Photo Courtesy of NBAA.org

AAM Advanced Air Mobility

PLANNING AND INTEGRATION OF ALTERNATIVE FUELED AIRCRAFT IN KENTUCKY AIRSPACE

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What is AAM?

AAM, in its simplest definition, is widely accepted as the acronym used to describe a new generation of smaller 2-4 person aircraft that are typically advanced in their manufactured process utilizing lightweight composite materials such as Carbon Fiber, Glass Fiber Reinforced Polymers, Ceramic Epoxy systems …etc.

AAM aircraft primarily differentiate themselves by their use of alternative power sources such as electrical batteries, combined hybrid forms of fossil fuels and electricity, hydrogen fuel cells, or hydrogen combustion engines.

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What is the difference between AAM and other traditional aircraft and helicopters?

AAM aircraft are divided into two categories, cVTOL and eVTOL.

eCTOL AAM aircraft takeoff & land using a runway like a Conventional aircraft with wings.

eVTOL AAM aircraft takeoff and land Vertically like a helicopter with rotor blades.

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Are AAM aircraft better?

AAM aircraft because of their alternative fuel source, primarily electric batteries, are much quieter than a conventional aircraft or helicopter. This attribute helps communities be more receptive to the thought of increased operations in populated areas.

The multiple rotors of the eVTOL aircraft and simplicity of the electrically driven propulsion system make for a much safer design with minimal moving parts. Redundancy of the independently driven rotors also allow for safe landings with a rotor(s) inoperative or damaged.

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What are the potential applications for AMM?

Because of the quiet operation and relatively safe operational characteristics, AAM aircraft are considered as a next generation of aircraft replacement for many of the current aircraft applications in both urban and rural areas.

Applications can include but are not limited to; air-taxi transportation similar to Uber and Lyft, regulated flight infrastructure to and from commercial service airports, EMS, medical supply services, Search and Rescue, law enforcement applications, personal transportation…etc.

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Are there AAM aircraft flying in the skies now?

As of 2025, there are no AAM eVTOL aircraft certified in the US but there are isolated experimental AAM aircraft flying in controlled environments.

China has developed the only certified and operational eVTOL aircraft in the world. It is autonomously operated and in limited application in China.

There are over an estimated 1,000* entrants currently in development within the AAM industry worldwide with approximately 12,000 advanced orders for AAM aircraft.

* https://aamrealityindex.com

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What is needed to be ready for AMM?

There are different schools of thought on the preparation that may be needed for integrating AAM into the FAA airspace and network of the National Plan of Integrated Airport systems (NPIAS) airports around the country. While the level of speculation and detail in pre-planning is only limited by one's imagination, the reality is that no special landing areas or runways are currently needed for AAM aircraft.

AAM aircraft can currently land, vertically or conventionally, at any one of Kentucky's Public-use airports.

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What can Kentucky do now to better prepare?

The missing component of the airport system that limits an AAM operator from operating or basing an AAM aircraft at an existing Kentucky airport is the lack of an on-airport charging system for electric AAM aircraft.

However, there are many different charging systems currently in development within the industry and each AAM aircraft has its own separate technical requirements.

KDA is taking a fiscally conservative approach to installing 3 Phase electrical infrastructure and chargers within the 58 Kentucky NPIAS Public-use airports.

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What can Kentucky do now to better prepare?(Con't)

Based on the AAM developers in the U.S. who are closest to having a certified aircraft, their chargers cost approximately $1.20 million each, not including the required 3Φ power infrastructure which can be anywhere from $300,000 to $500,000 per site.

To install a charger at just a small fraction of the 58 Kentucky airports would consume the entire $18 million annual budget of KDA. A budget that is designed to maintain the safety of pavements and infrastructure for the Kentucky system of existing federally supported NPIAS airports.

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What can Kentucky do now to better prepare?(Con't)

The Kentucky Dept of Aviation (KDA) is actively working with multiple airports and AAM manufacturers to identify business applications and potential airport sites.

KDA, in partnership with Ohio DOT, is applying for the FAA eVTOL Integration Pilot Program (eIPP) that will help emerging manufacturers, the FAA, and state governments, effectively integrate AAM corridors in the US airspace.

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What can Kentucky do now to better prepare?(Con't)

Until the industry can produce a certified aircraft that is legal to fly, the operational infrastructure needs of those aircraft are defined, business models for public use applications are presented, and the FAA has developed any special rulings of AAM operation, it is difficult to strategically proceed in the planning process with any level of confidence.

A tactical approach with specific business cases as they present themselves, appears to be a more fiscally responsible path in an environment of limited funding.

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Does KDA have any other current initiatives?

1) Since 2024 KDA has been a member of and participates in the National Association of State Aviation Officials (NASAO) AAM Multi-state Collaborative that is made up of over 34 state aviation agencies. The goal of the collaborative is to harmonize state efforts with the FAA and the industry through four key objectives; Policy Harmonization, Develop and Define Minimum Viable Infrastructure, Develop Approaches for Sustainable Funding, and Develop a Roadmap for States to Integrate AAM into their State System Plan.

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Does KDA have any other current initiatives? (Con't)

2) Another ongoing initiative from 2024 is the joint Ohio, North Carolina, and Kentucky partnership operating on a $500,000 Appalachian Region Commission Grant to identify electrical charging infrastructure needs of GA Regional Airports that serve rural communities.

In 2025 the project moved to Phase II and we are in the selection process of economically distressed and at-risk counties and airports who will be eligible for federal grants to install 3-phase infrastructure and purchase electric aircraft for flight training.

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Does KDA have any other current initiatives? (Con't)

3) KDA is also in work on an initiative to install 3 Phase (Level 2-3) chargers at three Kentucky airports that currently operate flight schools.

This initiative is to attract potential operators of the Pipistrel Velis Electro, currently the only certified Electric Light Sport aircraft in the world, to Kentucky for the purposes of flight training aspiring pilots more cost effectively.

Flight training with electrically powered aircraft can be accomplished at approximately 25-30% of the hourly operating cost of conventionally powered aircraft.

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If you have questions or suggestions for potential Kentucky AAM opportunities, please contact us:

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