

U.S. Policy Trends on Advanced Air Mobility: Part 4

~ Final Rule of the Powered-Lift SFAR, Revision of the Vertiport EB, Selection of the CAAT Operating Entity, and Direction to Establish the eIPP ~

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1. Overview

In October 2024, the Federal Aviation Administration (FAA) published a final rule¹⁾ on pilot certification and flight standards for powered-lift^{Note 1)} aircraft, following the issuance of a Notice of Proposed Rulemaking (NPRM) in June 2023²⁾. The FAA then released an updated version of its guidance on vertiports (airfields for vertical takeoff and landing)³⁾ in December 2024. In April 2025, the FAA announced the selection of the operating entity for the Center for Advanced Aviation Technologies⁴⁾, which was mandated by the FAA Reauthorization Act of 2024⁵⁾ and enacted in May 2024. Furthermore, an executive order issued in June 2025⁶⁾ directed the establishment of an eVTOL Integration Pilot Program.

This report provides an overview of these recent U.S. government policy developments related to Advanced Air Mobility (AAM).

2. Final Rule of Pilot Certification and Flight Standards for Powered-Lift

As mentioned in the previous report⁷⁾, an NPRM was issued by the FAA in June 2023²⁾ which proposed regulatory revisions regarding pilot certification, flight standards, and other aspects for powered-lift aircraft, particularly those operated under AAM concepts. The FAA Reauthorization Act of 2024⁵⁾ required the issuance of a final rule within seven months of the law's enactment (May 2024). The NPRM proposed permanent amendments to certain parts of the Federal Aviation Regulations (Title 14 of the Code of Federal Regulations: 14 CFR) and suggested temporary amendments through a Special Federal

Aviation Regulation (SFAR) for areas where the FAA would need to collect data and understand the necessary changes before implementing permanent revisions. Since the proposed amendments through SFARs covered multiple parts of the Federal Aviation Regulations, the proposed changes were to be consolidated under the newly established Part 194, with a planned validity period of 10 years after the amendments were made.

Subsequently, a revised final rule, incorporating comments and feedback on the proposed amendments, was published on October 22, 2024¹⁾ (with its publication in the Federal Register on November 21, 2024⁸⁾). Then, on January 3, 2025, a correction was made to remove a duplicate table and fix other clerical errors⁹⁾. On March 11, 2025, the enforcement of the amended regulations was postponed to March 20, 2025¹⁰⁾. The final rule includes many changes from the NPRM's proposed amendments, with the following being some key examples of those changes.

- At the time of the proposed amendments, 50 hours of pilot-in-command flight time in a powered-lift was required when applying for a commercial pilot certificate with a powered-lift category rating based on 14 CFR 61.129(e)(2)(i). However, based on the comments submitted in response to the NPRM, the final rule introduced a new section, 14 CFR 194.216, which allows for a reduction of the required pilot-in-command flight time to 35 hours. Additionally, up to 15 hours of this 35-hour requirement may be credited with experience in a Level C or higher full flight simulator.
- The proposed rule required dual controls for powered-lift aircraft to meet the flight training requirements of

14 CFR 91.109. However, the final rule, under 14 CFR 194.253, stipulates the following: (1) flight training can be conducted with a powered-lift aircraft that has a single set of flight controls accessible by both student and instructor (e.g., a throwover control); (2) under the conditions set forth in Appendix A of Part 194, all flight training for a powered-lift aircraft with single controls and a single pilot station may be substituted with training in a Level C or higher full flight simulator (with solo flights and other specific flights conducted in the actual aircraft); (3) the final rule also provides deviation authority to allow the use of powered-lift aircraft without fully functioning dual controls for flight training (based on future demonstrated advancements in technology).

- At the time of the proposed rule, the FAA, considering the limited operational history of powered-lift aircraft, determined that applying the airplane rules for operational requirements was, in most cases, the safer approach. However, based on comments submitted in response to the NPRM, the FAA has since concluded that applying rotorcraft rules may be appropriate in certain cases. For example, the proposed rule required powered-lift aircraft to meet the fuel reserve requirements for VFR (visual flight rules) conditions, specifying fuel amounts that would allow for 30 minutes of flight during the day and 45 minutes at night, as specified in both Part 91 (General Operating and Flight Rules) and Part 135 (Commuter and On-demand Operations) for airplanes. However, the final rule allows powered-lift aircraft with the performance capability to land in the vertical lift flight mode along the entire flight route to meet the same fuel reserve requirements as rotorcraft (20 minutes of flight for both day and night) under Part 91 and Part 135. Furthermore, for Part 135, deviations from the regulations may be now allowed if it is determined that safe operations can be conducted on specific routes with predetermined suitable landing areas.

In connection with this amendment, the FAA issued Advisory Circular (AC) 194-1, Powered-Lift Operations¹¹⁾

on October 7, 2024, and AC 194-2, Pilot Training and Certification for Powered-Lift Operations¹²⁾ on November 21, 2024. AC 194-1 provides specific guidance on the operational aspects of powered-lift, including the applicability and means of compliance for specific regulations under Part 43 (Maintenance, Alterations, etc.), Part 91, Part 97 (Standard Instrument Procedures), Part 135, and Part 136 (Air Tour Management), including those referenced from Part 194. Similarly, AC 194-2 details the pilot certification and training requirements for powered-lift aircraft, including those specified in Part 194. This includes specifics on experience requirements and provides examples of logbook and training record endorsements.

3. Revision of Guidelines for Vertiports

As mentioned in the previous report⁷⁾, the FAA was required to issue an updated version of Engineering Brief (EB) No. 105, Vertiport Design, by December 31, 2024, under the FAA Reauthorization Act of 2024. Following the Notice of availability, notice of industry day meeting, and request for comment issued on September 16, 2024¹³⁾, regarding the proposed amendments, EB No. 105A, Vertiport Design, Supplemental Guidance to Advisory Circular 150/5390-2D, Heliport Design³⁾, was published on December 27, 2024.

The main changes in EB 105A compared to EB 105 are as follows:

- **Infrastructure Classification:** Vertiports are classified as a type of heliport, with this EB positioned as a guidance document for vertiports serving aircraft with three or more propulsors, supplementing AC 150/5390-2D for heliports serving helicopters with single, tandem, or dual rotors.
- **Marking:** Vertiports are distinguished with the addition of a “VTL” marking on the TLOF (touchdown and liftoff area) (Figure 2).
- **Geometric Design of the Landing Area:** In addition to the controlling dimension (D), defined as the diameter of the smallest circle enclosing the entire VTOL aircraft projection on a horizontal plane, including all possible configurations with rotors/propellers turning,

if applicable, the Rotor Diameter (RD) is defined as the diameter of the smallest circle enclosing all the lift producing propulsion units on a horizontal plane, while the aircraft is in the vertical takeoff or landing configuration, with rotors/propellers/fans turning, if applicable (Figure 1). The TLOF and FATO (final approach and takeoff area) are now defined based on RD rather than D, and the size of the Safety Area has been reduced (Figure 2).

- **Parking Area:** A new section on VTOL aircraft parking has been added, establishing larger parking areas that accommodate not only ground taxiing but also air or hover taxiing.
- **Downwash and Outwash Caution Area:** A downwash/outwash caution area (DCA) has been added to designate areas where wind speeds of 34.5 mph (55.5 km/h) or greater, which could potentially impact the safety of the vertiport, may occur due to downwash (downward airflow created by the propulsion units producing lift in vertical flight) and outwash (horizontal airflow resulting from the downwash hitting the ground) (Figure 3).

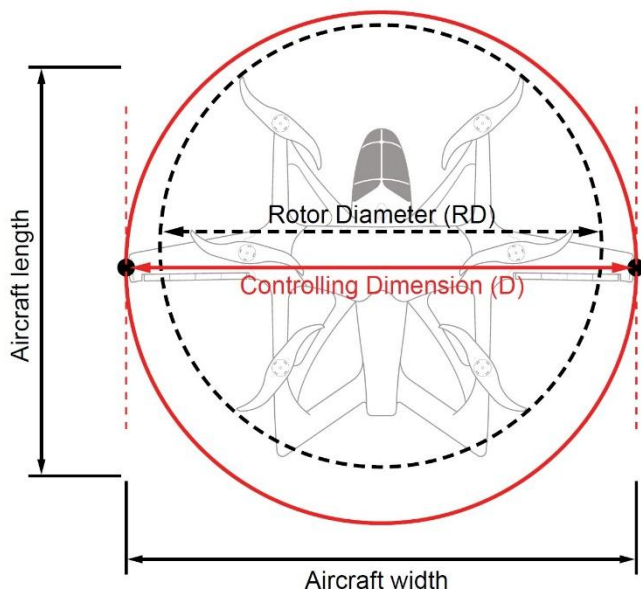


Figure 1: Controlling Dimension (D) and Rotor Diameter (RD) (excerpt from EB 105A)

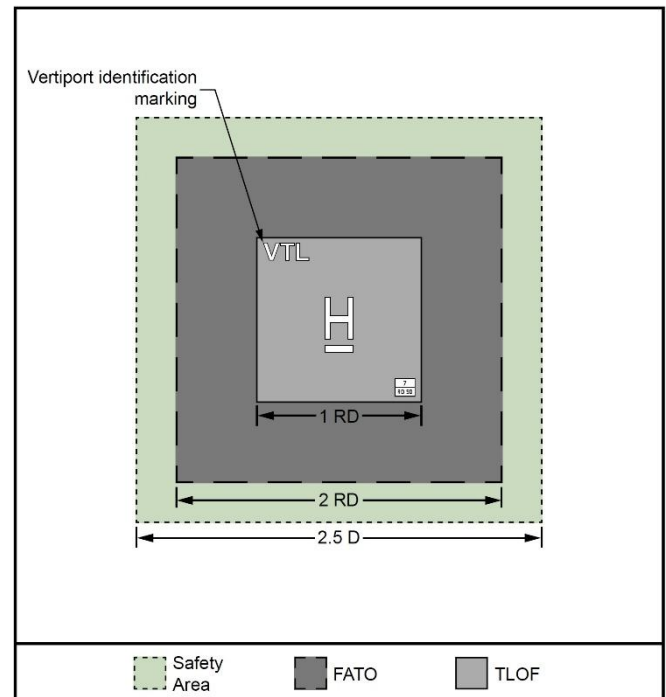


Figure 2: Relationship between TLOF/FATO/Safety Area and “VTL” Marking (excerpt from EB 105A)



Figure 3: DCA Caution Sign (excerpt from EB 105A)

As noted in the previous report⁷⁾, the FAA Reauthorization Act of 2024 mandates the issuance of performance-based vertiport design AC by December 31, 2025, and the initiation of necessary work to update AC 150/5390, Heliport Design, in order to provide performance-based guidance for heliport design. Meanwhile, in conjunction with the revision of EB 105, the FAA held online Industry Day meetings on September 30, 2024¹⁴⁾, and January 14, 2025¹⁵⁾, during which it announced a shift in policy: Rather than issuing a separate AC for vertiport

design apart from the heliport design AC 150/5390, the FAA now plans to issue a unified AC covering both heliport and vertiport design by June 30, 2027 (EB 105 would be rescinded upon publication of this AC), taking into account industry feedback and the time required for necessary data collection.

4. Selection of the Operating Entity for the Center for Advanced Aviation Technologies (CAAT)

As noted in the previous report⁷⁾, the FAA Reauthorization Act of 2024 requires the Administrator of the FAA, within 90 days of the enactment of the legislation, to develop a plan for the establishment of a Center for Advanced Aviation Technologies to support the testing and advancement of emerging aviation technologies. The plan must consider the inclusion of AAM airspace laboratories, flight demonstration zones, and testing corridors within the center. Furthermore, based on this plan, the FAA Administrator is required to establish the Center for Advanced Aviation Technologies by September 30, 2026. In selecting the location, the law directs the FAA to give priority to communities or regions with a strong aeronautical presence, such as those near large commercial airports, aviation manufacturers with expertise in advanced aviation technologies like powered-lift, or existing FAA facilities.

Based on these developments, the FAA conducted a Market Survey/Request for Information for the Center for Advanced Aviation Technologies (hereinafter referred to as “RFI”) during the period from November 20, 2024, to January 20, 2025 (extended from the original deadline of January 6, 2025)¹⁶⁾. In this RFI, information was collected through responses from each information provider to a series of questions, such as:

- Questions regarding an existing or proposed airspace laboratory, including:
 - The location and size of the facility
 - Whether there are flight demonstration zones in the same region
 - Whether there are aviation manufacturers or air carriers in the same region with expertise in

advanced aviation technologies such as powered-lift

A total of 20 questions

- Questions regarding an existing or proposed flight demonstration zone and testing corridors, including:
 - The location and size of the zone(s) and corridors
 - Whether there is an airspace laboratory in the same region
 - Whether there are aviation manufacturers or air carriers near the flight demonstration zones with expertise in advanced aviation technologies such as powered-lift

A total of 25 questions

- Questions regarding the planning of the Center for Advanced Aviation Technologies (also called “CAAT” in the RFI as an abbreviation for the Center):
 - What are the priority research areas that the CAAT should focus on over the next 20 years?
 - How would flight demonstration zones and testing corridors be used to support that research?

A total of 2 questions

On April 23, 2025, U.S. Secretary of Transportation Sean Duffy and Senator Ted Cruz of Texas announced that the Texas A&M University System (TAMUS) had been selected to lead the establishment and operation of the CAAT⁴⁾. According to the announcement, TAMUS was selected from among 28 proposals due to factors such as its proximity to several major international airports and FAA regional headquarters, the presence of existing infrastructure for advanced aviation technology testing, and strong academic programs / industry partnerships. Regarding the budget for CAAT, the FAA Reauthorization Act of 2024 authorizes funding of \$35 million per fiscal year from FY2025 through FY2028, totaling \$140 million over four years¹⁷⁾.

5. Direction to Establish the eVTOL Integration Pilot Program under the Executive Order

On June 6, 2025, President Donald J. Trump signed the executive order titled “Unleashing American Drone Dominance”⁶. While the executive order primarily focuses on drone-related policies, such as rulemaking for Beyond Visual Line of Sight (BVLOS) operations and the strengthening of the American drone industrial base, it also includes provisions related to AAM. Specifically, Sec. 6 of the order directs the Secretary of Transportation, acting through the Administrator of the FAA and in coordination with the Director of the Office of Science and Technology Policy (OSTP), to establish an eVTOL Integration Pilot Program (eIPP) as an extension of the BEYOND Program. (The BEYOND Program, launched in October 2020 as a successor to the UAS Integration Pilot Program (IPP), is an FAA-led initiative focused on activities such as collecting data necessary for drone rulemaking.) The executive order outlines that the eIPP should proceed through the following process:

- Within 90 days of the date of this order, the Secretary of Transportation, acting through the Administrator of the FAA, shall issue a public request for proposals to State, local, tribal, and territorial governments. Proposals must be submitted within 90 days of the request.
- Within 180 days of the request, the Secretary of Transportation, acting through the Administrator of the FAA, shall select at least five pilot projects that plan to begin eVTOL operations within 90 days of the establishment of any agreement for the project.
- The Secretary of Transportation, acting through the Administrator of the FAA, shall execute agreements with selected applicants, outlining project goals, regulatory needs, timelines, information sharing and data exchange mechanisms, and responsibilities.
- Within 180 days after the selection of pilot program participants, the Secretary of Transportation shall submit an initial implementation report to the President through the Director of OSTP. Thereafter, the Secretary shall submit annual reports, and a final report upon completion of the program.
- The eIPP shall conclude three years after the date the first pilot project becomes operational, unless the

Secretary of Transportation determines that an extension is warranted in the national interest.

- Before and after the conclusion of the eIPP, the Secretary of Transportation shall use the information and experience yielded by the program to inform the development of regulations, initiatives, and plans to enable safe eVTOL operations. Where appropriate, such information shall be shared with the Secretary of Defense, Attorney General, Secretary of Homeland Security, and heads of other relevant agencies.
- The Secretary of Transportation, in consultation with the Director of OSTP, may expand this pilot program to other advanced aviation aircraft as warranted.

6. Conclusion

This report has outlined recent developments in U.S. policy on AAM, including: the finalization by the FAA of pilot certification and flight standards for powered-lift aircraft; the revision of FAA guidelines on vertiports; the selection of the operating entity for the Center for Advanced Aviation Technologies (CAAT); and the issuance of an Executive Order directing the establishment of an eVTOL Integration Pilot Program (eIPP). Since the enactment of the FAA Reauthorization Act of 2024, and amid the transition from the Biden administration to the Trump administration, the U.S. government has steadily implemented the AAM-related initiatives outlined in the Act. In addition, new policy directions have been introduced under the recent Executive Order. Continued attention will be required to monitor future developments in U.S. government policy on AAM.

Notes

Note 1) According to 14 CFR §1.1, a powered-lift is defined as a heavier-than-air aircraft capable of vertical takeoff, vertical landing, and low speed flight that depends principally on engine-driven lift devices or engine thrust for lift during these flight regimes and on nonrotating airfoil(s) for lift during horizontal flight.

References

- 1) FAA, Integration of Powered-Lift: Pilot Certification and Operations; Miscellaneous Amendments Related to Rotorcraft and Airplanes - Final Rule
<https://www.faa.gov/newsroom/integration-powered-lift-pilot-certification-and-operations-miscellaneous-amendments>
- 2) FAA, Integration of Powered-Lift: Pilot Certification and Operations; Miscellaneous Amendments Related to Rotorcraft and Airplanes
<https://www.federalregister.gov/documents/2023/06/14/2023-11497/integration-of-powered-lift-pilot-certification-and-operations-miscellaneous-amendments-related-to>
- 3) FAA, Engineering Brief No. 105A, Vertiport Design, Supplemental Guidance to Advisory Circular 150/5390-2D, Heliport Design
https://www.faa.gov/airports/engineering/engineering_briefs/eb_105a_vertiports
- 4) FAA, U.S. Transportation Secretary Sean P. Duffy and U.S. Sen. Ted Cruz Announce Texas A&M Will Lead the Center for Advanced Aviation Technologies
<https://www.faa.gov/newsroom/us-transportation-secretary-sean-p-duffy-and-us-sen-ted-cruz-announce-texas-am-will-lead>
- 5) FAA Reauthorization Act of 2024
<https://www.congress.gov/bill/118th-congress/house-bill/3935/text>
- 6) The White House, Unleashing American Drone Dominance
<https://www.whitehouse.gov/presidential-actions/2025/06/unleashing-american-drone-dominance/>
- 7) Shinichiro Tsuru, U.S. Policy Trends on Advanced Air Mobility: Part 3
<https://www.jitti.usa.org/reports/u.s.-policy-trends-on-advanced-air-mobility%3A-part-3>
- 8) FAA, Integration of Powered-Lift: Pilot Certification and Operations; Miscellaneous Amendments Related to Rotorcraft and Airplanes
<https://www.federalregister.gov/documents/2024/11/21/2024-24886/integration-of-powered-lift-pilot-certification-and-operations-miscellaneous-amendments-related-to>
- 9) FAA, Integration of Powered-Lift: Pilot Certification and

- Operations; Miscellaneous Amendments Related to Rotorcraft and Airplanes; Correction
<https://www.federalregister.gov/documents/2025/01/03/2024-30331/integration-of-powered-lift-pilot-certification-and-operations-miscellaneous-amendments-related-to>
- 10) FAA, Enforcement Policy Regarding “Integration of Powered-Lift: Pilot Certification and Operations; Miscellaneous Amendments Related to Rotorcraft and Airplanes; Correction”
<https://www.federalregister.gov/documents/2025/03/11/2025-03844/enforcement-policy-regarding-integration-of-powered-lift-pilot-certification-and-operations>
 - 11) FAA, Advisory Circular No. 194-1, Powered-Lift Operations
https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_194-1.pdf
 - 12) FAA, Advisory Circular No. 194-2, Pilot Training and Certification for Powered-Lift Operations
https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_194-2.pdf
 - 13) FAA, Notice of Availability, Notice of Industry Day Meeting, and Request for Comment on the Draft Engineering Brief 105A for Vertiport Design
<https://www.federalregister.gov/documents/2024/09/16/2024-20915/notice-of-availability-notice-of-industry-day-meeting-and-request-for-comment-on-the-draft>
 - 14) FAA, EB105A Vertiports Design Industry Day
<https://www.youtube.com/live/Hr2k7oOmQFE>
 - 15) FAA, EB105A Vertiports Design Industry Day — 2025
<https://www.youtube.com/watch?v=riYYgi17kGw>
 - 16) FAA, Market Survey/Request for Information for the Center for Advanced Aviation Technologies
<https://sam.gov/opp/f71a6ca63080457b953056440f6b42f9/view>
 - 17) Texas A&M University-Corpus Christi, TAMU-CC Autonomy Research Institute, Executing on Behalf of A&M System, to Lead Center for Advanced Aviation Technologies
<https://www.tamucc.edu/news/2025/04/texas-am-corpus-christi-autonomy-research-institute-executing-on-behalf-of-am-system-to-lead-center-for-advanced-aviation-technologies.php>