



Oklahoma Aerospace & Defense 2021 Strategic Plan

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State of Oklahoma Aerospace & Defense Today

Oklahoma boasts a robust legacy in space, aviation (together known as aerospace), and defense. For over 70 years, the state has played host to what are now some of the largest military and commercial aircraft maintenance, repair, and overhaul (MRO) centers in the world; Tinker Air Force Base (AFB) in Oklahoma City and American Airlines Technical Operations in Tulsa. The manufacturing labor base to support these operations has historically accounted for most of Oklahoma's growth in the aerospace and defense (A&D) industries; particularly surrounding the two major metropolitans.

Existing public policy and tax laws are favorable to business, especially in the A&D industry. Our attractive cost of living, vibrant cities, open spaces for flight test, and favorable weather climate make it an ideal location for growth of the state's second largest industry. Oklahoma remains an extremely competitive and attractive state for manufacturing-heavy operations. It is from this position the state will grow the A&D industry to the number one economic engine.

Moving forward, it is critical the state's strategy pivot to establishment and development of cutting-edge technologies that can take root and grow here. Leveraging the workforce, resources, and inherent attractiveness, Oklahoma will build on its aviation legacy to become a nation-leading incubator for technology innovation in A&D, attracting startups and larger companies to the state.

Basis for Strategy

The state's A&D industries are vast and highly complex. In order to maximize efforts, the Aerospace & Defense team is focusing on 4 broad-based objectives that are designed to provide the greatest return. These strategic pillars provide the basis for our states' A&D strategy:

1. Provide the infrastructure to recruit, educate, and train the workforce needed to sustain and grow the aerospace industry within the state.
2. Create an environment to attract startups of advanced technologies that are interwoven and connected to one another. (additive technologies, batteries, electric propulsion, commercial space, unmanned systems)
3. Develop a university-led innovation cluster to support the aerospace and defense industry of the future.
4. Position Oklahoma to be the center of excellence for the aviation engine sustainment enterprise.

Workforce

Any notion of expanding the Oklahoma A&D industry begins with the need to provide employers with a properly trained, educated, and capable workforce. To effectively grow the aerospace industry is to expand the servicing workforce. This will require effective coordination and standardization between higher education and technical training providers at all levels.

One element of this expansion involves the need for properly trained and skilled mechanics, especially those with Airframe and Power Plant (A&P) licenses and certification in skilled subsets of this license (Sheet Metal, Composites, avionics, etc.) This requires continued expansion and standardization of the state's vocational training capabilities supporting the industry.

A second element of training and educating is a properly qualified and sized professional degreed workforce, specifically in multiple engineering, cybersecurity, and software disciplines. Greater use of internship/apprenticeship programs can aid in this area as can a continuous adjustment of degree offerings to meet changing industry needs.

Finally, there are complementary disciplines that need to expand if the state's aerospace industry is to continue to grow. These include, but are not limited to, logistics management, information technology & management, contract management, advanced materials manufacturing & repair, and industrial facilities support. The training and education infrastructure needs to adjust in order to accommodate these ever-changing requirements in the A&D industry.

Advanced Technologies

The A&D ecosystem is undergoing a technology transformation driven by electric propulsion, batteries, automation, software, data, and other innovations. The sub-sectors of A&D benefiting most from this must be the state's primary targets. This includes additive technologies, electric flight, Urban Air Mobility (UAM), autonomous vehicles, and commercial space. To be competitive in the pursuit of innovators, the A&D team has adopted an approach of recruiting high-potential start-up companies. Attracting new aerospace and defense technology pioneers into Oklahoma will catapult the state to the forefront of the cutting-edge technology development that is driving the modern economy and society.

Success in the state's efforts to recruit these startups will require a coordinated campaign of our intent to become the nation's leader in advanced tech incubation and development. Constant communication among executors of public resources, private capital, state academic research institutions (strategic pillar #3), and existing supply chain providers will result in increased situational awareness to coordinate tactical execution of key additions to the A&D sector.

Continued evaluation and improvement of the state's value proposition as the nation's premier incubator is critical and must be executed by all stakeholders on a rhythmic cadence to identify new opportunities.

Innovation Cluster

Innovative activities – and their commercial applications – are driving long-term economic growth in America. While the industry energizes innovation through research and development (R&D) initiatives, the main catalyst that fuels this growth lies where it started: the American research university. As information exchanges open between academic, government, and industry researchers – as opposed to previous models – more commercially-attuned knowledge exchange is shared. This leads to a rise in entrepreneurial success and economic impact. University research funding can support the creation of both middle and high-skill industry jobs through innovation, commercialization, and technology transfer. As products and services are created and licensed, multiplier impacts will be felt across the economy.

In the 21st century, public and private research universities are the “seed capital” for creating knowledge that fosters scientific- and technology-based economic development. Yet there are key underpinnings required to promote success in knowledge-based economic development: creating the highly trained workforce that industry requires (strategic pillar #1) and capitalizing on research by converting it for private-sector consumption.

To be successful in the state’s mission of creating long-term growth and economic prosperity, Oklahoma must ensure our research universities closely align their capabilities with the requirements of the state’s major Department of Defense installations, that they remain competitive in terms of university-developed IP and that there is a clearly defined path to streamlined tech transfer.

Engine Sustainment

To expand Oklahoma aerospace, the central role the state already plays in engine sustainment should be further developed and exploited. Oklahoma provides a highly competitive cost basis for companies seeking to do business with the Air Force Sustainment Center and American Airlines’ Maintenance Base. The A&D team will demonstrate the cost-effectiveness and benefits of collaboration when relocating to Oklahoma. These benefits include increased USAF engagement, better access to commercial engine MRO, engineering technical support as well as more engine component manufacturing and repair which is largely done in facilities outside of Oklahoma.

Oklahoma’s competitive labor rates and low cost of doing business provide these companies with a lower cost basis on which to compete for future sustainment contracts. Oklahoma will strive to be recognized as the destination for engine support and sustainment activities – the global propulsion center of excellence.

Summary

Against this backdrop, Commerce’s A&D team continues to take aggressive action to expand what is already the state’s second largest, and fastest growing, economic sector, capitalizing on the robust industrial base, strategic location and favorable business environment. While the four pillars outlined above form the main focal points for this strategy, they should not be viewed as a limitation to the Aerospace & Defense program scope or the state’s sole aerospace industry development efforts. The A&D team is concerned with expanding all facets of aerospace and defense within the state. Therefore, this effort will be broad-based and inclusive by nature, pursuing all opportunities for industry growth within the state.