that the advanced materials sector (consortium of business leaders, education and the chamber) is exploring composites to replace sheet metals for the aviation/aerospace industry. A recent \$5 million WIRED (Workforce Innovation in Regional Economic Development) grant from the U.S. Department of Labor is expected to help link the aviation sector with the related advanced materials/polymers industry and train a workforce in this specific trade.

The state of Kansas made a bold move during its 2006 legislative session with the exemption of business property tax that should have a significant impact for aviation/aerospace businesses as they are capital-intensive. Effective July 1, 2006, business machinery and equipment newly purchased, leased or moved into Kansas is exempt from property tax.

OKLAHOMA

The two metro areas of Oklahoma, Oklahoma City and Tulsa, have been centers for manufacturing and maintenance & repair work for aviation/aerospace companies and the military for many decades. Slow, steady growth has occurred over that time and the state now boasts 400 plus companies employing almost 73,000 production and engineering workers. The Tinker Air Force base in Oklahoma City has been its catalyst for growth while Tulsa is mainly commercial operations including American Airlines, the largest aviation/aerospace employer in the state with approximately 7,000 employees and growing. Both metro areas had major project announcements in 2008 and are anticipated to make it through 2009 with some growth. The industry is a significant part of the Oklahoma economy (in and outside of these two metro areas) and is targeted at the state and local level for growth.

Oklahoma City

Oklahoma City, the state capitol, is located at the center of the state where Interstates 35, 40 and 44 meet. The city stretches into five counties (approximately 50-mile radius) with a population of just under 540,000, and just over 1.1 million persons in the region. The region's 265 aviation/aerospace firms including Pratt & Whitney, Northrop Grumman and Lockheed Martin employ approximately 38,000 people mainly in MRO for the military but some commercial. According to the Chamber contact, he believes the industry will hold steady and perhaps grow some during this recession period as the majority of the MRO work is defense related. As with most heavy production worker communities across the country, there is an anticipated shortage of workers, even engineers in the Oklahoma City area.

In July 2008, American Airlines announced an expansion of its MRO facility with an 80,000 square foot hangar, the first new hangar in 20 years at the Tulsa International Airport, which serves the company's fleet as well as other companies around the world. In an aggressive move by the city of Oklahoma City, the recently closed General Motors plant bordering Tinker AFB was purchased with a bond issuance passed by voters as a significant site and facilities for expansion of the MRO industry. And, the state of Oklahoma continues to support the industry in various ways including a new tax credit program to retain and attract workers to meet current and future demand.

Tulsa

Tulsa is a 10-county metro area in northeast Oklahoma with a population of nearly 900,000. The aviation/aerospace industry in Tulsa began initially with manufacturing as well as maintenance and repair work just after World War II as the military moved its assets from the West Coast for protection and landed at the Tulsa airport in a building one-mile long. Not long after WWII, Tulsa attracted American Airlines and the business grew from there to include more defense work with major growth in commercial manufacturing and some MRO, and today includes over 100 companies and employing 30,000. Tulsa is ranked 8th nationally for the size of its aerospace engines manufacturing cluster and 20th for its defense-related cluster.

Tulsa International Airport (TUL) and its surrounding area is the major hub for the aviation/aerospace industry. Its central location in the Midwest U.S. is easily accessible by a multi-modal transportation network. Companies on-site and surrounding TUL include the Air Army National Guard, American Airlines Maintenance & Engineering Base, Spirit AeroSystems, Fed Ex, U.S. Aviation and the Spartan College of Aeronautics (adjacent to southern part of TUL).

Many of these companies are growing or have plans regardless of the economic situation. NORDAM Group has hired a retired brigadier general to double its military sales. LMI Aerospace, with a manufacturing plant and distribution at the Tulsa Port of Catoosa, says demand from its major customers is growing as the company reports record quarterly earnings.

ALABAMA

Since the earliest days of manned flight, Alabama has played a pivotal role in the advancement of aviation and aerospace. In 1910, Orville and Wilbur Wright established the first civilian flying school in Montgomery at what later became known as Wright Field. Four decades later, Werner von Braun's German Rocket Team moved to Redstone Arsenal in Huntsville and in 1969, their Saturn V rocket propelled the first lunar landing team to the surface of the moon. In 1984, the first Army Apache helicopter arrived at Fort Rucker near Dothan expanding the Army's helicopter training mission there. In 1990, Marshall Space Flight Center space scientists deployed the Hubble Space Telescope. In 1998, NASA launched the first two modules of the International Space Station and Chandra, the world's most powerful X-Ray telescope. Also in 1998, the largest, most modern rocket factory in the world was built in Decatur by Boeing, and, in 2007, it became the United Launch Alliance, a joint venture with Lockheed Martin. In 2006, EADS selected Mobile as the site of a new engineering center support in its bid for the KC-130 refueling tanker (project delayed by federal

government until further notice). By 2003, Alabama's aerospace industry was employing directly and indirectly more than 139,000 people with a payroll of \$6.16 billion. And through 2011, the U.S. Army is relocating headquarters for the Army Materiel Command, Space & Missile Defense Command, and Security Assistance Command to Redstone Arsenal in Huntsville, which is anticipated to have a jobs impact of approximately 10,000.

Dothan

A rural area, though one of the largest in the southeast region, is Dothan where Ft. Rucker and the Embry Riddle Aeronautical School campus is located. Dothan, Houston County, Alabama is a community of 91,000 (county) and 140,000 in the region, located in the southeastern corner of the state on the Georgia and Florida borders. It is part of a 4-county region, consisting of Houston, Dale, Coffee and Pike counties, which has 12.3 percent (16,256) of the aviation/aerospace jobs in the state. It is home to **PEMCO WORLD AIR SERVICES** that provides heavy maintenance and modification services for both wide and narrow body aircraft from around the world (mainly Northwest Airlines.)

The area should continue to grow the MRO business because of the growth in outsourcing by commercial and general aviation companies, as well as the federal government. The next level for aviation is to get to the design and engineering phase of it that provides higher-wage jobs and investment.

Mobile

The Mobile Bay area, located in the southwestern corner of Alabama, covers two counties, Mobile and Baldwin, with a population of 404,000. The region provides numerous resources that are attractive to the aviation/aerospace industry including Alabama's only port facilities on Mobile Bay with a new \$300 million terminal; is located on Interstate-59 and 20, and a short distance from I-10 and 65; two airports; five major railways; and land and buildings available at the Brookley Complex, a former air force base redeveloped into a 1,700-acre, 6 million square foot facility industrial airpark. France-based EADS and its partner Northrop Grumman, which is currently located at Brookley, were awarded the U.S. Air Force contract to build its new refueling tanker, but the project is stalled as further discussions take place. Mobile was also seriously considered as a location for Boeing's headquarters in 2003. When asked why Boeing considered Mobile, Chamber executive director responded that the company found the multi-modal transportation system to be excellent for shipping supplies in and planes out.

Huntsville

The Huntsville MSA is 2-county region with 386,000 persons located on the Tennessee state border. It is Alabama's largest aviation/aerospace sector built upon the NASA/Marshall Space Flight Center and U.S. Army Redstone Arsenal, which are both on the border of significant change in the next several years. This is also the high-tech, high-wage aspect of the industry that is projected to grow by 10,000 jobs in the next 3 to 5 years due to the transition of the U.S. Army headquarter relocation for the Army

Materiel Command, Space & Missile Defense Command, and Security Assistance Command to Redstone Arsenal. Additional contractors and other companies are anticipated to flock to the area to serve the industry resulting in a huge economic boom.

Most of the aviation/aerospace activity is located in several areas in the Huntsville MSA including the Redstone Arsenal's facilities and surrounding land (because of strict security clearance needed by employees and contractors), Cummings Research Park and the Huntsville International Airport including its Jetplex and Intermodal centers.

The state of Alabama continues to build upon the opportunities in the Huntsville-Decatur area. In July 2008, the governor announced a \$71 million investment in a new robotics center to assist in advancing the robotics sector of the aerospace industry. The facility will include a Robotic Maintenance Training Center, an Advanced Technology Research and Development Center, and an Integration and Entrepreneurial Center to be rolled out over the next few years.

Birmingham

Though Birmingham, the state's largest metropolitan area, is a growing area, it has the smallest percentage (5.7%) of the aviation/aerospace employment in Alabama. The growth has mainly been in areas other than aviation (automotive, biomedical healthcare, etc.), although Pemco, its largest aviation employer, has consistently grown over the last 40 years. Pemco has done maintenance, repair and overhaul work for the U.S. government for over 40 years (also does commercial, but government is the largest portion.) The company employs over 1,500 persons at its state-of-the-art Pemco Aeroplex on 200 acres adjacent to the Birmingham International Airport. It has 1.2 million square feet of hangar space with 10 flow-through hangars, and 125,000 square feet of bonded warehouse space and numerous other facilities, and continues to grow with the community. Pemco is the company of choice in the performance of heavy structural repair, depot maintenance, and modification work on both the C-130 and especially the KC-135 fleet of aircraft. It relies heavily on its workforce as an asset to gaining additional contracts. The economic development entities focus on insuring that Pemco has what it needs to continue to grow.

MISSISSIPPI

Mississippi has not historically had a large presence in the private side of the aviation/aerospace industry, although it has a military presence with the NASA Stennis Space Center on the Gulf Coast. However, the state's Washington delegation and governor are making great strides in recruiting the industry and building capacity to serve it.

From military helicopters to unmanned aircraft to guided missile R & D to space vehicle components, Mississippi's aviation/aerospace industry has grown to 3,700 employees. The latest projects include General Electric's Batesville, northeast Mississippi, which is producing composite fan blades for jet engines, a European Airbus consortium helicopter plant in Liberty, just

north of Jackson, Northrop Grumman's unmanned aerial vehicle aircraft production in Moss Point, and Rolls-Royce's jet engine testing facility at Stennis in Bay St. Louis. Stennis is also home to the NASA Shared Services Center, a consolidation of common services performed agency-wide in the areas of financial management, human resources, procurement and information technology.

The state is working on building capacity to serve the industry in numerous ways and not just recruiting companies with incentives. GE is partnering with engineers at Mississippi State University's Aerospace Engineering Research Center. In 2008, the University of Mississippi, the state of Mississippi and Toyota Motor Corp. joined together to create the Center for Manufacturing Excellence, offering students not only degrees in engineering with an emphasis in manufacturing but also strong cross-disciplinary studies that reflect other skills needed in engineering and the sciences, such as business, management, accounting, leadership and human resources.

According to the director of the MS Manufacturer's Association, the next important step for Mississippi is to reduce and/or eliminate the tax burden on businesses, especially the smaller ones that are going to have a difficult time continuing to operate during and after a recession. Mississippi has a lot of incentive programs but many are not applicable to business and much change is needed.

NORTH CAROLINA

Greensboro, Guilford County is located in northwest central North Carolina in the 12-county Piedmont Triad Region of 1.5 million. The community has grown substantially over the last 20 years as evidenced by the population and employment increases, and growth of the Piedmont Triad International Airport chosen as the site for the 5th Federal Express hub, a 1 million sq. ft. facility employing 1,500 people scheduled to open later in 2009. The city, county and airport have been smart in their investments that have helped the community grow, which was once a tobacco farming community.

Industry employers in freight delivery, aircraft manufacturing, R & D and aviation maintenance have chosen to grow in Greensboro because of the skilled workforce, educational resources, and excellent transportation and airport facilities. The east coast location is accessible by more than half of the U.S. population and most major markets are within 650 miles.

The aviation industry is one of the targets for the area and it has plans to grow the industry through working with its existing industry in identifying suppliers that would most likely be interested in locating there. Part of the strategy is to continue to invest in the airport and grow it into an economic engine, especially as an asset for the aviation/aerospace industry. One recent development was the location in 2000 of Honda's research facility at the airport and several years later it opened its manufacturing doors in a building that has a great presence.

The state does not have an aggressive incentive program and relies on the local authorities to close a project, hence, the stipulation in legislation that states that communities have a competitive project. As of 2007, aircraft maintenance and repair companies are eligible for the tax credit program for investment and job creation up to 50% of the company's total income/franchise tax liability, a

major support of the industry. We also learned during the writing of this report (January 2009) that the legislature is proposing a cut in the state's corporate income tax rate (6.9% to 6.5%) and making fundamental changes to its 13 year-old William S. Lee system of tax credits and pump more money into its largest cash-for-jobs grant program.

TEXAS

Some of the world's most advanced military aircraft are designed and built in Texas. This industry is responsible for 200,000 jobs at 1,700 firms, and has workers earning an average annual salary of \$50,000. Texas is also the 2nd largest state in terms of population and congressional delegation membership. The latter two have helped the state to attract and build the industry in top U.S. aviation/aerospace regions including Dallas/Ft. Worth, San Antonio and, more recently, Amarillo in manufacturing parts, equipment and aircraft. There is a history of defense work beginning with that conducted on military bases for the U.S. government, and spinning off into private companies doing both defense and private work.

Texas was the lead state in terms of in-migration in 2008 and was also a top jobs creator in the U.S. From October 2007 to October 2008, the U.S. lost over half a million net jobs while Texas created a quarter of a million net new jobs. The Dallas-Fort Worth area ranked 3rd and San Antonio 6th in the nationwide ranking. Texas' unemployment rate is nearly a full percentage below the national average, and the Lone Star State is home to more Fortune 500 headquarters than any other state in the nation.

As a former Air Force pilot, Texas Gov. Perry recognizes the importance of the aerospace, aviation and defense cluster to the Texas economy. Since 2003, the Governor's Office of Aerospace, Aviation and Defense has worked with companies in those sectors to create 3,642 new jobs. As a result, more than 184,000 Texans hold jobs in this industry while the state has maintained its leading role as home to almost 2,000 aerospace companies.

San Antonio

San Antonio, a growing metropolitan area of 1.3 million in south-central Texas, has become more attractive as a place to do business over the last decade as business and economic development leadership have come together to invest in the community. The companies in the city reflect the types of businesses in which the Aviation Partnership of Louisiana is targeting including a Boeing MRO employing 2,000; UPS Central District Office employing 1,500; Lockheed Martin's aircraft overhaul facility employing 500; and Pratt Whitney aircraft maintenance repair facility employing 350. However, these companies have had a presence for some time, mainly since the Vietnam War when there were four military bases in the area.

Two former military bases, Kelly Air Force Base and Brooks Air Force base have been re-developed into significant assets for the city. Port San Antonio (Kelly AFB) is a master-planned, 1,900 acre aerospace, industrial complex and international logistics platform. Air Force Brooks City Base, the 1,246-acre property, is being redeveloped into a location for science, research and

technology including 2 million square feet of lab space, office space, light industrial facilities and recreation/fitness areas available to companies to re-locate or locate their company here. Another site for the aviation/aerospace companies is the San Antonio International Airport, though it has limited expansion room. Covering a total of 2,600 acres, San Antonio International is the primary airport serving the city. The city's interest in becoming a mecca for homeland security recently announced that the Department of Homeland Security and Customs and Border Protection will designate San Antonio International Airport permanently as an "airport of first landing" for private aircraft.

Amarillo

Amarillo is a small Texas city (185,525 persons; 217,000 in the 2-county MSA) located on the northwestern corner of the state (center of the Panhandle) bordering New Mexico and Oklahoma, two other states targeting the aviation/aerospace industry. The Amarillo Economic Development Corporation, the economic development entity for the Amarillo region is pursuing the industry after having landed Bell Helicopter in 1999. The organization developed a newly focused economic development strategic plan in hopes of fine-tuning its target industries and being smarter about where it invests its economic development fund. The city is the only metropolitan area in the state that was allowed to option the economic development sales tax (1/2 cent), which sees annual revenues of approximately \$10 million. The plan calls for slow, smart growth much of it from within.

There were numerous reasons why Bell Helicopter Textron decided to locate its tilt rotor aircraft assembly center in Amarillo in 1999. During the Vietnam War Bell had a facility in Amarillo that ended up displacing workers that were still in the area. Because the company previously had a positive experience in the city it was strongly considered. The existing workforce and underemployed persons in the area were appealing. The city and AEDC had the money to build the facility the company wanted to build the new D-22 Osprey for the marines. The company was also attracted by the stable weather conditions - sunshine 326 days a year and no threat of catastrophic weather.

The Bell Helicopter's Military Aircraft Assembly Center, also the site for the majority of the aviation/aerospace industries, is located at the former air force base, which the city acquired along with the 13,400 foot runway. Bell had a rocky start in Amarillo when two of its new Ospreys crashed during demo due to a hydraulic line rubbing against the rotator. The company went back to the drawing board and has expanded operations over the last several years to include remanufacturing of other helicopters (Hughey, Cobra and V2 Osprey) It doubled the size of its building to accommodate 4 product lines. In 2006, a civilian version of the D-22 was added into production. It is also home to numerous suppliers including ANO Composites, TAC Air (modern FBO), Tradewind Turbines (MRO for commercial airlines and re-manufacture Beechcraft helicopters), and Leading Edge (paint aircraft including for Bell, which requires special paint for the Osprey). The majority of these companies have located over the last decade.

Ft. Worth/Dallas

The Dallas-Fort Worth-Arlington MSA is the largest population center (6 million) in Texas and the region added the second-largest number of jobs of any of the nation's biggest metropolitan areas from 2007 to 2008. The area has the largest cluster of aviation/aerospace businesses, employing approximately 86,000 persons (75,000 private, 11,000 public) Companies such as American Airlines, Lockheed Martin, Bell Helicopter, Raytheon and Vought Aircraft Industries are in the aircraft parts, engineering, design and structural manufacturing side of the industry that provides high-wage jobs and it also does quite a bit of MRO work.

New infrastructure is being developed by both private and public entities to assist in the continued growth of the industry. The Dallas Logistics Hub, a privately-owned 6,000 acre master-planned logistics park just south of downtown Dallas, is adjacent to four major highways, dual rail, intermodal facilities and a future air-cargo airport. The complex offers readily available industrial space for-lease or build-to-suit sites for distribution, warehouse, manufacturing, office and retail.

New taxiways along the perimeter of the Dallas-Ft. Worth International Airport airfield are on the development board, enabling arriving aircraft to taxi around DFW's seven active runways rather than wait to cross them. The logic behind this expansion approach is that risk of possible incursions is averted and increases the use of runways for takeoffs and landings.

Though job growth occurred ('07-'08), we read in the fall 2008 about numerous companies cutting jobs because of the economic situation while others are moving ahead depending on their contracts.

SOUTH CAROLINA

The 603,000 person 3-county Charleston Region (Charleston, Berkeley and Dorchester counties) accesses Interstates 26 and 95. The region has much to offer the aviation/aerospace industry including a skilled workforce (heavy in the automotive, defense and growing the life sciences industries); assets such as SPAWAR (navy intelligence unit); engineering schools in the area; industrial park and speculative buildings, much that has been developed in recent years by private developers given the defense industry expansion and anticipated port traffic increase; 4th largest container port in the U.S.; and the only air force base on the East Coast. It has a reputation for talent in the automotive industry and that has helped put it on the radar.

The U.S. Navy has reemerged as the largest employer in the region, with over 12,000 employees - including both military and civilian workers. SPAWAR directly employs 1,700+ active military and civilian employees, including more than 600 degreed engineers. The U.S. Air Force also has a presence in the region, with the largest C-17 air base on the East Coast. In one of 13 Joint Base Initiatives within the Department of Defense, the Charleston Air Force Base and Naval Weapons Station are expected to become Joint Base Charleston by 2010.

The military presence has spawned a relatively healthy commercial aviation/aerospace industry as high-tech systems and installations developed often find a home in private industry. The Charleston Regional Development Alliance is targeting the

advanced composite materials, precision metal parts, and system integration sub-sectors. Vought has done quite a bit of work on the C-17s that are ubiquitous in Charleston-area skies, and some 300 of its workers are crafting pieces of Boeing's new 787 Dreamliner at a plant in North Charleston in its joint venture, Global Aeronautics, with Alenia North America. Venture Aerobearings unveiled its plant that will supply parts for jet engines.

The region is also becoming increasingly attractive as a logistics center, especially as the Port of Charleston expands its infrastructure and services in anticipation of the increased traffic from Asia and the opening of the Panama Canal. A recent issue of *The World Trade Magazine* recognized South Carolina as one of the nation's "best kept supply chains secrets." It also noted plans to expand the Port of Charleston by 50% by 2013 with a new 280-acre container terminal under construction on the former Navy base and Dubai-based logistics company Jafza International's plans to build a state-of-the-art distribution facility on 1,300 acres in nearby Orangeburg County. We read on the CRDA's web site that approximately 16 million square feet of speculative industry space is slated for development and 1 million under construction.

FLORIDA

Manufacturers of aeronautical instruments, rockets, and spacecraft or satellite communications equipment and services, MRO, and aircraft manufacturing comprise some of the 400+ aerospace companies in Florida, which employ nearly 53,000 workers. There are 129 public airports, over 600 private airports and 27 military airfields. In addition, one-fifth of the world's flight training occurs in Florida. As NASA continues to commercialize its operations, new and interdisciplinary opportunities are being identified as well, within areas such as medicine, manufacturing and electronics.

Florida firms consist of well-known, global giants as well as strong, burgeoning suppliers and vendors. Together, these companies have developed a pool of scientific, technical, and management talent that is providing the foundation for the expanding aviation industry in Florida. Each region has invested in the land, buildings and infrastructure of former bases and other sites and has master & economic development plans to attract the industry. However, each has its unique assets to draw upon to retain and grow the industry. Some of the Florida aviation/aerospace companies include BAE Systems, Boeing, Bombardier, Embraer, Harris, Lockheed Martin, Northrop Grumman, Raytheon, and United Technologies.

The Space Florida Act created Space Florida in May 2006 to be the main point of contact for all aerospace-related activities in the state and position Florida as the global leader in aerospace research, investment, exploration and commerce. So far, SF has acquired leasing for several former air force sites to insure the infrastructure is in place to grow the defense, civil and commercial aerospace business in Florida. There is a big push for space commercialization including a vertical launch spaceport at Cape Canaveral (rocket launch) and Jacksonville has applied to the FAA to become a certified horizontal launch site. According to Space Florida, Launch Complex 36 at Cape Canaveral Air Force Station will be rebuilt as a multi-use launch complex to extend access to

space, making it available to defense and security initiatives and multiple commercial payload and launch activities for both civil and private space businesses that wish to launch from Florida. The legislature is anticipated to provide \$14.5 million in 2009 to begin design and construction.

Enterprise Florida, the public-private economic development arm of the state (1996 the state department of economic development was dissolved) targets the aviation/aerospace industry. Though it does not have a specialist in the industry, the international trade development staff member focuses on helping existing companies increase business opportunities overseas. The state participates in domestic and foreign aviation/aerospace trade shows as the industry is one that continues to be a focus for growth opportunities.

The state of Florida has a deficit of \$2.3 billion and the governor proposes to stimulate the economy by advancing schedules for infrastructure development as quickly as possible as there are several hundred million dollars of projects pending construction. The state is experiencing its highest unemployment rate (6.5%) in 13 years with over 600,000 people out of work, especially in the financial and construction industries, which combined are a significant part of the economy.

Jacksonville

Jacksonville MSA (Northeast Florida) includes a number of industry clusters including aviation, financial services, and biomedicine, is a region of nearly 1.3 million and growing (20% over last decade). The region is home to the Naval Air Station at Jacksonville, which employs 35,000 navy and civilian personnel in MRO at the Navy Air Depot, the country's largest. The aviation / aerospace sector employs several thousand doing commercial and military work with several new companies locating to the city recently including Alenia North American that has committed to build a final assembly and delivery center for the C-27J Spartan cargo plane at Cecil Commerce Center. (most of the city's growth has been in financial and logistics sectors) The region has not yet experienced any downsizing in the aviation sector, but the industry is not growing as rapidly as anticipated.

Jacksonville has the largest number of infrastructure projects on the governor's list of projects to be advanced through his economic stimulus package including roads, bridges and rail lines that will provide better access to different parts of the city and surrounding areas, opening up growth opportunities in the region.

One of the city's military bases closed in 1993 and the city developed a redevelopment plan beginning in 1999, which is now known as Cecil Commerce Center, a 17,000-acre site divided into North and South fields that each have access to four runways and utilities. Some of the tenants include Northrop Grumman's aviation engineering depot; Boeing employs 400; Lockheed Martin relocated from Connecticut 2 years ago; General Electric employs 500 building jet engine igniters, and Goodrich Aerospace's polymers division employs 100. Cecil South workers also do MRO work for the military on-site and some engineering companies that also do work for the navy. The Cecil Commerce Center is also home to the Aviation Center of Excellence (formed in 2002) and

the Florida Community College, providing aviation coursework for the industry -- professional pilot, aviation operations and aviation maintenance management.

Jaxport (Port of Jacksonville) is undergoing a huge expansion with both public and private development to make it the largest port on the East Coast in anticipation of the outgrowth from the West Coast and the expansion of the Panama Canal. The channel is being dredged and deepened to 44 feet (50 at nucleus) in order to accommodate post-Panamax size vessels. Two Asian shipping companies (Mitsubishi and Hinjin) have invested \$300 million on new terminals, which are anticipated to increase cargo shipments dramatically, making Jaxport the 3rd largest in the U.S.

Ft. Lauderdale/Broward County

Ft. Lauderdale is part of the Miami-Dade-Palm Beach MSA), the 7th largest MSA in the nation with 5.5 million people. Although Ft. Lauderdale/Broward County has a population of 1.8 million, only half of the land is inhabitable because of the Florida Everglades, which provides a challenge for future development. The people are of prime working age and entrepreneurial in nature so there is a strong IT presence in addition to professional, life sciences and aviation/aerospace.

The industry catalyst is the present day Fort Lauderdale-Hollywood International Airport. During World War II, the Navy purchased the airport and began improving the airfield and constructing military barracks. The field was designed to train pilots of aircraft-carrier based torpedo attack planes. Three years after the war, Broward County acquired it and operated as a general aviation facility until its first passenger airline in 1953.

The top two employers by revenue in Ft. Lauderdale are HEICO Corp, which makes airplane parts and electronic components, and is considered a successful and growing technology-driven aerospace, defense and electronics company. Its products are found on most large commercial, regional and business aircraft, as well as military aircraft. Spirit Airlines, which employs 2,300. Other key industry companies include General Dynamics' C4 Systems and Embreair, making personal aircraft and regional commuter jets, continues to grow in the county. It recently completed a \$17 million expansion to make VLJs or very light jets, which are less expensive to operate and a new market for the company. The company established five service centers in the Ft. Lauderdale area to serve the various size company jets that fly in and out for business.

Baron International Aviation, a worldwide supplier of commercial aircraft spare parts, located in the city of Miramar in its commerce park. The company now occupies 10,118 square feet of space in a sales and distribution center for the inventory of spare parts for commercial aircraft customers including Boeing, Embraer and Bombardier. The Miramar facility is a sales and distribution center for the inventory of spare parts for various commercial aircraft such as Boeing, Embraer and Bombardier. Propulsion Technologies

expanded its production capacity to include engine re-builds, a \$7 million investment. The lead came from a scheduled meeting at the Paris Air Show.

Marketing

EDOs marketing efforts for the aviation/aerospace industry are strategic and focused on specific sub-sectors and companies as competition for expansion projects in the U.S. becomes stronger. They are working with existing companies to identify upstream and downstream companies that could potentially expand into their areas. Most are attending the same association conventions/trade shows including NBAA, SpeedNews, Parish Air Show and others; however, they are not just attending the trade show, they are scheduling meetings in advance of the show and planning to meet with specific companies to make the best use of their time. They are also taking advantage of the learning opportunities about the industry and following up on potential leads immediately.

One interesting initiative by the Tulsa Chamber along with existing industry was the placement of a billboard in California to attract engineering workers. No results were reported. Huntsville has an aggressive workforce recruitment schedule around the country as it anticipates the need for 10,000 additional workers from the Redstone Arsenal expansion.

Workforce Development

Every location we talked to had struggles with attracting and retaining a workforce for the aviation/aerospace companies. Companies have had to develop their own training and attraction programs with incentives including employee bonuses for recruiting. One company in Dallas developed a web site specific to aviation/aerospace recruitment.

Training and Education

Workforce training and educational institutions are in place in each of the competitor communities to prepare and train individuals for work in the aviation/aerospace industry - A & P, engineering, electronics, science and technology manufacturing programs and engineering, business, and management programs at the different education levels. A trend is the development and location of aviation centers of excellence to train and educate in close proximity to aviation/aerospace businesses, mostly on-site in industrial parks, airports, and military bases, helping to strengthen the partnership between business and education.

Most states have dual enrollment programs so that high school students can take courses at the technical college during junior and senior years. Marketing programs by the technical campuses and high schools have increased enrollment but still not to the level needed to sustain and grow the industry.

Workforce Consortiums

The partnership between industry and education, as well as economic developers is critical to the long-term growth of the industry. Workforce consortiums, teams of entities in a community focused on workforce issues, are formed in the competitor communities in this study. Team members include EDOs, technical and community colleges, colleges & universities, industry, workforce investment boards and other organizations at the local and state level that have a stake in the development of local workforce.

Aviation Research

There are also numerous centers of study for the industry located in these communities that are an integral part of the ongoing growth of the industry, and also serve as an important marketing tool. An excellent resource for Wichita is **Kansas State University's National Institute for Aviation Research (NIAR.)** The center conducts R &D, education, testing, certification and technology transfer for the U.S. government and businesses in the area, as well as throughout the U.S. NASA charged the NIAR with developing nationalized standards for composite materials used in aircraft manufacturing. This is sure to draw attention to the area. An untapped resource for southeast Mississippi companies is **Mississippi State University's School of Aeronautics and Flight Research Laboratory (RLFF)**, which is one of the premier and oldest university flight research facilities in the country. The lab assists companies all over the United States with flight vehicle development and test, advanced composites development and fabrication, computer-controlled manufacturing, and test of prototype composite applications. The school recently demonstrated its ability to attract industry. The CEO of Talley Defense, a 50-person destructive weapons manufacturer that recently announced a new facility in Columbus, is a long-time friend of a professor associated with the RLFF.

Military Retirees

A significant source for workers in the industry is military and civilian personnel retired from local bases. Every year, over 3,000 highly-trained mission-oriented personnel exit or retire from military service in Jacksonville's four bases, and 80% of those choose to stay in the area. The Jacksonville Chamber reported that the military workforce has been a stabilizing force over the last several years, especially in electronics, technical maintenance, repair, and management. Dothan, Alabama has Ft. Rucker and five education institutions of learning for the industry including a satellite campus of the infamous Embry-Riddle University School of Aeronautics. Even with all these entities focused on developing and maintaining an effective workforce for the industry, doing so continues to be a struggle for all of these communities. The industry workforce in many of these communities has traditionally been generational - generations of families that continue to work in the industry - but even that is declining in this century. The

enrollment in many institutions is not where it should be, so preparing a technical workforce for new (and existing) is a struggle. However, the resources are in place to assist companies in training any new recruits.

Cyclical Nature of the Aerospace Sector

Dealing with the often cyclical nature of the defense side of the industry can be challenging to keeping workers in a community that experiences a significant layoff. The workforce development person at Greater Wichita Economic Development Commission admitted the area has not been smart about workforce development, including reacting when a company has a layoff and assisting workers with finding other work. Wichita is constructing its first aviation center of excellence at Jabara Airport, and the project funding is threatened by state budget cutbacks. The trend is for communities attempting to train workers in advance of landing business – what can they do to interest high school and college students in the industry, and also keep workers around to have them ready.

Competitor Incentives

Local

Many of the competitor communities have policies and guidelines in place that serve in making sound and quick decisions on incentive packages extended to companies. They typically define criteria for being awarded the incentive (job creation, investment level, wages, SIC or NAICS, and overall economic impact) and application and decision making processes, all bound by a formal agreement between the two parties. As with many other policies, these communities have revised them over the years as experience dictates.

Incentives can make or break a project and most companies expect them upfront to include in the site location analysis. Flexible programs meeting a company's specific needs are important in the design of a local incentive program. Companies are looking for incentives that will significantly impact the bottom line. Cash (grants, TIF or rebates) is most sought after to cover initial project costs; second is workforce training funding; and third is tax-free bond financing. Tax abatements are still important, but credits are useless unless a company has a big revenue stream or credits are sellable.

As with most local incentives, state statutes dictates what a community can provide. Florida statute allows Jacksonville to establish its Tax Increment Grant Program to provide grants for economic development projects from the incremental taxes collected (new project value minus value prior to construction and new capital equipment) The grant comes in the form of quarterly rebates from the community's general revenue fund. Jacksonville and four other counties in the region have a similar fund that also assists in the 20 percent match required by the state's Qualified Target Incentive.

Wichita/Sedgwick County recently revised its incentive policy and guidelines to bring it up-to-date to be more competitive now that it will have defined its target companies. The guidelines were adopted with the intent of complimenting any incentive program that may be adopted by a municipality within the county or the state of Kansas. The incentive varies depending on the project: IRBs paid back with project tax revenues; property tax abatements; sales tax exemptions; forgivable loans (no interest for a period of time) and infrastructure improvements.

Other communities that don't have a set policy have packaged customized incentives recently. Columbus-Lowndes County, Mississippi developed a specific package for EADS/American Eurocopter. The airport built the building to EADS specifications and is leasing the building to the company for 12 years at a low rate. The airport issued bonds for the project, and was able to obtain state loans for infrastructure and roads through two state programs. The city, county and state provided sales/use and property tax abatements on the project for 10 years. However, the state's 3 percent sales/use tax on the aircraft, and the parts and labor used in maintenance and repair cannot be exempt.

Another example of a local community incentive package is what Greensboro, North Carolina provided to Federal Express for the location of its 5th U.S. distribution hub. The \$310 million Federal Express incentive package (for a \$516 million investment) was a combination of airport, city, county and state including the purchase of the land by the airport for \$60 million; airport is also building parallel runways (partially funded by a \$14 million FAA grant); city is moving a portion of a connecting road that goes into downtown (\$50 million cost); and more. The airport offered to issue bonds for Federal Express as it has done for other companies locating to its site (\$3 million Cessna; \$10 million TIMCO). After so many years the airport owns all of the buildings on-site and lease back at a low rate to the companies (payment-in-lieu). Companies don't pay property taxes since the airport is not a local taxing district, but do pay sales tax and personal property taxes.

Aviation Incentives

All of the states offer some type of incentive to business sectors in the aviation/aerospace industry, normally a tax exemption or credit. The non-competitive states in this regard are Mississippi that has a 3 percent sales tax on aircraft, parts and labor in repair, thus not exempting MROs and FBOs such as American Eurocopter that recently located in Columbus. Louisiana aircraft owners and assemblers are not exempt from the state's 4 percent sales/use tax on aircraft with 50 seats or less, and also on parts and labor associated with repair, maintenance and assembly. This applies to some of APOL's target industries such as small and regional aircraft parts manufacturing and assembly, as well as MROs and FBOs. Under Louisiana's Enterprise Zone, the tax credit (income & franchise) doubles to \$5,000 per new job created for aviation/aerospace companies. Florida is generous with tax exemptions for the various types of aviation/aerospace related companies, followed by Alabama, which is more focused on the maintenance and repair side of the business. More detail on the aviation/aerospace incentives offered by each of these states is provided in the Aviation/Aerospace Incentives section of this report in table and text format. North Carolina, Kansas and Oklahoma have recently added some breaks to existing incentives and also some for the aviation/aerospace industry.

Competitor States

The table on page 33 is a quick reference table on the incentives offered by Louisiana and the competitor states based on LED's 2008 Fluor Daniel Incentives Study. The incentive playing field is pretty level when it comes to basic incentive programs - tax credits for job creation and investment, sales/use and property tax abatements, and infrastructure funds (though funding level varies.) However, the differences, which lie in a state's ability to provide financing, will affect a company's bottom line. Infrastructure grants, tax increment financing, tax refunds, local authority tax options, and using employee withholdings or job assessment fees for project costs are some of the state incentives that are appealing to companies because they help offset project costs.

Specific aviation/aerospace incentives at the state and local levels are outlined in each state section, as well as a table with details on all state programs (compiled for the 2004 report and updated based on the 2008 Area Development magazine annual incentives report.)

Some impressive state incentives include South Carolina's Enterprise Program, which allows companies to place employee personal income tax withholdings in a fund (held at the state) and receive quarterly rebates for costs associated with a project including employee retraining, infrastructure, equipment, construction and transportation access. Tax Increment Financing, Fee-in-Lieu of Property Tax, and Reduced Tax Assessments are also useful tools in South Carolina communities because the property taxes are often 200 mills or above. The state's Set-Aside is an \$18 million infrastructure grant program funded by a 3 percent motor fuel tax implemented in 1987.

In 2003, Vought Aircraft expanded its Ft. Worth, Texas facility and added 3,000 new employees at its headquarters that designed the presidential demo built for Sikorsky. With this expansion, the company received state incentives totaling \$10,000 per job (\$30 million) from the newly created Texas Enterprise Fund, a \$295 million fund established in 2003 by the Texas legislature. The fund is also significant because Texas has historically placed the burden of growth on its communities.

Though not applicable to the aviation/aerospace industry, the Kansas legislature passed the Kansas Growth Act providing \$520 in incentives over the next 15 to 20 years to finance projects in certain target industries, rural areas, and entrepreneurship. The employee withholdings of 160 bioscience companies will be placed into a dedicated fund to investment back in the industry in numerous ways. Also, 50 percent of the tax credits for investment in entrepreneurship related companies and entities will be used to fund specific rural and entrepreneurial projects.

The city of Greensboro, Guilford County, Piedmont Triad International Airport and the state of North Carolina provided a \$310 million incentive package for the Federal Express distribution hub, which is nearly completed. The package included the purchase of the land by the airport for \$60 million; airport is also building parallel runways (partially funded by a \$14 million FAA grant); city is moving a portion of a connecting road that goes into downtown (\$50 million cost); and more.

Resources/Assets

All the resources and assets that are attractive to the aviation/aerospace industry in the competitor areas are listed in the state section of this report. The communities have most of what the industry is seeking, including Louisiana, but to varying degrees - infrastructure (developed industrial and air parks and buildings), good transportation access, workforce, military presence, education and training institutions offering degrees and certifications specific to the industry, and research institutions focused on the industry.

Aviation/Aerospace Complexes

Excellent examples of well-funded and developed former military bases are found among the competitor communities. Cecil Commerce Center in Jacksonville is a city-owned 17,000 acre commercial-industrial-recreational development with several long runways, a mega site, numerous 300-acre sites, and two aviation training centers. Brookley Complex in Mobile is a 1,700-acre commercial and industrial park located in downtown Mobile adjacent to the port, airport and interstate, offering intermodal transportation system. The EADS-Northrop Grumman refueling tanker assembly was slated to locate at Brookley as announced in 2008, which could happen in 2009.

Piedmont Triad International Airport has 3,000 acres it is gradually developing for aviation/aerospace companies and for expansion of the airport. The airport has an aggressive board that understands the value of investing in this important asset.

Transportation Access

All the communities have at least two interstate highways in close proximity with the exception of Columbus, MS that has two 4-lane highways that meet interstate standards. Most also have deepwater access. Airport assets vary. One fine example of airport development specifically for the aviation/aerospace industry (other than air service) includes the Piedmont Triad International Airport focused on growing into an economic engine for the area. It has 10,000 and 6,380 foot runways and has optioned 3,000 acres that will gradually be developed as needed by businesses they find will provide a significant impact to the airport, city of Greensboro and Guilford County.

Aviation/Aerospace Associations

Most of the competitor states have state aerospace commissions dedicated to lobbying state and federal resources for defense projects and issues affecting the industry. Space Florida was formed a few years ago to focus on the future growth of Florida's space industry and has made strides towards commercializing some sites including the launch site at Cape Canaveral. The Southeastern Alabama Triangle Advantage, a 22-county regional group, is formed to target the aviation/aerospace industry and has

developed a marketing campaign in conjunction with the state development office and the Economic Development Partnership of Alabama.

How Does Louisiana Compare?

Louisiana and the APOL communities have something to offer the aviation/aerospace industry, though it has a long way to go in growing the industry for the long-term. Recommendations are provided later in this report.

Louisiana Strengths

- New Governor with an economic development focus, willing to speak with industry and offering aggressive incentive packages and initiatives such as the accelerated phase-out of the Sales Tax Exemption on Machinery & Equipment, elimination of 1% utilities tax and the Rapid Response Fund and Louisiana FastStart training program that can assist this industry;
- New secretary of economic development that is a bright, professional economic developer, bringing knowledge of best practices that can be implemented to help move the state forward;
- Relatively active 2008 with several RFPs, investment by LED in aviation company expansions, and Barksdale AFB's consideration as the site for the U.S. Air Force Cyber Command Center
- Baton Rouge, Lafayette, Lake Charles, and Shreveport have received national recognition for their growth;
- Some developed (or with master plans in place) infrastructure & assets in the state to serve the industry including Chennault, England Airpark, Baton Rouge Metro Airport, Lafayette Regional Airport
- Aviation Partnership of Louisiana, a partnership focused on development of the aviation/aerospace industry that has the support of local authorities and the state;
- Good transportation access in the state including interstates, ports and metro airports (though not nearly as good as most competitor areas);
- Numerous colleges/universities and technical campuses with aviation/aerospace related programs to develop a workforce including the Embry Riddle Aeronautics School at Barksdale Air Force Base;
- Local authorities can offer relatively flexible incentive and financing programs, though not nearly as generous as most competing states;
- Former and active military bases.

Louisiana's Weaknesses

- Louisiana is still not on the map as an attractive and easy state in which to do business, though recently noticed for moves made by the governor including the use of the Rapid Response fund for two headquarter company relocations to the state;
- State sales tax on aircraft with less than 50 seats affecting the MRO and other targets for the APOL members;
- Small state marketing budget, and no dedicated marketing budget for APOL;
- Louisiana's technical and community college system is not structured to meet industry needs for skilled workforce (though a plan is being developed to change that);

- Congressional delegation is not working to bring aviation/aerospace business to the state, though Senator David Vitter is heavily involved in the future of the NASA Michoud facility in New Orleans East;
- Small presence in the aviation/aerospace industry to assist in attracting more;
- Industrial/business parks not nearly as fully-developed, attractive and as well-funded as competitor communities;
- Local entities lack documented incentive policies and guidelines in place to make standardized and quick decisions; no flexible cash fund for economic development projects;
- Local entities are not making the level of investment needed in infrastructure (sites, spec buildings, roads);
- Weather: threats of hurricanes and tropical storms (nearly 365 days of sunshine was a consideration for Bell in Amarillo).

What Competitors are Doing

There is great value in identifying what competitor states and communities are doing to grow their economies. The following are highlights of some ‘best practices’ found in the competitor communities that can serve as models for what Louisiana and its communities can do. The details of these practices can be found in the state section of this report.

- Mississippi’s 12-week industry specific training program in high demand industries including an FAA-certified A & P course using a \$20 million fund, which uses the unemployment insurance premiums;
- Dedicating funds at the local level for economic development projects, through bond financing, grants or TIF;
- Attracting private investors to develop infrastructure and assets to serve the industry (Port of Mobile; Charleston area logistics centers);
- Local economic development funding mechanisms allowed by states for economic development projects (such as Amarillo’s 1/2 cent sales tax revenue of \$10 million annually used for marketing, industrial/business park development, company-specific infrastructure projects);
- Incentive policies and guidelines in place at the local level to make sound and quick decisions;
- Strong investments in local assets such as the Piedmont Triad International Airport into an industrial/commercial park that is an economic engine for the Greensboro, NC region, especially for the aviation/aerospace industry;
- Marketing in other parts of the U.S. to recruit the talent necessary to meet industry demand including Tulsa’s billboard in CA and Huntsville’s dozen or more recruiting missions (though the Baton Rouge Chamber recently held a national workforce recruiting trip);
- Large state infrastructure funds, such as South Carolina’s \$18 million Set-Aside Fund funded by a 3 percent motor fuel gasoline tax;
- Economic development strategic plans in place or currently being developed with identified targets and marketing plans;

- Using ‘industry intelligence’ to identify the industries and companies most likely to be attracted to their areas including aviation/aerospace convention attendee lists and setting up appointments in advance of the meeting;
- Strong and large Washington congressional delegation – Texas has the largest; FL, AL and MS also;
- Working military bases, such as those in Jacksonville that provide workforce and infrastructure for the industry;
- No inventory tax; stronger sales/use and property tax exemption program for specific sectors of the industry, i.e., Florida, Oklahoma, Kansas and Alabama.

Recommendations

APOL members will have to develop an aggressive plan to target the aviation/aerospace industry as stiff competition abounds. Well-established aviation areas such as Oklahoma City, Tulsa, Wichita and Dallas continue to grow through existing industry expansion, though they are experiencing worker shortages and strikes that have setback production and left companies frustrated. Aggressive, newer growth areas such as the Greensboro, NC region have made strides in recent years through logical planning and investment in infrastructure. The APOL plan should address key aviation location issues such as infrastructure availability and investment, labor force availability and training programs, taxes, incentives (state and local) and other issues of importance to the aviation/aerospace industry to make it more attractive to businesses, and develop a marketing plan to reach growth companies. APOL members will need to develop plans with new programs and policies that allow for sound and quick decisions. It will need to think more creatively in financing economic development projects, think smarter to target businesses with the greatest potential, and work as a team to make it happen.

APOL

APOL should create a more formal structure in which to operate even though it is a group of volunteers from the aviation regions and the state. As a part of that structure, develop a strategic plan with vision, mission, goals & objectives, marketing, and an action plan to develop the industry, as well as a means for measuring results.

- a. Set an annual budget to carry out the plan. Suggest that all stakeholders contribute on as equal levels as possible.
- b. A strong marketing plan:
 - i. Industry research and intelligence to identify target companies and trade shows in which to participate:
 1. Work with existing industry to identify suppliers
 2. Identify and track growth companies
 3. Establish a means of tracking industry news
 4. Develop databases of target companies
 - ii. Obtain convention attendee lists and follow with a letter & and follow-up calls to set-up appointments during the trade shows

- iii. Web site – enhance the existing web site with maps of LA geography, available sites (airports, airparks), military installations, etc. Add valuable data such as taxes, educational institutions with related programs (graduation #s), etc. that can assist a site consultant or company with a site search
 - iv. Marketing materials - fact sheet on the industry and each of the sites available for location
 - v. Trade show booth – display Louisiana’s assets and resources for the industry
 - vi. Tout APOL’s efforts locally - convey the potential for this industry in their areas and gain their support for future projects
- c. Form committees to focus on issues of importance to developing the industry: workforce, marketing, taxes and incentives, infrastructure development; and work closely with state agencies and local officials.
 - d. Work with Louisiana’s congressional delegation to convey the potential in LA for this industry and ask them to assist in pursuing military contracts, FAA grants, and other assistance that will have a significant impact in attracting the industry.
 - e. Work with the military bases and other installations to obtain contacts within the industry.
 - f. Work with LED, local EDOs, parishes, and legislators on an analysis of Louisiana’s tax structure against competitor states.
 - g. Utilize LED’s 2008 Incentives Study by Fluor Daniels and specific aviation/aerospace incentives outlined in this report to pursue options in state.

Marketing

There is strength in marketing regionally to any industry so continue this focus. Also continue to position APOL and its consortium of communities as an attractive location for this industry because of the resources/assets available. However, take advantage of the national coverage Baton Rouge, Lafayette, Lake Charles and Shreveport have received (rankings by various publications and entities as small metro growth areas, business environment, etc.). Utilize what is occurring at Barksdale AFB and Ft. Polk for its training capabilities and recent announcement by Northrop Grumman. Think and market smarter. Industry intelligence will fine-tune targets and keep up-to-date on industry trends and growth companies. Subscribe to a service that can track industry trends and companies; and also what competitors are doing. Participate in trade shows and conferences specific to the types of businesses interested in targeting and set-up meetings with companies in advance of the shows. Invest in a web site that will be APOL’s main marketing resource with data/information on the industry in Louisiana. Remember that marketing internally is also important to the development of the industry. Use local media to advertise what APOL is doing to attract the business – articles in local newspapers and business journals; get a spot on a local news program or radio show. Meet with local elected officials about the potential for their

communities so they are prepared for a prospect. This will help to gain further support for APOL's efforts and attract other potential resources.

Workforce Development

Workforce development is the number one issue in economic development. Without a prepared and skilled workforce in the aviation/aerospace industry the Louisiana will have a difficult time attracting additional business.

1. Work closely with local industry to identify their workforce needs and issues.
2. Develop a fast tract FAA-certified machinist and A & P training course such as Mississippi to meet industry demand.
3. Form a workforce consortium of industry, training and education institutions, economic developers, and state/local officials to focus on workforce issues affecting the industry.
4. Develop a contingency plan for laid-off workers in the industry, either retraining them or finding related jobs; identify companies that employ workers with related skills.
5. Develop a plan to retain retirees from the military to work in the private sector.
6. Develop a program such as the Louisiana Chemical Association's PTEC, designed to get students at the high school level interested in working in the industry; market the benefits of working in the industry.
7. Work with the state technical and community college system to expand capabilities and funding for area campuses.

Incentives

A local authority should be an active participant in an incentive package, not just the state. The local level incentive package can have a big influence on a location decision. It indicates a short and long-term commitment to the project. APOL communities must be prepared to provide incentives at the level of the competitor communities as outlined in this report.

1. Develop a funding mechanism to invest in infrastructure and provide grants to companies for investment in APOL community assets. Learn from others that already have one in place:
 - a. Lafayette's millage dedicated to development of its harbor and port district
 - b. Florida communities that have established infrastructure funds from the incremental property or sales taxes from economic development projects

- c. Greater Wichita EDC returned \$2.39 in public benefits for every dollar of local public money used for their incentive fund
- d. Use the employee withholding taxes from industry such as in South Carolina and Kansas

Though all of these would most likely require legislative and local authority approval, be well-prepared to state the case and market the plan and its benefits in advance.

- 2. Develop incentive policies and guidelines to allow for sound and quick decisions but also insure a positive ROI.
- 3. Be creative in your approach to incentives provided; provide funding that will impact a company's bottom line.
- 4. Utilize LED's 2008 Incentives Study by Fluor Daniels and specific aviation/aerospace incentives outlined in this report to pursue options in state.