



AIRCRAFT OWNERS AND PILOTS ASSOCIATION

421 Aviation Way • Frederick, MD 21701-4798
Telephone (301) 6952000 • FAX (301) 6952375
www.aopa.org

DEPT. OF TRANSPORTATION
DOCKETS

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July 20, 1999

U.S. Department of Transportation Dockets
400 Seventh Street, SW
Room Plaza 401
Washington, DC 20590

Re: Docket No. FAA-19995535 -17

Dear Sirs:

The Aircraft Owners and Pilots Association (AOPA) is an organization that represents over 350,000 pilots who operate general aviation (GA) aircraft throughout the National Airspace System (NAS) under both Instrument Flight Rules (IFR) and Visual Flight Rules (VFR). AOPA submits the following comments as they pertain to the Notice of Proposed Rulemaking (NPRM) for Commercial Space Transportation Reusable Launch Vehicle and Reentry Licensing Regulations. AOPA's primary concern with the proposal is the lack of guidelines aimed at accommodating Reusable Launch Vehicles (RLV) within the existing architecture of the NAS.

The proposed rules will affect general aviation operations more than any other. The NPRM alludes to the Federal Aviation Administration's (FAA) preference to avoid areas of population, which means that the airspace and airports most affected by launches and re-entries will be those used by GA pilots. Airports and airspace are both finite resources. Each week, one of the remaining 5,000 airports is closed permanently and ongoing rulemaking actions that establish positively controlled airspace is reducing the volume of uncontrolled airspace available to the GA user.

Airspace available to general aviation aircraft is currently limited in three ways. First, the majority of GA aircraft are limited to low-altitude airspace by the performance of their aircraft. Second, GA aircraft operating VFR are required to receive clearance through terminal airspace that is primarily designed for air carrier operations. In these areas VFR traffic is handled as workload permits. This often restricts GA traffic from access to the airspace. Lastly, the United States Department of Defense (DOD) restricts GA operations in many areas of the country for military operations or matters of national security. Given the wide variety of uses of the airspace by general aviation pilots and aircraft, adding a new user to the existing airspace has the potential to significantly restrict more airspace and reduce free flight capabilities that GA aircraft currently have at their disposal.

Failure to properly manage the huge volume of airspace that a vehicle will require for its departure and reentry may lead to hazardous combinations of airspace use. It is easy to separate incompatible airspace users from each other by restrictions. However, it is AOPA's

position that general aviation operations should be entitled to retain the access to airspace needed for RLVs. Licensing and approval of both the vehicles and their associated launch and reentry sites should be evaluated for impact on the other uses of the airspace. The RLVs should not be designed to an optimum performance, which would require the FAA to preempt any type of aeronautical operation for many hundreds of square miles. Instead, the FAA should steer RLV technology toward designs that can be accommodated in the existing NAS (like any other airspace user). These types of guidelines are not only missing from the proposed rules; they are completely dismissed from discussion within the entire NPRM document. It is unclear to AOPA why this discussion was omitted from the document.

The "Background" portion of the NPRM partially eludes to this issue when it discusses the FAA's intent:

"to provide the emerging commercial space transportation industry with the requisite flexibility to develop commercially feasible reentry and reusable launch vehicle systems whose operation would not jeopardize public safety."

This flexibility should not override other uses of airspace. The discussion also fails to recognize the impact of the RLV operation on VFR operations. Since VFR operations are not subject to positive control outside of major terminal areas, it will be difficult to eliminate safety issues without sterilizing the airspace.

Mission risk assessment

Operational Restrictions

D. Reentry Sites

Although the risk assessment may be measurable as a cumulative result of the launch and reentry, the agency needs to recognize that safety issues pertaining to the launch are completely different from the reentry. RLV controllability during launch is significantly better than during reentry. Thus, the danger to aeronautical operations appears to be greater during the reentry than launch. The reentry may be done with minimal fuel for reduced volatility, but the predictability of a projectile descending with minimum control through navigable airspace may be affected by meteorological conditions that reduce the ability to navigate the vehicle while other airspace operations continue simultaneously. This unpredictability should not significantly increase the size of the three standard deviation area to accommodate all-weather reentry. Instead, the vehicle design should include technology that will permit the vehicle to account for meteorological conditions and keep the risks to a minimum with positive, precise control of the aircraft all the way to touchdown.

Section-By-Section Analysis

- ***Paragraph 401.5 Definitions***

- *Flight Safety System.*

- In the interest of preserving uniqueness within the aviation industry, AOPA suggests that the FAA reword the term, or modify its associated abbreviation to avoid confusion with the use of FSS that currently means "Flight Service Station". Two different uses of the same term creates overall confusion. The creation of new terminology should not duplicate existing terminology when the terms are used jointly in close proximity of discussion topics (e.g. discussion pertaining to notifying a local FSS about activating an RLV's alternate landing site when the RLV's FSS is engaged.)

- *Reentry Site.*

- The term doesn't mention requirements for such a site to be certified or authorized by the FAA. If there is an approved reentry site (per Part 433) and associate process, it should be mentioned in the definition.

- ***Part431***

- The proposed Part fails to include any procedures for the notification of other aeronautical users as to the intent of the Part 431 applicant. If the FAA is going to certify the applicants on a case by case basis, then all users should have the opportunity to voice concerns, or raise issues that may not have been considered by the FAA during the policy and safety approvals. The Part should allude to the FAA's intent to circularize the proposals for public comment. If the FAA doesn't intend to notify the public, AOPA requests that the FAA consider this action as part of the policy and safety approval process.

- ***Part433***

- The proposed Part fails to discuss the airspace analysis that accompanies the establishment of a landing facility. The FAA routinely studies landing facilities that are publicly and privately owned. These facilities may be used for private or public purposes but regardless the FAA evaluates them. A similar evaluation should be required prior to the issuance of any license under this proposed Part.

- Circularization of the airspace analysis will enable other users of the airspace to become involved in the Site approval and will enable the users to bring concerns and possible issues to the attention of the FAA prior to the issuance of a license. AOPA looks favorably upon the existing process that the FAA uses for its Airport and Airspace Analysis and expects the FAA to establish the same procedures and similar criteria for these landing facilities as well.

- Additional infrastructure such as phraseology, radio frequencies, charting symbology, and tabular activity schedules need to be developed and an educational campaign launched.

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Coordination with the FAA for dissemination of Notices to Airmen (NOTAMs) all need to be outlined for the safety of general aviation pilots.

Please consider these comments as you undertake the task of establishing the regulatory guidelines required for commercial space operations. Since it appears that the operations may be conducted in close proximity to other aeronautical operations, extensive review of the impact on all operations must be conducted. On behalf of all general aviation pilots, thank you for the opportunity to voice our concerns.

Sincerely,

A handwritten signature in cursive script, appearing to read "Randy Kenagy".

Randy Kenagy
Associate Director
Air Traffic Services