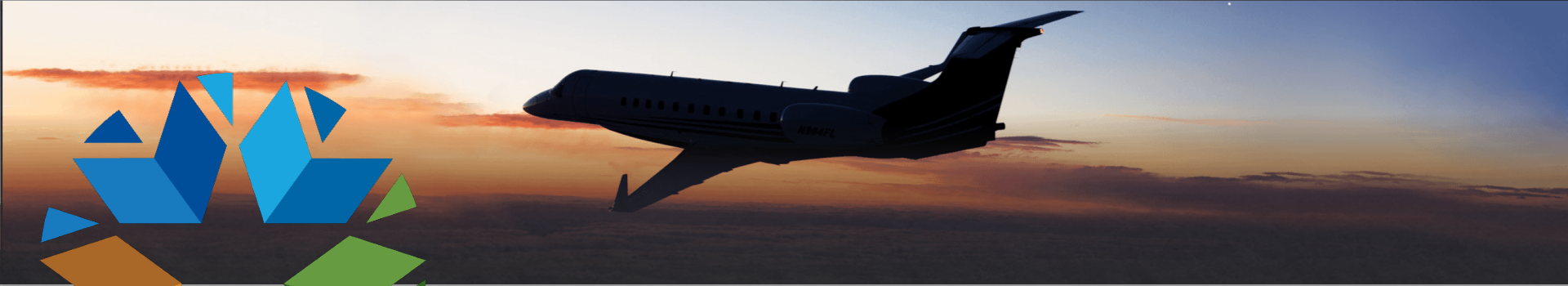

Oklahoma Aeronautics Commission

UAS and AAM Program Update

Doug Wood
UAS Program Manager

Introduction

On May 5th, 2021, Governor Stitt signed Senate Bill 659 which created the Unmanned Aircraft Systems Development Act of 2021. The Act establishes the Oklahoma Aeronautics Commission as the clearinghouse for unmanned aircraft systems (UAS) in the State and designates the Commission as the lead agency to promote, enhance, develop, and ensure safety of UAS.

This follows Senate Bill 1688, signed into law in 2020, which created the Oklahoma Advanced Mobility Pilot Program at the Oklahoma Department of Transportation. It directed the Oklahoma Secretary of Transportation to appoint a nine-member Advanced Mobility Program Advisory Council to provide recommendations on policy and regulatory issues related to the adoption of advanced mobility technologies.

OKLAHOMA ADVANCED MOBILITY ADVISORY COUNCIL

Secretary Tim Gatz – Chairman

Industry

- James Grimsley, Choctaw Nation, Oklahoma Transportation Commissioner for District 2
- Gary Ambrose, Acorn Growth Companies
- Steve Findley, Kratos

Academia

- Jamey Jacob – Oklahoma State University, Director, Unmanned Systems Research Institute.
- Jim Roth, Oklahoma City University, Dean of OCU Law School
- Tyler Moore, Tulsa University, Chair of Cyber Studies, Tandy Professor of Cyber Security

Government

- Grayson Ardies, Director, Oklahoma Aeronautics Commission
- Vacant – Oklahoma Center for the Advancement of Science and Technology
- Vacant – Oklahoma Department of Commerce

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Oklahoma is #1

MERCATUS CENTER
George Mason University

TABLE 1. STATE RANKINGS

Overall Rank		Overall Score
1	Oklahoma	74
2	North Dakota	70
2	Arkansas	70
4	Arizona	68
5	Minnesota	66

Brent Skorup, *Mercatus Center*

Currently, the best place for drone commerce to grow is Oklahoma, according to Skorup's methodology. "They do a lot of things right," Skorup told POLITICO, adding that the state already has a drone program office up and running (that is within the Oklahoma Aeronautics Commission) and with more than 1,000 square miles of tribal land courtesy of the Choctaw Nation dedicated to drone services testing. States coming in behind Oklahoma are North Dakota and Arkansas tied for second, then Arizona, Minnesota and North Carolina.

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Oklahoma is ranked #1 in the Nation regarding State Readiness for Drone Commerce.

Why Create a Report Card?

Avoid litigation over air rights, trespass, privacy, etc.

Accelerate federal-state regulator collaboration over drone policy.

Depict a framework for drone corridors in 5-10 years.

Assist overstretched state legislators and state aviation offices.

-Brent Skorup

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George Mason University

What are the 6 Factors?

Airspace lease law (30/30 points)

Avigation easement law (0/25 points)

Task force or program office (20/20 points)

Law vesting landowners' air rights (10/10 points)

Sandbox (10/10 points)

Jobs estimate (4/5 points)

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What is an Avigation Easement?

Permissive airspace use. Many states provide:

> **Flight in aircraft over the lands and waters of this State is lawful, unless at such a low altitude as to interfere with the then existing use to which the land or water, or the space over the land or water, is put by the owner....**

Uniform State Law for Aeronautics

-Brent Skorup

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Oklahoma does not have a similar law.

What are the next steps?

The Mercatus Study makes it clear Oklahoma currently has the advantage, but other states are investing heavily in reaching Number 1.

- **North Dakota has invested $48 million in a Statewide UAS Network**
- **North Carolina has invested $5 million in AAM system design and development**
- **Virginia has invested in the Virginia Advanced Air Mobility Alliance (VAMA)**
- **Ohio has invested over $15 million in Defense, Research, and Infrastructure**

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Oklahoma needs to Invest

Tulsa EAD Grant

Tulsa coalition recently received $38.2 million from the U.S. Economic Development Administration for the Tulsa Regional Advanced Mobility (TRAM) Corridor.

(INCOG, TIL, Tulsa Ports, OSU, Osage LLC, City of Tulsa, Partner Tulsa, & Tulsa Regional Chamber)

The TRAM Corridor proposed four projects to attract and support growth in the advanced mobility space in Tulsa. The four projects are:

- Establishing a 114 nautical mile, Beyond Visual Line of Sight (BVLoS) commercial flight corridor
- Increasing R&D activity in the region by opening the LaunchPad Research and Technology Center located at Oklahoma State University-Tulsa, focused on developing new technologies to meet rapidly-evolving industry needs in the advanced mobility sector
- Increasing the region's skilled workforce through the funding of certificate programs, degree programs, and apprenticeships as well as the development of a Labor Market Observatory to consistently track and align the needs of the Advanced Mobility industry to the region's talent
- Constructing a new industrial treatment facility that will treat over 4 million gallons per day of wastewater to make 2,200 acres of industrial property "pad-ready" to attract advanced mobility industries to the Tulsa Port of Inola

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Statewide Effort

Emerging Aviation Technology Subcommittee

Advanced Mobility Council's Emerging Aviation Technology Subcommittee

Sister group to the Autonomous Vehicles Steering Committee

15 Members

6 Meetings

"Wisk Aero LLC."

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Emerging Aviation Technology Subcommittee

Three educational/research members

- Ken Carson – OU Department of Aviation
- Victoria Natalie – Dir. Eng. Ops. OSU USRI
- Marc Hartman – Aviation Operations Manager at Choctaw Nation of Oklahoma

Four UAS/AAM members (can be from education, industry, or government sectors)

- Kraettli Epperson – CEO Vigilant Aerospace
- Daniel Plaisance – Project Manager Tulsa Innovations Lab
- David Zahn – NASA / Mike Monroney Center – Blackhawk Pilot
- Ethan Clark – Vertical Aerospace – Director Technical Sales

Two aviation infrastructure members

- Keston Cook – Enid Airport Director
- Craig Mahaney – Exec. Dir. UAS Cluster Initiative (Former Air Traffic Controller / FAA)

Two local government members

- Teira Cole – SpecOps Manager, Fires Innovation S&T center and FISTA Board member
- Jared Schwennesen – ODOT – Multi Modal manager

Four aviation/aerospace industry members (non-UAS/AAM field)

- Maj. Kinsley "Trigger" Jordan – USAF Pilot, Innovation strategist CSAFs Strategic Studies Group Innovation team - Morpheus
- Chris Billings – Co-Founder Duncan Machine Products and 5B Aviation
- Todd Pauley – Director Government Operations., Boeing
- CW5 (Ret) Nathaniel "Nate" Jones – Raytheon Technologies, FIRES Innovation S&T Center

Emerging Aviation Technology Subcommittee

Primary goal is to determine where to place Oklahoma's bets in planning for the future.

- What success looks like and how its measured?
- What areas Oklahoma can take a leadership role in?
- Focus on what other states are already doing, or do we try and anticipate the future?
- Legislative and Regulatory issues at the State and Federal level?
- Investing in infrastructure, Workforce Development, Industry Incentives?
- How do we successfully integrate UAS/AAM into the national airspace?

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5 years ago AAM was really only PowerPoint presentations and visions of the future. In 2022, **The future is now**, but still evolving, and every state is racing to be the leader.

Beyond Visual Line of Sight ARC Report

UNMANNED AIRCRAFT SYSTEMS
BEYOND VISUAL LINE OF SIGHT
AVIATION RULEMAKING COMMITTEE

MARCH 10, 2022

FINAL REPORT

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ARC General Information

The FAA is the only branch of the Federal Government that can conduct an ARC or Advanced Rule Making Committee made up of Stake Holders: Industry members and regular citizens, to provide input into the Federal Rule Making Process.

There were 87 Participating Organizations made up of 180 individuals who participate in the ARC.

Two phases:

1) Break the effort into “chunks” that could be addressed by smaller sub-groups
2) Specific Rule Making Recommendations

Then returned to the full group.

“75% Agreement of All Recommendations”

ARC Objectives

The UAS BVLOS ARC's purpose is to make recommendations to the FAA for performance-based regulatory requirements to normalize safe, scalable, economically viable, and environmentally advantageous UAS BVLOS operations that are not under positive air traffic control (ATC). The ARC's recommendations should support the following concepts of operation: long-line linear infrastructure inspections, industrial aerial data gathering, small package delivery, and precision agriculture operations, including crop spraying. The ARC was not tasked with addressing aircraft or operations carrying passengers or crew, nor did it address the integration of operations for which Air Traffic Services (ATS) are provided.

"Acceptable Level of Risk"

ARC Recommendations

Safe BVLOS integration into the National Air Space has long been the key to opening the door to package delivery, extended range infrastructure inspections, and improved public safety operations among other uses of UAS, so these recommendations have been highly anticipated by the UAS community.

Summary of 5 broad recommendations:

1) Acceptable Level of Risk

The ARC recommends that the FAA set an acceptable level of risk (ALR) for UAS that is consistent across all types of operations being performed. The ARC envisions that this approach will allow the FAA to adopt a common and consistent set of regulations and guidance, giving operators the flexibility to meet the ALR through qualitative or quantitative methods, or a hybrid approach.

2) Modify Right of Way Rules

The ARC recommends a series of modifications to the right of way rules in Low Altitude Shielded Areas (within 100' of a structure or critical infrastructure as defined in 42 U.S.C. § 5195c)2 and in Low Altitude Non-Shielded Areas (below 400') to accommodate UA operations. Specifically, the ARC recommends several amendments to 91.113 to:

- allow automatic means for see-and-avoid responsibility;
- give UA right of way in Shielded Areas;
- give UA right of way over crewed aircraft that are ***not*** equipped with ADS-B or TABS in Non-Shielded Low Altitude Areas; and
- give crewed aircraft that are equipped with ADS-B or TABS (and broadcasting their position) right of way in Non-Shielded Low Altitude Areas.

3) Additional Part 107 certification ratings

The ARC recommends an approach to operator qualification that would extend Part 107, Remote Pilot Certificate with Small UAS Rating, to cover topics associated with Extended Visual Line of Sight (EVLOS) and shielded UAS operations…(which) creates a new Remote Pilot certificate rating to cover BVLOS operations…

4) UAS Risk Qualification

The ARC recommends that the FAA establish a new BVLOS Rule which includes a process for qualification of UA and UAS, applicable to aircraft up to 800,000 ft-lb of kinetic energy (in accordance with the Operation Risk Matrix for light sport aircraft).

-Photo courtesy Airwise Solutions

5) Third Party Services

The ARC recommends that the FAA adopt a non-mandatory regulatory scheme for third party services to be used in support of UAS BVLOS operations.

Important for allowing primarily Small UAS Operations but scalable for larger pilotless aircraft.

Small - Oil/Gas pipeline inspections, Public Safety Operations, Agriculture, package delivery etc.

The Report – A Summary

The Report is 391 pages.

Probably one of the largest ARC efforts in recent memory for a new and emerging technology.

It has the potential to push change on the FAA and the Aviation industry not seen since the advent of Jet Propulsion.

Its also the pre-cursor to the next evolution – Advanced Air Mobility

Questions?

"Courtesy of Joby Aviation. (c) Joby Aero, Inc."

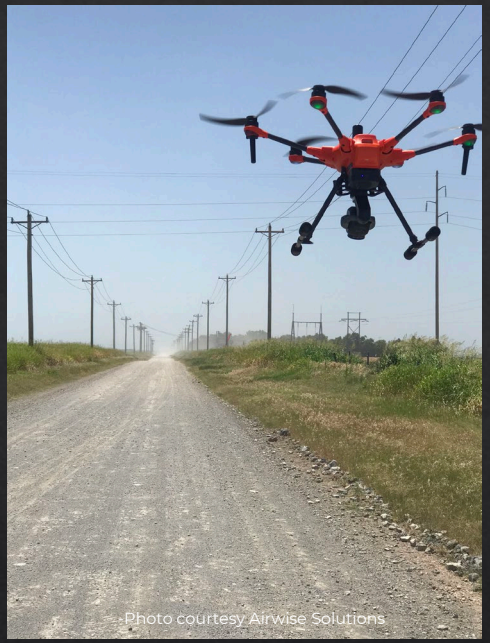

Photo courtesy Airwise Solutions

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