



North Texas Aviation Education Initiative

NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS



Executive Summary

December 2009

The greater North Central Texas community seeks to create and sustain an aviation and education system that fosters individual aviation careers as well as regional aviation viability and growth.



North Central Texas
Council of Governments



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GLOSSARY

This section defines acronyms and abbreviations used throughout the document.

Term	Description
AABI	Aviation Accreditation Board International
ISD	Independent School District
MVC	Mountain View College
NAISC	North American Industry Classification System
NAS Fort Worth JRB	Naval Air Station Fort Worth, Joint Reserve Base
NCTCOG	North Central Texas Council of Governments
PJC	Paris Junior College
STEM	Science, Technology, Engineering and Math
TCC	Tarrant County Community College
THECB	Texas Higher Education Coordinating Board
UNT	University of North Texas



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In response to the widely-recognized need for additional aviation workforce in the region, the North Central Texas Council of Governments (NCTCOG) launched the North Texas Aviation Education Initiative in early 2009. Working with a consultant, Pavlik and Associates and its team of aviation education specialists, NCTCOG directed a comprehensive study of existing assets and resources and developed a far-reaching strategic business plan that creates the foundation for an integrated aviation education and employment system within North Texas. The vision, as developed in this study, is:

The greater North Central Texas community seeks to create and sustain an aviation and education system that fosters individual aviation careers as well as regional aviation viability and growth.

This executive summary provides an overview of the 14 reports that make up the study and provides detailed recommendations for program implementation. Contributing to the study were a Project Review Committee, a variety of Stakeholders, representatives of area colleges and universities, workforce development specialists, and aviation industry leaders.

Documentation and Data Analysis

A comprehensive review of published aviation education material provided a wealth of information addressing program development, assessment, curriculum, student retention, and content/delivery challenges. National gap analyses, as presented by aviation workforce authors and public sources such as the Texas Comptroller of Public Accounts and the Texas Higher Education Coordinating Board (THECB), were also studied in depth. This research reinforced the facts that the industry is growing and changing rapidly and is dependent on an educated and skilled workforce.

Data prepared by the U.S. Bureau of Labor Statistics and the U.S. Bureau of Transportation Statistics was analyzed to understand aviation employment trends in the U.S. and Texas. By studying specific North American Industry Classification System (NAICS) codes relevant to aviation employment, it was documented that Texas has more than four times the number of aviation jobs than the national average, and that annual wages for aviation employment are consistently 17 percent higher than average U.S. wages.

Understanding how many businesses offer employment opportunities to an educated and trained workforce is an important component of this initiative. NAICS information, as provided by the Texas Workforce Commission, was analyzed for Texas and North Central Texas to show numerous job classifications such as employment projections, numbers of existing jobs that would need to be filled, numbers of estimated new jobs, and estimated wages. Key groupings that were studied included Aerospace Product and Parts Manufacturing, Scheduled Air Transportation, Nonscheduled Air Transportation, and Support Activities for Air Transportation.

In addition to examining the existing industry job market it was also important to inventory the aviation academic programs that currently exist. There are several existing collegiate aviation education programs in the State of Texas that are not accredited by the University Aviation Association nor the Aviation Accreditation Board International (AABI). As aviation education programs are enhanced and developed in North Central Texas, accreditation should be attained



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in order to be competitive with other aviation programs across the nation. In this study, a number of national programs were identified to represent four-year aviation education programs, which are a part of a larger public university system of higher education and should serve as a model for similar programs serving the region. Specific course descriptions and tuition rates were reviewed.

Utilizing the extensive research and databases developed early in the study, two matrices were created; one reflects the industry's projected workforce supply and demand for the State of Texas and one addresses these same projections for the region. The future supply of various types of workers varies somewhat between Texas and the region. Research indicates that there could be a shortage of pilots (airline pilots, copilots, and flight engineers), and aircraft mechanics and service technicians for the State and the region. Projections also indicate that the State may face a shortage of airfield operations specialists, where regionally there may be a greater demand than supply for avionics technicians. Pilots, mechanics, technicians, and specialists make up the largest portion of aviation jobs and shortages are predicted in each of these categories. Moreover, the supply of commercial pilots is projected to meet only 60 percent of the demand.

Referenced Study Reports: Literature Review, Library of Aviation Employers, Aviation Academic Programs, Gap Analysis

Curriculum and Coordination

During the course of the study, it became apparent that three aviation programs were needed by the region; aviation management, aviation flight, and aviation maintenance/technology management. The Recommended Curriculum Report evaluates existing aviation curriculums and provide recommendations. This report includes aviation education research authored by seasoned aviation professors and addresses specific course requirements, course development, program development, program assessment, aviation content delivery, stakeholder issues, program accreditation, industry needs and requirements, and student performance and competency. Curriculums were reviewed for out-of-state schools that include Arizona State University, Purdue University, and the University of Louisiana, Monroe. The report concludes that aviation education curriculums are designed for four-year degrees in aviation management, aviation maintenance/technology management, and aviation flight/professional pilot. It points out that these are meant to be building blocks for a regional program as sufficient curriculum exists currently around the nation and is not intended to be reinvented. The study also recommends that aviation education programs should be accredited by Aviation Accreditation Board International (AABI).

The creation of multiple, integrated programs which support aviation education opportunities in North Central Texas requires cooperation and alliances among educational institutions such as community colleges, universities and independent school districts (ISDs); aviation professional associations, organizations and youth-oriented program providers, and aviation businesses and companies at all levels and in all related fields.

Referenced Study Reports: Recommended Curriculum, Program Coordination



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Outreach

Three focus groups were conducted to gain insights into the needs and concerns of individuals interested in aviation employment. These groups were the basis of the public outreach portion of the study as they reflected local student opinions. Findings overwhelmingly support the tenet that an affordable, comprehensive aviation education program is important to sustain the industry's economic vitality and employment opportunities in North Central Texas.

The successful implementation of this initiative and its ultimate strength depends, to a great degree, upon community awareness of and participation in the integrated education program offerings. The initiative must be branded so that the public—and in particular potential students—recognize its significance. Coupled with study graphic elements designed specifically for the study, a theme becomes the marketing slogan that should be applied to all materials, especially those on the internet and with interactive capability. The study's research confirms the need for utilizing the internet throughout the outreach program and marketing campaign. Such websites should be promoted, and consideration should be given to blogs and social media such as *Twitter*. Brochures, public service announcements, and outdoor and sports venue signage are also strong marketing tools.

More than just outreach slogans and materials, there are numerous programs and coordination efforts that should be applied to increase general awareness; some of which include helping students find their way through career paths so it is easy to navigate the steps to an ultimate career. This study has outlined such career paths and will seek to share these in a way that is easy to view and understand. There are many paths that lead to a successful aviation career. Education plays an important role in achieving success but, more importantly, an education appropriate to the aviation industry empowers the student/graduate to gain entry into their desired career field.

Another important part of the outreach component of the study is the development of a Speakers Bureau. This will serve as a listing of topical speakers that would support the initiative's overall outreach program. Categories presented within the directory are industry representatives, educators, aviation association spokespersons, and workforce development specialists. These speakers will be available via the web for contact throughout the region for speaking engagements to young students.

Exposure to aviation activities at an early age is important in stimulating children to think about a career in an aviation field. The study provides a compilation of education and outreach resources including the Federal Aviation Administration, Aircraft Owners and Pilots Association, National Business Aviation Association, National Association of State Aviation Officials, Civil Air Patrol, Texas Department of Transportation Aviation Division, Texas Transportation Institute, Experimental Aircraft Association, National Agricultural Aviation Association, National Coalition for Aviation Education, and the Organization of Black Airline Pilots.

Having established that significant resources are available to primary and secondary teachers and guidance counselors, the focus must be on the delivery of a strong aviation career message to students. Systems that should be utilized include dual credit programs, magnet schools, STEM (science, technology, engineering and math) programs, after school activities for younger children, career and technical education, and extracurricular events and activities.



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Men and women who have served or are serving in the various branches of the military are likely to have received training and unique skills that provide a solid foundation on which they can build if they choose to pursue career opportunities in aviation. Aviation career and education materials should be made available to transition and education counselors at NAS Fort Worth JRB and veterans service organizations. In fact, NCTCOG with its aviation education partners, should host a veterans information conference where universities and colleges could actively recruit persons with military backgrounds who are in a position to benefit from the GI Bill. In addition, the schools which are involved in the integrated aviation education delivery system should implement “military friendly” guidelines.

Referenced Study Reports: Public Outreach Plan, Primary and Secondary Recommendations, Career Paths, Military Outreach

Next Steps

North Central Texas has numerous assets and strengths which should be applied to the development of an integrated aviation education program. Aviation programs already exist at the University of North Texas (UNT) Denton, Tarrant County Community College (TCC), Mountain View College (MVC), and Paris Junior College. Other prominent state schools with science and engineering degree programs are the University of North Texas (UNT) Dallas, the University of Texas at Arlington (UTA), and the University of Texas at Dallas (UTD). Programs in several secondary schools serve as models for introducing high school students to aviation careers including Skyline High School in Dallas, Dunbar High School in Fort Worth, DeSoto High School, Coppell High School, and Martin High School in Arlington. Because of the region’s strong economy, the airport system is well-developed and provides training for pilots. Given the on-going improvements in the area’s ground transportation systems, some basic connections to colleges, universities, and trade schools exist.

Program sponsors and coordinators should be mindful of certain existing situations and conflicts, including the strong attraction of well-established aviation degree programs at out-of-state schools. There also exists the competition among area universities for students, faculty, grants, academic areas of excellence, and Tier One status for research funding. Community colleges traditionally have not had strong interaction with four-year universities and public school systems. Industry has indicated a reluctance to partner with ISDs, and transition services for men and women with military experience are inadequate.

A non-profit organization, should be created by the leadership of the region’s aviation industry, in cooperation with NCTCOG and with the support of the area’s institutions of higher learning and workforce development proponents. Through its non-profit status, contributions and corporate gifts can be tax exempt. The foundation should assume responsibilities for maintaining and expanding, as appropriate, the integrated aviation education program that is the result of the NCTCOG initiative. Board members should include industry leaders and representatives of colleges, universities, chambers of commerce, and economic development entities as well as the Commander of NAS Fort Worth JRB.

Because the costs of establishing an aviation education program from the ground up can be staggering, the benefit of taking a regional approach to program development and implementation lies in the ability to share resources and to identify creative applications utilizing these resources toward a common goal. UNT’s new aviation logistics degree program is



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estimated to cost approximately \$1.2 million over a five-year period. Initial costs of a flight program could be about \$2.5 million, with annual average costs of \$275,000. Because of these high start up costs, it is recommended to develop partnerships with private flight schools at General Aviation airports that could significantly reduce these costs.

The North Texas Aviation Education Initiative requires unique relationship building and immediate actions for success. This study outlines a timeline for activities that should occur for the initiative's implementation, over a 24-month period beginning in January of 2010.

Referenced Study Reports: Strategic Business Plan

Conclusion

In conjunction with study products, the success of the North Texas Aviation Education Initiative recommendations depend on connections, collaboration and cooperation. All parties—academia, the aviation industry, and economic development forces—must move ahead in an integrated and cohesive manner, taking immediate and incremental steps that build a foundation that will sustain the future. This involves using study deliverables as a roadmap for working together and putting measures in place to ensure that goals are met. All parts of the aviation industry, academic institutions, and others will need to play a role and fill niche segments as part of a comprehensive aviation system.

There are many approaches to fulfilling these outlined recommendations and no one method may be better than another. However, it is imperative that the most viable option is to move forward with a cooperative and collective goal that will put North Texas in a position to be a leader in the aviation industry for the future.

For additional information and resources about all of these subjects, please refer to each of the reports referenced below each section and summarized above. All final study deliverables are available at the Aviation Education Initiative webpage at www.nctcog.org/aviationeducation and will be distributed via CD.