2004 Report of the Governor's Aerospace Task Force

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Acknowledgement:

This report re”ects the hard work and dedication of a task force comprised of leaders from the aerospace industry, educatio
government. We wish to acknowledge and thank all members for their contributions and recommendations that will improv
Oklahoma aerospace industry and help establish Oklahoma as a leader for the future. We especially wish to thank Lieuten
ernor Mary Fallin for her dedicated leadership of the task force. We also wish to thank the members of the EDGE Aerospa
for valuable inputs to this process.

Governor Brad Henry

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Executive Summary

Governor Henry recognized the importance of the aerospace industry as an economic growth engine for the state. He also recognized the difficult challenges for Oklahoma companies competing in this global industry. In light of these facts, the Governor formed a task force to recommend actions that would improve the ability of Oklahoma companies to compete in the changing global business environment. The Chairperson for the task force was Lieutenant Governor Mary Fallin. The Oklahoma Department of Commerce, The Oklahoma Aeronautics Commission, The Oklahoma Department of Career and Technology Education and The Oklahoma State Regents for Higher Education participated and provided support.

The Governor set the following specific goals:

1. Make recommendations for specific actions that will improve the competitive advantages for Oklahoma companies and foster industry growth in the state;
2. Recommend an organization and structure that can continue to support the industry by providing technology infusion, strategic planning, advocacy and value added resources for the industry;
3. Plan and begin a statewide aerospace assets inventory and recommend an organization to continue that effort to completion; and
4. Host a statewide summit in 2004 and plan a national Aerospace event in Oklahoma by 2005.

The Lieutenant Governor formed four working groups that gathered information, identified issues and formulated recommendations. Strength, Weaknesses, Threats and Opportunities (SWOT) exercises were conducted across the state to ensure there was a statewide assessment of the industry and its business environment. The EDGE Aerospace Team results were also considered as a part of the initial analysis.

The Task Force recommends the following 12 actions:

Recommendation 1.

Create a cooperative council that would leverage the collective strength of small and medium size aerospace businesses. This council would also focus on creating marketing strategies and increasing the awareness of smaller organizations' capabilities. This could be implemented as a stand-alone function but would be more efficiently developed as a part of a larger statewide association.

Recommendation 2.

Enhance the services of the Oklahoma Bid Assistance Centers (OBAN) with more intensive assistance, business intelligence and training efforts focused on the aerospace sector. Form a "five-person strike force dedicated solely to aerospace operating from both Tulsa and Oklahoma City, but covering customers statewide. Consider moving responsibility for the bid assistance function to The Oklahoma Department of Commerce or The Aeronautics Commission, as its mission is more closely aligned with the promotion of the aerospace industry.

Recommendation 3.

Establish an Oklahoma business promotion office focused on the aerospace contracts available at Tinker Air Logistics Center and the FAA Mike Monroney Aeronautical Center at Will Rogers Airport and other Federal installations around the state. The office would work with the OBAN Strike Force and Federal offices to assist companies.

Recommendation 4.

Create a source, or financing vehicle that provides more access to funding in order to enable smaller companies to compete for contracts that require capital investment in technology,

processes or equipment. The financing would be available based on contract award.

Recommendation 5.

Audit the Canadian Commercial Corporation as a model for best practices and create a similar organization with the appropriate capabilities in Oklahoma.

Recommendation 6.

Seek more aggressive Tort and Workers• Compensation Reform.

Recommendation 7.

Repeal the state sales tax associated with parts used in the maintenance, repair and overhaul of aircraft in Oklahoma.

Recommendation 8.

Reduce product liability insurance cost for Oklahoma companies by researching insurance options to “nd the best rate. Explore group rates under an association of aerospace companies similar to group self-insurance scenarios with Workers• Compensation insurance.

Recommendation 9.

Establish a single-point of contact for the aerospace industry to access the statewide higher education and research assets and promote continued growth of the Oklahoma cluster (industry … government … education). The Ohio model audited by the task force provides some benchmarks and best practices to enhance Oklahoma•s Center for Aircraft Systems/ Support Infrastructure (CASI) program. The state should provide seed funding to CASI of approximately $1,925,000 per year to fund staff, expenses, and on-call professional expertise and research.

Recommendation 10.

Establish a statewide aerospace trade association, the Oklahoma Aerospace Association, to be comprised of companies, institutions, organizations, governmental agencies, and others who have a stake or interest in the welfare and growth of the aerospace industry. The state should provide seed funding to the Association of approximately $500,000 per year to fund staff and expenses. The Association should be a non-pro“ t entity established under section 501 (c) (6) of the Internal Revenue Code.

Recommendation 11.

Develop an aerospace asset inventory along the lines of The Georgia Aerospace Industry Pro“le. The newly established Oklahoma Aerospace Association should maintain and update the inventory. Initial funding for the document should be provided by the Aeronautics Commission in conjunction with their planned update of the Aerospace Economic Impact study.

Recommendation 12.

An Oklahoma Aerospace Summit should be held in 2004 and on an annual basis thereafter. The “ rst summit should be organized, staffed and supported by the Lieutenant Governor•s Of“ ce, the Department of Commerce, and the Oklahoma Aeronautics Commission. Thereafter, the annual summit should be presented by the Oklahoma Aerospace Association with support from the above-named state agencies and other appropriate entities and organizations. The “rst summit should create a forum to discuss the report of this task force; aerospace career paths; and the future of aerospace in Oklahoma. A networking and social event should be held the previous evening.

The Aeronautics Commission, The Department of Commerce, CASI, The Department of Career and Technology Education and other agencies should combine efforts to grow the existing Tinker Air Force Base Aerospace Technology Conference into a national event. In addition, the proposed Oklahoma Aerospace Summit, the existing Technology Conference, and the existing Oklahoma Aeronautics Commission-Oklahoma Airport Operators Association Annual Aviation Conference, should be coordinated to create an Aerospace Week in Oklahoma.

The Importance of the Aerospace Industry

The aerospace industry is one of the critical economic engines for the Oklahoma economy and has been for many years. During the transition planning for Governor Henry•s new administration, team members recognized the present impact of aerospace and the industry•s crucial role for the future of the state•s economy.

A 1999 report prepared for the Aeronautics Commission by The University of Oklahoma concluded that the aerospace industry directly and indirectly employs over 143,000 Oklahomans, and accounts for $4.7 Billion in payroll, $11.7 Billion in industrial output, $77 Million in state income tax and $60.6 Million in state sales tax.

The industry is concentrated in Tulsa and Oklahoma City, but signi“cant intellectual and capital investment, industry suppliers, and a skilled workforce exist across the state.

The Oklahoma aerospace industry is composed of several segments:

1. Commercial„the parts and service suppliers that support airline and aircraft manufacturing.
2. Military„the suppliers, training, maintenance and engineering support for military systems and bases.
3. Space„the effort to build a commercial space industry in Oklahoma.
4. General„the support for the private aviation, airports ”ight operations, and the manufacturing of aircraft.
5. Business„the suppliers to business aircraft manufacturers, maintenance and the operation of those aircraft.

Within these segments Oklahoma has one of the most signi“cant concentrations of Maintenance Repair and Overhaul (MRO) of aircraft and engine capabilities in the nation, and in the world. It is this capability that must be exploited to grow a world-renowned center for MRO.

A small number of companies, such as Boeing, American Airlines, Honeywell-Lori and Nordam currently “ll the role of economic engines. However, most Oklahoma companies are small and medium size suppliers and repair stations.

Military installations and the FAA Mike Monroney Aeronautical Center provide both local and statewide impact. The Oklahoma Air Logistics Center (Tinker) is the largest military repair and overhaul depot in the nation, and the largest aerospace employer in the State. In ‘scal year 2003, in which information is available, Tinker awarded contracts valued at $5 Billion, but Oklahoma companies were only awarded $232 Million. Tinker could be a more signi“cant economic engine. Although the maintenance, repair and overhaul of aircraft and aircraft engines is the heart of our aerospace industry, Oklahoma companies have been unable to take full advantage of what is clearly an immense opportunity at Tinker.

Some Oklahoma companies have advanced into the higher value research and development, engineering and design. Most are in the middle or lower end of aerospace technology. These companies are at risk; vulnerable to acquisition or being replaced by offshore companies unless new technology and processes, and new customers can be acquired.

The aerospace industry is known for volatility, but the situation today for aerospace manufacturers, service providers, and airlines in particular, is at a turning point. This critical turning point is affected by the following variables:

€ The affects of global competition
€ The attack on 9-11

€ New and emerging technologies
€ Severe Acute Respiratory Syndrome (SARS)
€ The loss of the Challenger
€ The recent recession
€ The war on, and threat of terrorism
€ Volatile fuel prices
€ Availability of quali“ed and skilled workers
€ Outsourcing of engineering overseas

However, the industry is adapting and changing. This creates both a potential crisis and an opportunity. Oklahoma must be positioned at the leading edge as the industry changes. Oklahoma aerospace companies and support structure must evolve to create the best possible competitive advantages as they face a changing global market.

The Governor's Goals for the Task Force

In June 2003 Governor Henry tasked the Secretary of Commerce and Tourism, Kathryn Taylor, and the Director of the Aeronautics Commission, Victor Bird, to assemble a task force to address the present problems and future support for the aerospace industry.

The Governor emphasized that Oklahoma has a robust aerospace industry cluster. Industry clusters are either growing or dying. Business, education and government support successful clusters. Support in Oklahoma must be ef‚cient and effective. Unlike other concentrated industries, there is no statewide association to develop an Oklahoma strategy for the aerospace industry. All is not bleak but action is needed. The situation should take on the urgency of a crisis and should be viewed as an opportunity.

Leaders and representatives from the aerospace industry, higher education, career and technology education and government entities formed the Task Force.

Governor Henry convened the task force on August 12, 2003 and outlined the work and the challenges for the group. The overall purpose was to recommend actions and develop models that will improve the competitive advantage of Oklahoma aerospace companies today and in the future.

The Governor established four goals for the task force:

1. Make recommendations for speci“c actions that will improve the competitive advantages for Oklahoma companies and foster the growth of the industry in the state;

2. Recommend an organization and structure that can continue the work of supporting the industry by providing technology infusion, strategic planning, advocacy and value-added resources for the industry;

3. Plan and begin a statewide aerospace assets inventory and recommend an organization to continue that effort to completion, and

4. Host a statewide summit in 2004 and plan a national Aerospace event in Oklahoma by 2005.

Lieutenant Governor Mary Fallin was asked to chair the task force. The Lieutenant Governor is also chairperson of the Aerospace States Association and has been an advocate for aerospace development and education throughout the state.

The Oklahoma Department of Commerce and the Aeronautics Commission were tasked to provide staff support.

Report

Process

The Chairperson, Lieutenant Governor Fallin, organized the task force into four working groups to address the following general issue areas:

1. Recommendations to improve the business environment and add to the competitive advantages for Oklahoma companies. This working group was heavily weighted with business leaders, higher education, career and technology education, state government and the Tinker Small Business Office were also represented.

2. Recommendations to establish an organization and structure that would continue to support the industry. Aerospace companies, government, higher education and career and technology education were represented on this working group

3. Recommendations for the content, and establishing the process for building and maintaining a statewide inventory for aerospace industry

4. Recommendations for goals, timing, planning, content of an Oklahoma summit and a future national aerospace event

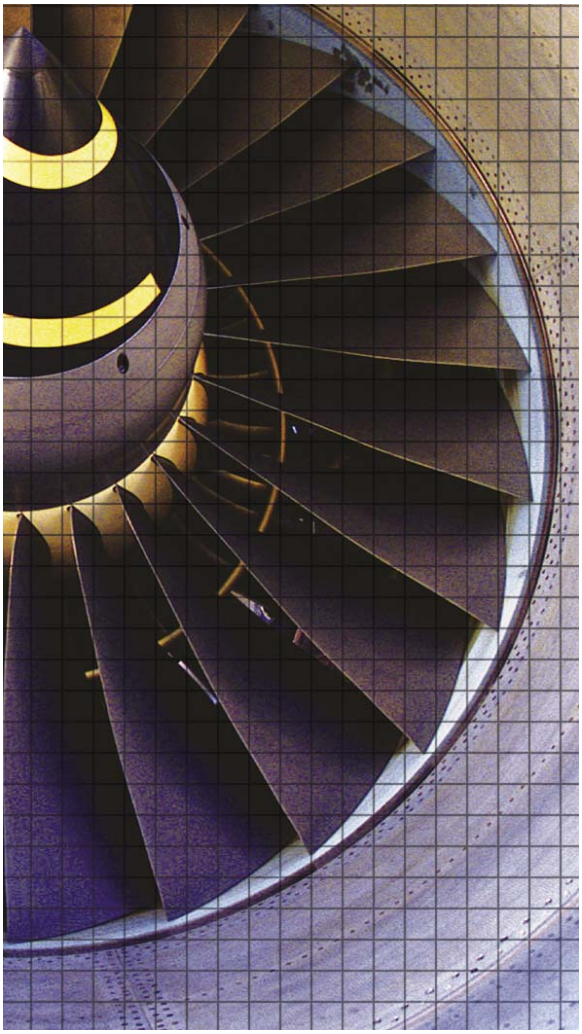
Each working group gathered information and conducted meetings to discuss and form recommendations.

Information was shared via a task force web site accessible only to task force members.

Following each working group•s report, all recommendations were shared with all task force members.

The Chairperson attended selected meetings and received status updates on task force progress.

An experienced consultant from Career Tech facilitated some working groups.



Recommendations

The recommendations of this task force are divided into 6 areas:

1. Aerospace business assistance and market opportunities;
2. Public Policy Changes to Create Competitive Advantage;
3. Leveraging and infusing technology;
4. Organization for support, focus advocacy, and strategic planning;
5. Developing a Statewide Asset Inventory, and
6. Future Aerospace Events to increase public awareness of the importance of the aerospace industry, support for the industry and growth of the industry.

1. Aerospace Business Assistance And Market Opportunities

Issue: Small and medium size businesses collaboration and cooperation for success

Small and medium size businesses are most in need of assistance. Most of the aerospace jobs in the state are the result of the small and medium size businesses. The trends within the industry are for consolidation and the pressuring of smaller suppliers and repair stations for lower prices. By collaborating and leveraging their corporate marketing strength, these smaller companies could compete for more work. In addition, the smaller companies could more effectively impact policy by speaking as an organized group, uniting as one front.

Recommendation 1.

Create a cooperative council that would leverage the collective strength of small and medium size aerospace businesses. This council would also focus on creating marketing strategies and increasing the awareness of smaller organizations• capabilities. This could be implemented as a stand-alone function but would be more ef“ciently developed as a part of a larger statewide association.

Issue: Focused assistance to take advantage of opportunities for Government Contracts

One of the highest potential sources for business expansion is through winning government contracts at the Tinker Oklahoma City Air Logistics Center, The FAA Mike Monroney Aeronautical Center and other federal installations. Presently, the Oklahoma Bid Assistance Network (OBAN) provides help with the technical aspects and strategies to apply for, and win these contracts. OBAN has been successful in the broad area of government contracts. The resource is not well known and does not address assistance on the end-to-end process, nor does it provide an aerospace focus. OBAN must “ an expanded role as a critical element of the total solution. If a signi“ cant portion of this capability could be more “ nely focused on the aerospace industry, many more companies would be able to successfully compete for lucrative and high technology government contracts.

Recommendation 2.

Enhance the services of the Oklahoma Bid Assistance Centers (OBAN) with more intensive assistance, business intelligence and training efforts focused on the aerospace sector. Form a “ve-person Strike Force dedicated solely to aerospace operating from Tulsa and Oklahoma City, but serving companies statewide. The Strike Force should be located in the Business Development Division of the Commerce Department as its mission is more closely aligned with business development or the Aeronautics Commission as its mission is more closely aligned with the promotion of the aerospace industry

The possibility of competing for and winning more contracts at Tinker is a high priority for state companies. Of the $5 Billion in contracts let in federal FY 03, only a small percentage ($2 Million) was

awarded to state companies. Oklahoma needs a more aggressive program to market capabilities and pressure government procurement to award to Oklahoma companies, and prime contractors (e.g. Boeing, Lockheed Martin, Northrop Grumman, etc.) to subcontract within the State rather than out of the State. In many cases Oklahoma companies can compete on cost, quality and qualifications if there was more information on a pending contract, and if the government and the primes were more aware of the capabilities of Oklahoma companies. A business promotion office with well-qualified personnel and sufficient resources, focused on promoting and assisting Oklahoma companies, would enhance the ability of Oklahoma companies to compete for this business.

This would require funding either through reprioritizing existing programs or allocating funds in the 2004 legislative session to create the office in the Commerce Department or The Aeronautics Commission.

Recommendation 3.

> Establish an Oklahoma business promotion office focused on the aerospace contracts available at Tinker Air Logistics Center and the FAA Mike Monroney Aeronautical Center and other Oklahoma Department of Defense installations in Oklahoma.

Competing for government contracts requires companies to make a substantial investment of resources to qualify, compete and win. Moreover, once awarded the contract, substantial up-front capital is usually required to establish inventory, new processes, appropriate certifications, or new and advanced technologies. Although companies may have the capability and know-how to perform, they may not have the capital or borrowing power to make the initial investment. By providing a source of this capital, more Oklahoma companies could compete and win government contracts.

Create a low cost business loan or short-term capital capability that can be guaranteed once a company has won a government contract. Establish a process for qualifying and acquiring capabilities to compete. This function could be established with The Oklahoma Center for the Advancement of Science and Technology (OCAST) in their on-going function and capability.

Recommendation 4.

> Create a source or financing vehicle that provides more access to funding in order to enable smaller companies to compete for contracts.

The Tinker Air Logistic Center Contracting Office suggests that the Canadian model of providing a central sourcing point for goods and services throughout Northeast Canada, The Canadian Commercial Corporation, has been very successful. Canada has grown its aerospace exports to $20 Billion in 2003. Northeast Canada is the location of the majority of their aerospace suppliers and, it is growing rapidly. The Canadian government is helping by providing a one-stop shop for aerospace procurement. This lessens both the effort and the risk of government procurement organizations. The Canadians have created an agent-type organization that both markets Canadian companies and assists outside customers with contracts and product sourcing. A task force working group did an extensive audit of the website and concluded that this is an excellent best-practice model. Oklahoma could benchmark the Canadian model for value-added components and practices and then develop another set of recommendations to create those capabilities in appropriate government, semi-government or private organizations in Oklahoma.

Recommendation 5.

> Audit the Canadian Commercial Corporation for best practices and create a similar organization, or appropriate capabilities in Oklahoma.

2. Public Policy Changes to Create Competitive Advantage

Issue: State policies that put Oklahoma companies at a competitive disadvantage

Litigation and excess damage awards impact all businesses. Enactment of aggressive tort reform would provide a signi“cant competitive advantage for all businesses. The same can be said for workers compensation insurance rates. Oklahoma businesses are at a competitive disadvantage to businesses in other states and in other countries with respect to these costs.

Recommendation 6.

Seek more aggressive Tort and Workers• Compensation reforms.

Surrounding states (Texas, Kansas, Arkansas and others) do not charge sales tax on parts used in the Maintenance, Repair and Overhaul (MRO) business, but, Oklahoma does and it puts Oklahoma companies at a competitive disadvantage. The disparity has been addressed for some of the larger companies such as American Airlines and those overhauling aircraft above 9,000 lbs. Oklahoma grants an exemption from sales tax for these companies. Unfortunately, smaller companies are losing business and the state is losing jobs as aircraft owners take their business to other states. We need to level the playing “eld. The Oklahoma Tax Commission does not recognize MRO under the same category as the North American Classi“cation System. If recognized as manufacturers, parts used in the MRO process would be exempt from sales tax. Or, grant a blanket sales tax exemption for MRO without regard to aircraft weight.

Recommendation 7.

Repeal the state sales tax associated with parts used in the maintenance, repair and overhaul of aircraft in Oklahoma.

Issue: Product liability insurance is an accelerating cost driver for aerospace companies

Product liability is a cost driver for aircraft parts manufacturing and aircraft services providers. If Oklahoma companies could access lower product liability insurance cost it would provide a competitive advantage. It may be possible to get a group rate. Research product liability insurance companies and look into advocating group rates.

Utilizing trade associations to gain a reduced insurance plan happens often in many industries particularly with workers• compensation insurance Oklahoma should consider the possibility of creating an Oklahoma group insurance policy just as medical and restaurant industries have established. This was suggested in the past by the Aerospace Alliance of Tulsa and could be done under the umbrella of a business/trade organization if one were to be established as a legal entity. (The Tulsa Alliance does not have that status). This could be part of the value added state aerospace association being recommended by this task force.

Recommendation 8.

Reduce product liability insurance cost for Oklahoma companies by researching insurance options to “nd the best rate such as obtaining this insurance through a trade association.

3. Leveraging And Infusing Technology

Issue: Leveraging higher education expertise, technology and creating collaborative partnerships

Oklahoma companies need access to new and emerging technology. Businesses should be able to leverage existing Oklahoma technology, research and development with consulting advice that already exists in our universities. Oklahoma businesses need an unbiased organization that can build collaborative partnerships among companies to compete for lucrative and sometimes extremely complex projects. Ohio has developed a successful model. Honeywell LORI in Tulsa suggested the model. Team members visited the organization and agreed that it provides a competitive advantage.

Higher education supported the proposals for the 7E7 workload through two multi-campus research coalitions with expertise in aviation and transportation/logistics: CASI and the Oklahoma Transportation Center. Through investments of the Oklahoma State Regents for Higher Education (OSRHE) and U. S. Department of Defense, CASI has grown over the past four years to become the higher-education partner in Oklahoma•s aerospace cluster. However, the CASI focus has been primarily on maintenance, repair and overhaul (MRO) for the military aviation sector. Oklahoma needs to leverage the investment in CASI to further secure its future in military aviation and to grow its service to the private sector aerospace industry.

The EDGE Aerospace Panel has called for a statewide coordinated focus on the aerospace industry as one of the State•s largest employers and concentrations of technological assets, both now and in terms of growth potential. The Panel recommended that the CASI partner with the Aeronautics Commission, forming the statewide focal point for higher education to partner with industry, government, and CareerTech to:

€ Advise aerospace companies on new manufacturing techniques, processes, and technologies and to assist in implementation;

€ Coordinate and focus university research and expertise to solve problems or recommend strategies which will make Oklahoma•s aerospace industry more competitive; and

€ Advocate and communicate with state training and education agencies concerning curriculum, facilities, and equipment acquisition that support current and future aerospace employment

Oklahoma should adapt the appropriate elements of the Ohio Model and develop a similar capability around the existing CASI structure. This will require legislative action in terms of funding for CASI.

	Annual Amount
State Support	
OK Higher education coordination	$125,000
OK Aerospace industry outreach	$175,000
Economic Development support	$125,000
Research	$1,500,000
Subtotal	$1,925,000
Research and technical support on fee-for-service basis	
Federal (Air Force and FAA)	$1,750,000
Private industry	$1,500,000
Subtotal	$3,250,000
TOTAL	$5,175,000

Recommendation 9.

Establish a single-point of contact for the aerospace industry to access the statewide higher education and research assets and promote continued growth of the Oklahoma cluster (industry … government … education). The Ohio model audited by the task force provides some benchmarks and best practices to enhance Oklahoma•s CASI program, which should be this single point of contact. The State should provide seed funding of approximately $125,000 per year to CASI to fund staff, expenses, and a on-call professional expertise and research.

4. Organization For Support, Focus And Strategic Planning

Issue: The value and need for a statewide association to continually advocate issues that improve the competitive advantages of Oklahoma Aerospace companies and that provide a organization to support the aerospace industry.

Oklahoma companies need an organization whose sole purpose would be to advocate for the aerospace industry as a whole. The solidarity and exchange of ideas proved that there is in fact a need and desire to form a statewide organization. The Aerospace Alliance of Tulsa has discovered value-added benefits to coordinated efforts and sharing knowledge across metropolitan Tulsa and northeastern Oklahoma. The Task Force and the Tulsa Aerospace Alliance Executive Committee support a statewide organization that would:

1. Create a positive environment and united voice for the aerospace industry;

2. Provide a forum and united voice to articulate the shared interests of the members;

3. Develop policy, programs, strategy, vision and initiatives that improve the climate for business growth and increase the competitiveness of individual member companies and the industry in national and international markets;

4. Promote awareness of the industry•s economic and social benefits to the state;

5. Improve opportunities for industry-specific education and training, research and development, technology, and promote careers in aerospace;

6. Put Oklahoma on the map as a recognized center, and preferred location for the global aerospace industry. A center known for its ability and willingness to create collaborative partnerships between and among the industry, higher education, career and technology education, and state government; and

7. Publish and maintain a statewide inventory of aerospace assets that would include an aerospace company directory, education and government resources, technologies and accomplishments.

The membership should be inclusive rather than exclusive and be structured as follows:

€ Primary Members should be private for-profit companies, which are doing business in Oklahoma and directly engaged in some segment of the aerospace industry.

€ Associate Members would be any other person, firm, company, entity or other organization with an interest in the aerospace industry that does not qualify to be a Primary Member.

€ Affiliate Members would be non-profit organizations such as universities, colleges, research institutions, other educational institutions or organizations, public or quasi-public agencies, and other trade associations.

GOVERNANCE/ADMINISTRATION: The boards described hereafter should be representative of the segments of the industry that are in the State. The Oklahoma Aerospace Alliance would be comprised of two chapters, one in Eastern Oklahoma and one in Western Oklahoma. A Board of Organizers/Incorporators comprised of eleven members (•OrganizersŽ) shall have general management and control

over all of the affairs and monies of the Association. The Organizers shall adopt by-laws for the Association. Once the Association is operational, the Organizers will function as an executive committee. Seven volunteer members would come from the industry, of which there would be three from the Tulsa area, two from the Oklahoma City area, and two from non-metropolitan areas. The Secretary of Commerce, the Director of the Aeronautics Commission, the Director of CASI, and the Director of the Department of Career and Technology Education would all be ex of“cio members. This board would meet on a quarterly basis, and as needed. The “ rst seven members from the industry shall be the following:

- € Tray Siegfried, Vice President Strategic Growth, NORDAM (Tulsa)
- € Steve Hendrickson, Director, Strategic Planning/Communications, Boeing (Tulsa)
- € Ed Battaglia, Vice President, Sales/ Marketing, Southern Aeroparts (Tulsa)
- € Steve Dwerlkotte, President, Jet Service (Oklahoma City)
- € Jeff Davis, President, Acorn Growth Companies (Oklahoma City)
- € Roger Valdez, President, Valco Manufacturing (Duncan)
- € Calvin Burgess, President, or Mike Penwell, Vice President, Spirit Wing Aviation (Guthrie)

Insofar as the ex of“cio members are concerned, the objective was to place on the board those representatives of government and education who have the responsibility and authority to respond to the needs of the aerospace industry concerning the wellbeing and growth of the industry. The Director of the Aeronautics Commission was selected because the Commission is statutorily charged to promote the aviation industry. The Director will be the point of coordination for all state government resources and assets supporting the industry. The Secretary of Commerce was selected for the obvious reason that Commerce is the a“gship state agency for economic development, and the stimulator of the creation and retention of jobs.
The Director of CASI was selected because it is essential that the research and expertise of higher education be readily and easily available to the industry. What is even more critical in this regard is that there be a single point of contact and focus for aerospace research and economic development activities in higher education. CASI provides this single point of coordination and focus. The Director of the Department of Career Tech was selected because of Career Tech•s historic, sign“cant, and invaluable contribution to the skilled labor pool that is critical to the industry.

The Organizers shall appoint a board of directors comprised of twenty-seven members. Ten of the members shall come from Eastern Oklahoma (east of I-35), ten shall come from Western Oklahoma (west of I-35), and seven members shall be ex-of- “ cio (these shall be the government of“als who are Organizers, the Director of the Oklahoma Space Industry Development Authority, the Commander of Tinker Air Force Base or his/her designee, and the Director of the Mike Monroney Aeronautical Center or his/her designee). The Board of Directors shall meet twice a year, and as needed. It shall, in general, oversee the affairs and activities of the Association.

There would need to be a chief executive/operating of“ cer for the Association, and at least one support staff person. Given the concentration of aerospace companies in Tulsa, the logical location for the primary of“ ce would be Tulsa. The infrastructure and support offered by the Tulsa Aerospace Alliance, the Eastern chapter of the Association, is an additional basis to have the of“ce in Tulsa. The Association should also have an of“ce in Oklahoma City. This of“ ce could probably be at the Aeronautics Commission. The chief executive/operating of“cer for the Association, and the support staff person should be funded as part of initial seed money.

The Aerospace Alliance of Tulsa was initially funded from city coffers. Seed funding for a state

Association would be required for the first five years. Experience with other associations shows that the Oklahoma Association would become self sufficient through membership dues at about the five…year point.

Recommendation 10.

> Establish a statewide aerospace trade association, the Oklahoma Aerospace Association comprised of companies, institutions, organizations, governmental agencies, and others who have a stake or interest in the welfare and growth of the aerospace industry. The state should provide seed funding of approximately $500.000 per year for five years to fund staff and expenses.

5. Statewide Asset Inventory

Issue: The state needs an asset inventory and a means to continually update that inventory.

An essential tool for businesses in the state is a complete inventory of the assets available. Oklahoma has invested in resources that businesses can use to improve their competitive advantages, but many of these resources are not widely known. In addition, the Department of Career and Technology Education and Higher Education have developed curriculum and technologies that would prove beneficial if there were more awareness of these capabilities. Business leaders would also benefit from knowing that other complimentary businesses exist in the state; what they produce and what opportunities there might be for customer-supplier relationships, joint ventures or sharing business intelligence.

Task Force Working Group 3 tackled the job of formulating recommendations for an asset inventory. After reviewing similar products from other states, the Georgia Aerospace Industry Profile was adopted as the baseline. Oklahoma and Georgia share many similarities in industry segments, population density and an existing aerospace cluster.

This profile would not only function as an asset for businesses in Oklahoma, but would be used as a marketing tool to apprise the rest of the aerospace industry about the capabilities and advantages of doing business with Oklahoma companies or in Oklahoma.

The Aerospace Alliance of Tulsa has a baseline company directory and has experience in data collection. By building on that directory and adding other existing data bases from The Oklahoma City Chamber of Commerce, the Aeronautics Commission and the Oklahoma Department of Commerce, a 90% solution could be developed quickly. Then, by adding Higher Education, the Department of Career and Technology Education, The Oklahoma Alliance for Manufacturing Excellence, Oklahoma Bid Assistance Network, small business assistance organizations, local chambers of commerce active in aerospace, government organizations, military organizations and others, a useful asset inventory would be base lined. The inventory would be a dynamic tool that would require maintenance to ensure accuracy, currency and relevance. The initial document could be available by July 2004.

Recommendation 11.

> An aerospace asset inventory be developed along the lines of The Georgia Aerospace Industry Profile and the newly established Aerospace Association of Oklahoma should maintain and update the inventory. Initial funding for the document should be supplied by the Aeronautics Commission in conjunction with its planned update of the Aerospace Economic Impact study.

6. Future Aerospace Events to Encourage Aerospace Growth

Issue: Oklahoma has little recognition as an aerospace state and there are no high profile forums for the industry.

There is no statewide aerospace event in Oklahoma. Businesses, education and support organizations have no forum to discuss issues and highlight the

many advantages, opportunities, capabilities and accomplishments of aerospace in the state. Events are needed to highlight the good, the bad, and discuss the future.

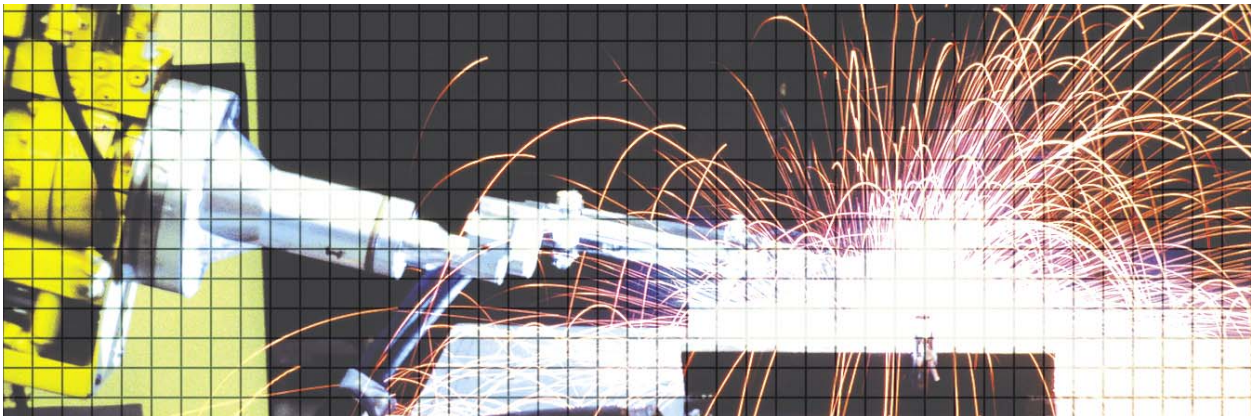
Key to any significant aerospace industry growth is a qualified work force. Aerospace is losing the battle to maintain a pipeline of motivated, creative and productive workers. For example, the majority of American Airlines employees in Tulsa (8,000+) and The Oklahoma Air Logistics Center workers in Oklahoma City (20,000+) will be eligible to retire in the next 5 years. In order to show the next generations that aerospace is an available and desirable career choice, it must be publicized and promoted.

Oklahoma also draws little attention from outside the state. Oklahoma has a good story to tell and opportunities to offer. An aerospace event focused on Oklahoma's specific niche in Maintenance Repair and Overhaul could become a regional and national showcase.

The Task Force members working directly with the Lieutenant Governor developed two concepts, one for a statewide summit for all state aerospace stakeholders, and a second focused on MRO. These events could be the basis for a nationally recognized Aerospace Week in Oklahoma.

Recommendation 12.

The Aeronautics Commission and the newly established Aerospace Association of Oklahoma sponsor a statewide summit. The first summit should create a forum to discuss the recommendations of this task force; Aerospace Career paths; and the future of aerospace in Oklahoma. National level speakers should be invited for a one-day event. A networking social event should be held the previous evening. The Aeronautics Commission, the Oklahoma Department of Commerce, CASI, the Oklahoma Department of Career and Technology Education, other agencies and private sector partners should combine efforts to grow the existing Aerospace Technology Conference into a national event. In addition, the proposed new State Aerospace Summit, the existing Technology Conference and the existing Aeronautics Commission-Oklahoma Airport Operators Association Annual Aviation Conference should be coordinated to create an Aerospace Week in Oklahoma.



Conclusion

This report has recommended several actions to improve the competitive advantages for Oklahoma aerospace companies. Several can make an immediate impact while others create an organization and structure to support the industry into the future. The immediate actions endeavor to level the playing field with other states and the global community. This is critical as the industry undergoes drastic changes and companies around the world are making decisions concerning where, and how to do business for the future. Oklahoma can become the preferred location that supports growth for already resident companies and that attracts investment from outside the state.

The recommendations on the future structure and support are critical to maintaining the present momentum and reacting on a timely and continuing basis rather than relying on crisis management. By focusing resources, planning, advocating policy and infusing and leveraging technology, Oklahoma will be able to grow the existing industry and improve the quality of jobs.

The final set of actions establishes events in Oklahoma that will bring the industry together, create business opportunities, share information and attract national and international attention to Oklahoma. The two recommended events are more than media opportunities; they create a venue for existing business, business attraction and state recognition.

The recommendations will require modest resources. If the industry is important to the present economic health of the state, and is, as the Task Force believes, a cornerstone of the future, it is imperative that these modest resources be allocated and that aerospace industry receive the policy and leadership attention it needs and deserves.

Appendix 1

Strengths, Weaknesses, Threats and Opportunities (SWOT) Exercise Results

Three SWOT exercises were conducted to ensure sufficient feedback from various industry segments; urban and rural areas; large and small companies; and a wide range of government, education and local community leadership. While certainly not a complete survey, these SWOT results helped the task force understand and consider the diverse challenges to the aerospace industry across the state.

SWOT exercises normally required 3 to 4 hours to complete. Experienced OSU-Tulsa, Southeastern University, and CareerTech experts facilitated the exercises.

Strengths Weaknesses, Opportunities and Threats Exercise Report for Tulsa and Northeast Oklahoma

AEROSPACE ALLIANCE OF TULSA

INDUSTRY ANALYSIS TASK FORCE 2003
(Summary)

The aerospace industry spawns a considerable amount of economic movement in the state of Oklahoma, according to a study conducted in 1999 by Dr. David Penn of the University of Oklahoma. Some of the economic impact statistics included in that study are:

- $11.7 billion in industrial output
- $4.7 billion in payroll
- 143,000 jobs
- $77 million in state income tax revenue
- $60.0 million in state sales tax revenue
- Oklahoma aviation and aerospace produce, directly or through the economic multiplier effect, 10 percent of industrial output, 7.6 percent of employment and 10.3 percent of payroll in the state economy.

In Tulsa the impact is as impressive with approximately 25,000 jobs and nearly 200 aerospace companies located in the city and surrounding area.

In May of 2003, the Executive Committee of the Aerospace Alliance of Tulsa, (AAT), met to analyze the strengths, weaknesses, threats and opportunities of the Tulsa aerospace industry. After the analysis was completed, the Executive Committee pulled together recommendations that could increase the competitive advantage of Tulsa aerospace companies. Dr. Raj Basu, Ph.D., Vice-President/Academic Affairs & Chief Academic Officer, Oklahoma State University, facilitated the session. The Executive Committee consists of leaders from large and small aerospace companies, airport executives, representatives of higher education and training, and civic leaders.

The Executive Committee of the AAT concluded that it makes good sense for the City of Tulsa and the State of Oklahoma to increase its focus and concentrate its limited resources on an industry that has an established infrastructure consisting of a well-trained workforce, industry focused education and training programs, facilities and a rich aviation history.

The following pages are the lists of strengths, weaknesses, threats and opportunities as identified and prioritized by the Executive Committee of the AAT.

STRENGTHS

- € Presence of American Airlines & Tinker Air Force Base
- € Low cost of doing business
- € Skilled labor base
- € Quality jobs program
- € More productive facilities
- € Trust ‘nancing available
- € Presence of Honeywell, Boeing, Nordam
- € Room for expansion at Tulsa International Airport
- € Tulsa Aviation Education Alliance
- € Aerospace Alliance of Tulsa
- € 200 + aerospace companies in Tulsa area

WEAKNESSES

- € Leadership does not understand the importance of the industry
- € No incentives for existing business
- € No signi“cant aerospace R & D activity in the state
- € Reciprocal licensing
- € Poor image of state
- € Economic condition of the industry
- € Lack of higher education programs in Aviation
- € Workers compensation rules
- € Bi-polar state (Oklahoma City Vs Tulsa)
- € Lack of non-stop air service to both coasts
- € Shortage of aerospace engineers
- € Poor reputation of public education
- € No major assemblers

OPPORTUNITIES

- € Consolidate Original Equipment Manufac tures (OEMs) here
- € Restructure education to support aviation
- € Provide incentiv for aerospace industry cluster growth
- € Leverage American Airlines and Tinker Logistics Centers to expand supplier base
- € Small Business Set Asides (SBSA)
- € Create funding for existing businesses
- € Educate state leadership
- € In”uence education program
- € Better analysis
- € Become venue for global aviation events
- € Market Oklahoma

THREATS

- € American Airlines ‘les Chapter 11
- € Indianapolis consolidation
- € Failure to act on opportunities
- € People leaving industry
- € General economic conditions
- € SARS and other global in”uences
- € Political in-“ghting
- € Boeing closes operations in Tulsa
- € Higher fuel prices

ACTION ITEMS

THIS YEAR-2003

- € Create aerospace vision strategy for Oklahoma
- € Approach Maintenance, Repair and Overhaul MRO Companies and Aircraft and engine manufacturers (OEM) with package to relocate to Tulsa (consolidation opportunities)
- € Start a Small Business Set-Aside (SBSA)
- € Develop package/information based on benchmarking of other states
- € Develop Incentives for keeping American Airlines back shops in Tulsa
- € Identify Tulsa/Oklahoma assets to market as an MRO state
- € Mayors/Governor to meet with existing Oklahoma aerospace CEOs

FIVE YEARS

- € Develop a Boeing 737 repair/maintenance strategy
- € Incentives for cluster growth in aviation
- € Education/training restructured to meet future needs of local/state aerospace
- € Market Oklahoma aviation industry

Strengths Weaknesses, Opportunities and Threats Exercise Report for Oklahoma City and Central Oklahoma

The exercise was conducted on September 5, 2003 at the MetroTech Aviation Center at Will Rogers Airport.

Lieutenant Governor Fallin opened the exercise.

Aeronautics Director, Vic Bird, briefed those attending on the importance and rationale for the exercise and the Governor•s Aerospace Task Force process.

The exercise facilitator was Vikki Dearing, CareerTech.

Participants were:

1. Chip Carter, Battelle Inc.
2. Jeff Davis, Acorn Inc.
3. Steve Dwerlkotte, Jet Sevices International
4. Don Ward, AAR Aircraft Services - Oklahoma
5. Mike Young, Arinc
6. Pete Lee, Metro Tech Aviation Center, Career Tech
7. Luin Leisher, Manufacturers Alliance for Excellence
8. Luther Trent, Oklahoma City Airport Authority
9. Gary Pence, OKC Chamber of Commerce
10. Kim Wilkerson, Lear Siegler
11. Rex Thomas, Boeing Co.
12. John DiSilvestro, GE Military Engines Engines
13. Garry Varney, L3 Comm
14. Tom Landers, OU/Center for Aircraft Systems Support Infrastructure
15. Carl Hatlelid, Center for Aircraft Systems Support Infrastructure
16. Jim Rice, Profab Inc.
17. Chuck Jernigan, Pratt & Whitney Military Engines

Staff Support:

1. Mary Smith, Executive Director, Aerospace Alliance of Tulsa
2. Tom O•Neill, Oklahoma Department of Commerce
3. Bob Jardee. Oklahoma Aeronautics Commission
4. Jim Vincent, Tulsa Airport

The responses are grouped in priority order and categorized as:

- € The top 5„those with near consensus agreement as important
- € Signi“cant„those recognized by less than half the group as important
- € Honorable mention„Those that were recognized as somewhat important

Strengths

Top Five

1. The presence of Oklahoma Air Logistics Center and the presence of the FAA Center
2. Strong Government-Industry relationships
3. An Established MRO infrastructure in the state
4. Strong training facilities and capabilities
5. Geographic location and transportation network

Signi“ cant

- € Existing industrial and supplier base
- € Low cost of living
- € Low cost of •touchŽ labor
- € Skilled work force
- € Strong work ethic
- € The Higher Education partnership through CASI
- € The presence of large aerospace companies in the state

Honorable Mention

- € Low cost of ƒnancing
- € The Quality Jobs incentive program
- € The ability of a small state like Oklahoma to act quickly
- € Plenty of room to grow
- € A strong aerospace history and tradition
- € Low energy cost
- € Lots of airports
- € Air National Guard presence in Tulsa and OKC
- € Growing R&D in weather at OU

Weaknesses

Top Five

1. Lack of an organized approach to Federal legislation
2. Lack of modern MRO facilities
3. The State aerospace strategy is too broad
4. No state initiatives or strategy to help small business
5. An unfriendly tax structure for business. Corporate and personal income taxes are too high. Oklahoma is the only state in the region to levy sales tax on aircraft parts

Signi“ cant

- € State education suffers from a bad image that is validated by no emphasis on science and technology and the under funding of the system
- € The Air Force market at Tinker is largely closed to private business
- € There is no state vision
- € No incentives to locate R&D in the state
- € There are no major Company HQs in the state„decision makers are remote

Honorable Mention

- € Low number of engineers„probably caused by lack of opportunity and poor pay in state
- € Lack of in-state special processes certi“ companies (example: heat treating)
- € The industry is disjointed
- € The state does not have a high-tech image
- € The infrastructure is old
- € Air transportation is lacking and major roads are in poor repair
- € No center of gravity for aerospace in the state
- € Not enough incentives for investment

Opportunities

Top Five

1. The MROTC project at the Tinker Air Logistics Center
2. Changes to the tax structure to improve the business environment
3. Formalize an industry-education-government partnership
4. Take advantage of Tinker•s aging aircraft expertise and market opportunity
5. Leverage Oklahoma•s on-going research in advanced materials, sensors and weather

Signi“ cant

- € Take advantage of the political in’ence of the Congressional delegation
- € Change the state image from Western and Native American to High Tech Aerospace
- € The privatization of some business at Tinker will create opportunities
- € Attract 3rd party repair that is being outsourced from airlines
- € The growth and demand for business and regional jets

Honorable Mention

- € Leverage the position of the Lieutenant Governor•s national leadership position
- € The 7E7
- € Educate policy makers
- € New jet service
- € Market expertise globally
- € The Air Force contracts for work force transition created an opportunity for in-state and distance learning contract for Oklahoma Education institutions
- € Form a PAC or other political organization

Threats

Top Five

1. Markets and federal rules change rapidly„without a strategy and processes to proactively react, others will beat us to the punch
2. Loss of skilled and trained work force„ leaving the state for better jobs at better salaries
3. Failure to work together across the state
4. Regional competitors from Texas and surrounding states with more to offer
5. The move of acquisition and contracting authority from Tinker to Wright Patterson and Pentagon

Signi“ cant

- € Shifting work from Tinker to other out of state locations
- € Foreign competition
- € The loss of Tinker or American Airlines
- € Lack of awareness of assets in the state that could be value added
- € Encroachment at Tinker that would affect Base Realignment and Closure vulnerability
- € State revenue shortfalls

Honorable Mention

- € Failure to pass or fund incentives
- € Failure of the economy to recover
- € General apathy for any action unless there is a crisis
- € Slow population growth that affects the state political power„Congressional seats, etc.
- € Consolidation within the industry
- € Compliance with increasing environmental regulations

STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS
AVIATION AND AEROSPACE DEVELOPMENT

Governor•s Aviation Task Force
Southern/Western Oklahoma SWOT Exercise
Ardmore, Oklahoma
September 29, 2003

Dr. Buddy Gaster, Dean of the School of Business at Southeastern Oklahoma State University facilitated the exercise. Following are the findings:

Strengths

Top Six

1 Pro business environment for Aerospace
   - Facilities: Tinker, Airports, FAA,
2. Location
   - Easy access
   - Transportation network
3. Oklahoma Aeronautics Commission
   - Aviation support
   - Regional Airport Concept
4. Education and Training Partnerships
   - CareerTech
5. Legislative Support & Federal Congressional in"uence
6. Workforce

Other Strengths Listed

- Clinton/Sherman, Ardmore Airpark and other facilities around the state
- General Aviation Activity
- Funding for airports and runway improvements
- Flight schools
- ODOC and Quality Jobs program
- Heritage
- Weather

Weaknesses

Top Seven

1. Lack of focus on growing the aerospace industry. Lack of coordinated marketing programs and a clearinghouse of activities.
2. Oklahoma Tax Policy that places us at a competitive disadvantage.
3. Workers Compensation Insurance costs that far exceed other competitive states. General liability Insurance costs.
4. Infrastructure and funding particularly for MRO.
5. Common Education and particularly the technology, science and math programs.
6. Misdirected incentives„based on job growth rather than investment.
7. Insuf" cient amount of Oklahoma business contracts at Tinker and with Prime Contractors.

Other Weaknesses Listed

- Insuf" cient state and federal funding
- Lack of modern MRO facilities
- Weather
- A general unawareness of the importance of the Aerospace industry.

Opportunities

Top Five

1. Creation of a focused effort to build, grow, and market Oklahoma businesses.
2. Grow existing business, attract companies and create new businesses. Take advantage of the aging aircraft ”eets by providing needed facilities, services and products.
3. Spotlight on education and aerospace creates an opportunity for emphasis and improvement.
4. EDGE committees, Aerospace Task Force and other initiatives provide a timely opportunity to improve our business climate through pro-active legislation.
5. The Asset Inventory will create new opportunities for existing business and identify potential market niches and industry clusters that can be developed.

Other Opportunities

- Meaningful workers comp reform is attainable with knowledge and emphasis on generating growth in the economy.
- Consolidation of airports and elimination of under-funded facilities will allow for the best utilization of resources

Threats

Top Five

1. Failure to act on opportunities
2. Insurance: High workers compensation costs and product liability insurance
3. Workforce: Brain drain and the lack of skilled workers
4. Competition: from other states, loss of existing business and potential base closures
5. Regulatory restrictions

Other Threats

- Terrorism
- Decreased aviation activity
- No increase in the workforce
- Flight restrictions
- Too heavy concentration in one industry sector could adversely impact the state if that sector experienced a downturn.
- Fuel costs.

Goals And Recommended Activities

1. Develop Asset Inventory
    a. Products
    b. Services
    c. Facilities
    d. People/employees/skills
2. Develop and implement effective programs to grow existing businesses and develop new businesses
3. Increase commercial aviation
4. Identify and pass needed legislation to make the industry more competitive

Attendance

Tim Roehl, General Aviation Modi“cations
Roger Valdez, Valco Manufacturing
John Balzigen, National Business Aviation Assc., Inc.
Bill Khourie, Oklahoma Space Industrial Development Authority
B.F. Rowland, Southwest Technology Center
Dr. Gaster, Southeastern Oklahoma State University
Dr. Conway, Southeastern Oklahoma State University
Jerry Neilson, Luscombe Aircraft
Don Sanders, Sanders Airomotive
Victor Bird, Aeronautics Commission
Mary Smith, Aerospace Alliance of Tulsa
Erin Wright , Aeronautics Commission
Tom O•Neill, Oklahoma Department of Commerce
Wes Stucky, Aeronautics Commissioner and Ardmore Chamber

Appendix 2, Working Group Reports

The Task Force was organized into four working Groups:

Working Group One.

Make recommendations for specic actions that will improve the competitive advantages for Oklahoma companies and foster industry growth in the state.

Working Group Two.

Recommend an organization structure that can continue to support the industry by providing technology infusion, strategic planning, advocacy and value added resources for the industry.

Working Group Three.

Plan and begin a statewide aerospace assets inventory and recommend an organization to continue that effort to completion.

Working Group Four.

Host a statewide summit in 2004 and plan a national aerospace event in Oklahoma in 2005.

Working Group One Report on Competitive Advantages

Goal One: Make recommendations that will improve the competitive advantage of Oklahoma companies and grow the aerospace industry in the state.

Workgroup members:
Vic Bird, Roger Valdez, Gary Moon, Tray Siegfried, Wes Stuckey, Bob Jardee, Tom O•Neill, Steve Dwerlkotte, Michael Yort, and facilitator Jeff Wilkie

Process:

1) Gather data and research current states:

In order to provide a breath of information from various locations, industry sectors and supporting organizations, three separate sessions to draw out the strengths, weaknesses, opportunities and threats (SWOT analysis) present within Oklahoma•s Aerospace Industry.

The following is a summary of the SWOT results as they pertain to working group one:

Most Important Strengths Of Oklahoma Aerospace Were:

1. The Presence of very large aerospace industry operations. Tinker Air Logistics center and the American Airlines Maintenance Base.
2. A skilled and well-trained work force and the training/education system to ensure that this pipeline continues
3. An excellent geographic location and a transportation system ensures easy access and ef"cient logistics
4. An established MRO infrastructure
5. An excellent network of rural airports that is well planned and advocated by the Aeronautics Commission

The weaknesses that most impact the aerospace industry were:

1. No initiatives to help existing businesses to grow or even survive
2. A Tax policy, Workers Comp system and needed tort reform that all impact the cost of doing business
3. Lack of focus and support for the aerospace industry at the state or Federal level„no strategy, policy advocates or information sources
4. Little R&D or Higher Ed. participation in technology for the industry
5. Few modern facilities

The most valuable new opportunities for the aerospace industry were:

1. Leveraging Tinker and American to expand the supplier base„focus on Oklahoma as the MRO capital of the aerospace industry„Tinker for the military and Tulsa for Commercial and the entire state for business and General Aviation)
2. Consolidate OEMs in the state
3. Restructure education to support the industry
4. Market Oklahoma•s advantages
5. Take advantage of current and future technology and R&D to build the industry

The most imminent threats to the aerospace industry were:

1. The failure to act at this critical time and take advantage of the opportunities
2. The loss of skilled workers or the unwill-

ingness of the next generation to choose aerospace as a career

3. The changes in federal acquisition and procurement policy and our inability or unwillingness to adapt
4. Loss of critical industry players (American as a result of Chap 11; Boeing as a result of consolidation or restructure; Tinker as a result of BRAC)
5. Foreign and out of state competition

This information was then provided to each working group. The entire SWOT Analysis results are attached.

In addition to SWOT Analysis the working group also heard the Lt. Gov. perspective on Aerospace industry development from a state leaders• perspective and also viewed from her position as Chairperson of the Aerospace States Association.

In addition, pertinent information was posted on a dedicated web site. Some of the items included are:

- € FAA 2003 Industry Forecast
- € All meeting documentation
- € Ohio Benchmarking Report

2) Workgroup meetings:

At the workgroup meetings, representatives from Maintenance Repair and Overhaul (MRO) organizations were present to share ideas and further explore the ever-changing variables as well as consistent elements to maintaining the competitive advantages of aerospace in Oklahoma, nationally and internationally. Each meeting had agenda items and involved presentations being made by the Oklahoma Bid Assistance Network, Career Tech and CASI representing Oklahoma Regents for Higher Education. The members of the groups shared their expertise within presentations made to other members of the working group.

The group was provided staff assistance from the Aeronautics Commission and the Oklahoma Department of Commerce. In addition, Mr. Jeff Wilkie, an experienced consultant with Career Tech, facilitated meetings and provided summary activities at the conclusion of each meeting session. Members of the work group took discovery assignments and reported back on elements that were assigned. The business leaders on the team supplied the majority of the input on the present competitive environment for the aerospace industry in Oklahoma.

Within workgroup discussion, the business leaders agreed that their recommendations could be placed in four primary groups:

- € Aerospace assistance and enhancement
- € Aerospace business impediments
- € Aerospace government contracting
- € Aerospace innovative foresight analysis

All working group members agreed on the following recommendations.

Recommendations:

Aerospace assistance and enhancement:

1. Creation of a cooperative council that would leverage the collective strength of smaller Maintenance Repair and Overhaul (MRO) businesses. This group would also focus on creating marketing strategies and increasing the awareness of smaller organizations• capabilities.

Workgroup discussion: Most of the jobs in the state are the result of the smaller businesses in aerospace. The trends within the industry are for consolidation and the pressuring of smaller suppliers and repair stations for lower prices. By collaborating and leveraging their corporate marketing strength, these smaller companies could compete for more work. In addition, the smaller companies could more effectively impact policy by speaking as an organized group, uniting as one front.

Recommended implementation steps:

- € This could be implemented as a stand-alone council, or as part of a larger statewide alliance.

2. Enhance the services of the Oklahoma Bid Assistance Centers with more intensive assistance, business intelligence and training efforts focused on the Aerospace sector.

Workgroup discussion: One of the most lucrative sources for business expansion is through winning government contracts with the Oklahoma City Air Logistics Center (DOD), The Mike Monroney Aeronautical center (FAA) and other Federal agencies. Presently, the Oklahoma Bid Assistance Network (OBAN) provides help with the technical aspects and strategies to apply for and win these contracts. OBAN has been successful in the broad area of government contracts. The resource is not well known and is not focused on end-to-end help, nor does it provide an aerospace focus. If this capability could be more "nely focused on the aerospace industry, many more companies would be able to successfully compete for government contracts.

Recommended implementation steps:

- € Review the mission, capabilities, resources and organization of OBAN and refocus a majority of the capability on aerospace.
- € Consider moving the organization to The Department of Commerce or the Aeronautics Commission to work as part of a business development team.

3. Establish a state trade association concerned with maintaining and obtaining best practices to be shared with all sectors of the aerospace industry.

Workgroup discussion: Discussion focused on an organization whose sole purpose was to advocate for the aerospace industry as a whole. The solidarity and exchange of ideas shared proved that there is in fact a need and desire to form a statewide organization. The Aerospace Alliance of Tulsa has discovered value-added benet's to coordinated efforts and sharing knowledge across Green Country.

Aerospace business impediments:

4. Continue more aggressive Tort Reform and continue improvements to the State Worker•s Compensation laws and practices.

Workgroup discussion: Tort reform impacts all businesses. If the state enacted aggressive tort reform, the state•s businesses would enjoy a more competitive advantage. The same is true in Workers Compensation. Oklahoma businesses are at a competitive disadvantage to business in other states and in other countries.

Recommended implementation steps:

- € Advocate that the Legislature enact aggressive tort reform and continue improvements to the State•s Workers• Comp laws and practices.

5. Repeal the state sales tax associated with parts used in the maintenance, repair and overhaul or aircraft in Oklahoma.

Workgroup discussion: Surrounding states (Texas, Kansas, Arkansas and others) do not charge sales tax on parts used in the MRO business. Oklahoma does. That puts Oklahoma companies at a competitive disadvantage. The disparity has been addressed for some of the larger companies such as American Airlines and those overhauling aircraft above 9,000 lbs. Oklahoma grants an exemption from sales tax

for these companies. Smaller companies are losing business and the state is losing jobs as aircraft owners take their business to other states. We need to level the playing “eld.

Recommended implementation steps:

- € The Oklahoma Tax Commission should recognize MRO under the same category as the North American Classi‘cation System. Consider MRO as manufacturing.

- € If recognized as manufacturers, parts used in the MRO process would be exempt from sales tax.

- € Grant a blanket sales tax exemption for MRO without regard to aircraft weight.

6. Help reduce product liability insurance cost for Oklahoma companies by researching insurance options to “ nd best offer or rate. Advocate on behalf of Oklahoma aerospace companies.

Workgroup discussion: Product liability is a cost driver for aircraft parts manufacturing and aircraft services providers. If Oklahoma companies could access lower product liability insurance cost it would provide a competitive advantage. It may be possible to get a group rate.

Recommended implementation steps:

- € Research product liability insurance companies and look into advocating group rates.

- € Utilizing trade associations to gain a reduced insurance plan happens often in many industries. We must look at the possibility of creating an Oklahoma group insurance policy just as medical and restaurant industries have established. This was suggested in the past by the Aerospace Alliance of Tulsa and could be done under the umbrella of a business/trade organization if one were to be established as a legal entity. (The Tulsa Alliance does not have that status).

- € This could be part of the value added state aerospace association being recommended by this working group earlier in the report.

Aerospace government contracting

7. Establish an Oklahoma business of“ ce focused on getting Tinker and other governmental contract business.

Workgroup discussion: The possibility of competing for and winning more contracts at Tinker is a high priority for state companies. Of the $4.1 Billion in contracts only a small percentage of the work is done in the state. The state needs a more aggressive program to market capabilities and pressure government procuremenet to award to small businesses as well as, the prime contractors to subcontract within the state rather than out of state. In many cases Oklahoma companies can compete on cost, quality and quali“ cations if there was more information on pending contract and if the government and the primes were more aware of the capabilities of Oklahoma companies. A business of“ce with well-quali“ ed personnel and suf‘cient resources would provide a competitive advantage for Oklahoma companies.

Recommended implementation steps:

- € Establish an Oklahoma business promotion of“ ce focused on the aerospace contracts available at Tinker Air Logistics Center and the FAA Mike Monroney Center.

- € This would require funding either through reprioritizing existing programs or allocating funds through in the 2004 legislative session to create the of“ce in Commerce or Aeronautics Commission.

8. Create a source or “nancing vehicle that provides more access to funding in order to enable smaller organizations to compete for contracts.

Workgroup discussion: Competition for government contracts requires substantial investment of resources to register, compete and win. In addition, once won, it could also require substantial up front capital to establish inventory, new processes, appropriate certi“ cations, or a need to acquire new and advanced technologies. Although companies may have the capability and know-how to perform, they may not have the capital or borrowing power to make the initial investment. By providing a source of this “ nancing, more Oklahoma companies could compete and win government contracts.

Recommended implementation steps:

- € Create a small business loan capability that can be guaranteed once a company has won a government contract.
- € Establish processes for qualifying and acquiring capabilities to compete.

Aerospace innovative foresight analysis:

9. Audit the Canadian Commercial Corporation for best practices and create a similar organization, or appropriate capabilities for Oklahoma.

Workgroup discussion: The contracting experts from Tinker Air Logistic Center report that the Canadian model of providing a central sourcing point for goods and services throughout Northeast Canada has been very successful. Canada has grown its aerospace exports to $20 Billion in 2003. Northeast Canada is the location of the majority of aerospace related suppliers. It is growing rapidly. The Canadian Government is helping by providing a one-stop shop for aerospace procurement. This lessens the work and risk of government procurement organizations. The workgroup did an extensive audit of the website and see this as an excellent best practice model to learn from.

Recommended implementation steps:

- € First, benchmark the Canadian model for value-added components and practices.
- € Establish the factors (how) that allow Canadians to gain governmental contracts and assess (what) governmental entities requirements.
- € If there are elements that can be done in Oklahoma to bene“t businesses in state, develop another set of recommendations to create those capabilities in appropriate government, semi-government or private organizations.

10. Audit the Ohio research model for best practices and use in Oklahoma.

Workgroup discussion: Oklahoma companies need access to newer technology. Businesses need to be able to leverage existing Oklahoma technology, R&D and consulting advice that already exists in our universities. Oklahoma businesses need an unbiased organization that can build collaborative partnerships among companies to compete for lucrative and sometimes extremely complex projects. Ohio has developed a successful model. Honeywell LORI in Tulsa suggested the model. Team members visited the organization and agree it provides a competitive advantage.

Recommended implementation steps:

- € Reassess visit to Ohio.
- € Consider developing the model around the existing CASI structure. This will require legislative action in terms of funding for CASI. CASI should submit a plan and budget to be included in the 2004 legislative session.
- € Aeronautics, Commerce and Regents should support the initiative.

Working Group Two, Report on Organization and Policy

TASK:
Recommend an organization/structure to continue the work of the Governor•s Aerospace Task Force and support the welfare and growth of aerospace industry.

WHAT:
A statewide aerospace trade association, the Oklahoma Aerospace Alliance (•OAAŽ), comprised of companies, institutions, organizations, governmental agencies, and others who have a stake or interest in the welfare and growth of the aerospace industry.

WHY:

€ To create a positive environment and united voice for the aerospace industry.

€ To provide a forum and united voice to articulate the shared interests of the members.

€ To develop policy, programs, strategy, vision and initiatives which improve the climate for business growth and increase the competitiveness of individual member companies and the industry in national and international markets.

€ To promote awareness of the industry•s economic and social benefits to the state.

€ To improve opportunities for industry-specific education and training, research and development, technology and promote careers in aerospace.

€ To put Oklahoma on the map as a recognized center, and preferred location for the global aerospace industry. A center known for its ability and willingness to create collaborative partnerships between and among the industry, higher education, career and technology education, and state government.

· To publish and maintain a statewide inventory of aerospace assets that would include an aerospace company directory, education and government resources, technologies and accomplishments.

SPECIFICS:
Primary Members would be private for-profit companies, which are doing business in Oklahoma and directly engaged in some segment of the aerospace industry.

Associate Members would be any other person, firm, company, entity or other organization with an interest in the aerospace industry which does not qualify to be a Primary Member.

Affiliate Members would be non-profit organizations such as universities, colleges, research institutions, other educational institutions or organizations, public or quasi-public agencies, and other trade associations.

GOVERNANCE/ADMINISTRATION:
The boards described hereafter should be representative of the segments of the industry that are in the State. The OAA would be comprised of two chapters, one in Eastern Oklahoma and one in Western Oklahoma. A Board

of Organizers/Incorporators comprised of eleven members (•OrganizersŽ) shall have general management and control over all of the affairs and monies of the OAA. The Organizers shall adopt by-laws for the OAA. Once the OAA is operational, the Organizers will function as an executive committee.

Seven volunteer members would come from the industry, of which there would be three from the Tulsa area, two from the Oklahoma City area, and two from non-metropolitan areas. The Secretary of Commerce, the Director of the Aeronautics Commission, the Director of the Center for Aircraft Systems/Support Infrastructure (•CASIŽ), and the Director of the Department of Career and Technology Education would all be ex-officio members. This board would meet on a quarterly basis, and as needed. The seven members from the industry shall be the following:

€ Tray Siegfried, Vice President Strategic Growth, NORDAM (Tulsa)
€ Steve Hendrickson, Director, Strategic Planning/Communications, Boeing (Tulsa)
€ Ed Battaglia, Vice President, Sales/Marketing, Southern Aeroparts (Tulsa)
€ Steve Dwerlkotte, President, JetService (Oklahoma City)
€ Jeff Davis, President, Acorn Growth Companies (Oklahoma City)
€ Roger Valdez, President, Valco Manufacturing (Duncan)
€ Calvin Burgess, President, or Mike Penwell, Vice President, Spirit Wing Aviation (Guthrie)

Insofar as the ex-officio members are concerned, the objective was to place on the board those representatives of governm and education who have the responsibility and authority to respond to the needs of the aerospace industry concerning the well-being and growth of the industry. The Director of the Aeronautics Commission was selected because the Commission has been statutorily charged to promote the aviation industry. The Director will be the point of coordination for all state go ernment resources and assets supporting the industry. The Secretary of Commerce was selected for the obvious reason th Commerce is the flagship state agency for economic development, and the stimulator of the creation and retention of jobs.

The Director of CASI was selected because it is essential that the research and expertise of higher education be readily and easily available to the industry. What is even more critical in this regard, is that there be a single point of contact and focus for aerospace research and economic development activities in higher education. CASI provides this single point of coordination and focus. The Director of the Department of Career Tech was selected because of Career Tech•s historic, significant, and invaluable contribution to the skilled labor pool that is critical to the industry.

The Organizers shall appoint a board of directors comprised of twenty-seven members. Ten of the members shall come from Eastern Oklahoma (east of I-35), ten shall come from Western Oklahoma (west of I-35), and seven members shall be ex-officio (these shall be the government officials who are Organizers, the Director of the Oklahoma Space Industry Development Authority, the commanding officer of Tinker Air Force Base or his/her designee, and the Director of the Mike Monroney Aeronautical Center or his/her designee). The Board of Directors shall meet twice a year, and as needed. It shall, in general, oversee the affairs and activities of the OAA.

There would need to be a chief executive/operating officer for the OAA, and at least one support staff person. Given the concentration of aerospace companies in Tulsa, the logical location for the primary office would be Tulsa. The infrastructure and support offered by the Tulsa Aerospace Alliance, the Eastern chapter of the OAA, is an additional basis to have the office in Tulsa. The OAA should also have an office in Oklahoma City. This office could probably be at the Aeronautics Commission.

Partnership in support of Oklahoma's Commercial, Military, and General Aviation Industry

Submitted by CASI (Drs. Landers and Nazemetz)

Background

The Center of Aircraft Systems/Support Infrastructure (CASI) is a higher education coalition that provides a single point of contact and focus for aviation research and economic development activities. It has sought and obtained Congressional funding for support of an applied research program in Maintenance, Repair and Overhaul (MRO) at the Oklahoma City Air Logistics Center (OC-ALC also known as Tinker Air Force Base). In addition to the over $8M of Congressionally-funded projects for the OC-ALC in the most recent four Fiscal Years (FYs), CASI, has successfully executed a variety of projects at commercial/private companies and the FAA•s Mike Monroney Center.

Recently, Governor Brad Henry convened the •Economic Development Generating Excellence• (EDGE) effort to quickly study and identify initiatives for executive and legislative consideration. Central in the EDGE Aerospace sub-committee recommendations was the concept of leveraging existing statewide institutions/ organizations/ initiatives to improve the state support of the its largest industrial sector. Aerospace activities provide approximately 10% of the state•s economy and the EDGE Aerospace sub-committee recommended that the State provide the resources to its commercial aviation sector by providing applied research funding to address generic aerospace industry problems through CASI. The sub-committee envisioned that the State, through the Oklahoma Aeronautics Commission (OAC) provide $2M or more in funding to CASI for operation and execution of applied research in support of the Oklahoma commercial, military, and general aviation sectors.

The Governor also formed the Oklahoma Aerospace Task Force to make recommendations to improve the competitive advantages for Oklahoma aerospace companies. The task force is chaired by the Lieutenant Governor and supported by The Oklahoma Department of Commerce and The OAC. One of the strong recommendations from the task force is the need to create a government-education-industry partnership. CASI must be supported to provide the education leg of this partnership.

Vision

It envisioned that the Oklahoma OAC and CASI, in combination with the State•s aerospace industry associations, would develop a prioritized research agenda and solicit, evaluate, select, and execute an Oklahoma aerospace research agenda. Faculty within the State•s higher education institutions would conduct the research in conjunction with appropriate commercial partners.

The agenda would provide a balanced set of applied and basic research. The applied research would address current problems while the basic research agenda would help position Oklahoma industries at the forefront of developing technologies and markets to assure long-term economic competitiveness and prosperity. The CASI-led research would address generic problems and issues within the commercial, military, and general aviation sector, providing the results of the research to the benefit of the sector as a whole and municipalities in which aerospace industries are located. CASI would continue to provide company-specific research and problem solving on a fee for service basis in parallel to the state supported generic research as well as provide federally sponsored applied research in support of the OC-ALC and the FAA, combining the best of commercial and industrial practice. This initiative would more closely align and foster efficient cooperation of the State•s education, industry, and government efforts in support of Oklahoma•s largest industrial sector and would help provide long-term eco-

nomic development stimulus by supporting both today•s needs while increasing the exposure of college graduates to aerospace issues and help train them to support the State•s vital aerospace sector. The increased supply of graduates and the increased proficiency of faculty in support of aerospace will also provide human assets that help attract new aerospace industry starts and expansions to the State.

Request

In order to establish effective research support, the partnership is seeking funding to integrate the CASI/OAC/ODOC aviation support experiences and the existing aviation industry associations to identify and execute the most critical arenas to establish and improve of the State•s aviation sector•s competitive position in new and existing markets. This partnership will transition the current fragmented efforts to a solid foundation and a cohesive coordinated education, industry, and government thrust that identifies and addresses the most pressing problems in the Oklahoma aviation sector.

The requested funding will establish OAC, CASI, ODOC, and the aviation industry associations as the focal point for statewide industry, government, and education efforts to support the State•s largest industry by providing a long-term funding base. The definition of the sector•s needs and their priorities will be defined by the aviation industries themselves on an on-going basis. The OAC and CASI will work to execute the state•s (generic) commercial aviation research and development agenda and assure that the agenda meets the needs of the current and developing aviation enterprises. an annual presentation of results and reassessment of the research agenda will be provided to the industry and general public throughout the year as well as in an annual aviation issues and research forum.

The requested funding will build upon CASI•s current activity, expanding it to efficiently address the generic problems of Oklahoma•s established and evolving aviation enterprises. At the current time, much of the anticipated growth in the sector is expected to be advanced by the establishment of small innovative businesses as well as expansion of current aviation companies and the recruitment of new companies to the State. The ability of the State and local municipalities to recruit new or relocating businesses will be enhanced by a viable, focused State supported aviation research program that unites the industry, education, and government to identify the most pressing problems, provide the intellectual assets needed, and provide the funds needed for the maintenance and advancement of the State•s largest industry.

CASI is currently executing a research agenda established by its current military installation (OC-ALC), government installation (FAA) sponsors, and commercial companies with annual research expenditures of approximately $2M. This budget provides installation- and company-specific applied research. In order to establish, prioritize, and address the generic basic and applied research needs of the sector, the proposed budget requests State Legislature action to establish a partnership of CASI and key state agencies and to appropriate funds for a period of five years in the amount of $1,925,000 per year: $425,000 for service and $1,500,000 for technology. The State investment will be leveraged 1.7:1 by federal agencies and private sector companies during, prioritizing, and funding technical projects.

Item	Annual Amount	Source
CASI Studies in support of ODOC industry recruitment and development studies	$125,000	OAC/ODOC
CASI Research Studies for Oklahoma Aerospace Companies €Applied Research and Development Agenda Identification and Projects €Basic Research and Long Term Development Agenda Identification and Projects	 $600,000 $900,000	Oklahoma Legislature to be provided through OAC
CASI Applied Research Studies for Federal Facilities	$1,750,000	Federal Gov•t
CASI Activities in Partnership with Private Industries	$1,500,000	Industries
CASI Administration and Operations €Higher Education Interaction/Coordination €Oklahoma Aerospace Industry	 $125,000 $175,000	 OSRHE OAC

It is anticipated that the research agendas would support the development of technologies and businesses that would, but would not be limited to, the

- € Enhancement of the State•s Aircraft Maintenance, Repair, and Overhaul (MRO) capabilities and competitiveness for military and commercial aircraft,

- € Leveraging of the military and commercial aviation MRO to private aviation MRO and airworthiness activity, especially in anticipation of the requirements that will stem from the Small Airport Transportation System (SATS) initiative,

- € Support of the MRO of the National Airspace (NAS) through the FAA Mike Monroney center,

- € Enabling of commercial development of an Unmanned Aeronautical Vehicle (UAVs) for military and civilian applications, to include not only the airframe and propulsion systems but also leverage the current university research in sensors and control,

- € Support of the development of sub-orbital initiatives relative to sensors, controls, propulsion, infrastructure,

- € Leveraging new materials and sensor technology to attract new projects to the state

- € Provide support to new and existing aerospace companies and use this as a carrot to seed R&D projects in Oklahoma.

The operation of the state-supported portion of the initiative is illustrated below:

The state funding provided will be used to address the industry-identified "needs through the OAC, CASI, ODOC partnership. The research agenda is set by industry and the partnership and the results are disseminated to industry. The OAC provides the conduit for setting the research agenda and industry selects which proposals are solicited. CASI researchers develop proposals for addressing the needs of the states commercial aviation sector and the OAC and ODOC selects from the submittals those that are to be funded. CASI manages the research under the oversight of the OAC and ODOC and the research results are reported to industry via published and web materials and through a statewide aviation research conference.

Summary

The size and importance of the aerospace industry in the State is not yet reflected in needed State funding support. While comparable in economic impact to agriculture and to energy, aerospace has been neglected by the State. Aerospace is currently the State•s largest industry with 143,000 jobs, generating 10% of the State•s tax revenues. The disparity of funding and support for this critical sector by the State of Oklahoma is clearly demonstrated in the 87 page Summary of FY2004 Budget Recommendations for the State (http://www.osf.state.ok.us/bud04-2.pdf) which dedicates 11 pages to the State•s Agriculture budget and 7 pages to its Energy budget while including the word •aerospaceŽ only once (pg 72) and the word •aviationŽ, not at all.

The State of Oklahoma must support its current and future economic base. Adequate support of the vital aerospace industry by the State is critical. In order to support and grow this vital industry, funding is sought begin the development of an industry, education, and government partnership which will strengthen the commercial, military and general aviation sector and help align the resources of higher education to the sector as well. This partnership will provide research and development support to the aerospace industry by leveraging intellectual resources of the State•s higher education system to address critical R&D needs of current and developing aerospace companies.

Funding of the proposed partnership will be a modest start toward the more equitable recognition of contribution and needs of the aerospace sector by the State and will lead to greater ability to grow, attract, and retain high-paying aerospace jobs in Oklahoma.

Proposal to Implement Recommendations of the Oklahoma Aerospace Taskforces
Center for Aircraft and Systems/Support Infrastructure (CASI)

Need

Aviation is one of Oklahoma•s leading industries, accounting for roughly 10% of industrial output. Tinker Air Force Base is the State•s largest employer and is the focal point for an extensive community of private sector companies. The recent proposal activity for Boeing 7E7 workload dramatically demonstrated the potential of state-wide cooperation to promote this industry. The Tulsa World reported (12/18/03) that manufacture of leading edge components for 7E7 wings will bring $222 million of economic bene“t to Tulsa, including 500 direct jobs and over 1600 indirect jobs. The direct jobs would range in salary from $40,000 to $60,000 and include 80% skilled technicians, 10% engineers, and 10% support workers. In the intense global competition for high-technology industry, successful communities cultivate clusters involving active cooperation among business, government, and education/training. Higher education supported the proposals for 7E7 workload through two multi-campus research coalitions with expertise in aviation and transportation/logistics: CASI … Center for Aircraft and Systems/Support Infrastructure and OTC … Oklahoma Transportation Center. Through investments of the Oklahoma State Regents for Higher Education (OSRHE) and U. S. Department of Defense, CASI has grown over the past four years to become the higher-education partner in Oklahoma•s aerospace cluster. However, the CASI focus has been primarily on maintenance, repair, and overhaul (MRO) for the military aviation sector. Oklahoma needs to leverage the investment in CASI to further secure its future in military aviation and to grow its private sector aerospace industry.

Recommendation

The EDGE Aerospace Panel has called for a statewide coordinated focus on the aerospace industry as one of the State•s largest employers and concentrations of technological assets, both now and in terms of growth potential. The Panel recommended that the Center for Aircraft and Systems/Support Infrastructure (CASI) partner with the Oklahoma Aeronautics Commission (OAC), forming the •statewide focal point for higher education to partner with industry, government, and career-tech to:

1. Advise aerospace companies on new manufacturing techniques, processes, and technologies and to assist in implementation;
2. Coordinate and focus university research and expertise to solve problems or recommend strategies which will make Oklahoma•s aerospace industry more competitive; and
3. Advocate and communicate with state training and education agencies concerning curriculum, facilities, and equipment acquisition that support current and future aerospace employment.Ž

To carry out this mission, CASI must expand its scope of service (multi-campus coordination, industry outreach, economic development) and technology (research, development, and technical support). The proposed budget requests State Legislature action to establish a partnership of CASI with key state agencies and to appropriate funds for a period of “ve years in the amount of $1,925,000 per year: $425,000 for service and $1,500,000 for technology. The State investment will be leveraged 1.7:1 by federal agencies and private sector companies de“ning, prioritizing, and funding technical projects.

	Annual Amount	Source
State Support		
OK Higher education coordination	$125,000	OSRHE
OK Aerospace industry outreach	$175,000	OAC
Economic Development support	$125,000	ODOC
Research	$1,500,000	OAC/OCAST
Subtotal	$1,925,000	
Research and technical support on fee-for-service basis		
Federal (Air Force and FAA)	$1,750,000	
Private industry	$1,500,000	
Subtotal	$3,250,000	
TOTAL	$5,175,000	

Accomplishments

Through CASI, faculty and students from Oklahoma universities and colleges have achieved a key role in the State•s aerospace industry. They have performed over 100 projects for Oklahoma City Air Logistics Center (OC-ALC) and FAA Logistics Center (FAALC), in partnership with private sector companies. Sample projects:

- B-1B Aircraft Pitotstatic Probe Interface … Development of calibration and leak-testing technology resulting in operating cost reductions of $430K/year and compression of the calibration labor cycle time by a factor of 7:1. Field deployment is in progress.
- Material Handling and Distribution for MRO Facilities … Development of efficient material "ows for large airframe components (e.g., horizontal and vertical stabilizers) removed to facilitate aircraft overhaul, including appliances for workpiece handling and storage. This project is on going. A similar project for the FAA resulted in one-time cost avoidance of $1 million and annual recurring savings of over $1 million.
- Reverse Engineering … Technology assessment of non-contact 3D imaging to capture parts geometry data from aging aircraft, with potential savings of $7 million per year.
- Geothermal Heat Pump … Evaluation of energy recovery from the industrial wastewater treatment plant for heating of base facilities, with estimated payback of 4 to 6 years, depending upon the facilities implemented.