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[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 400 and 401

[Docket No.: FAA-2012-0045; Amdt. Nos. 400-5 and 401-8]

RIN 2120-AJ90

Exclusion of Tethered Launches From Licensing Requirements

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is amending its commercial space transportation regulations to exclude specified tethered launches from its licensing and permitting requirements. This action maintains safety by providing launch vehicle operators with clear and simple criteria for a safe tethered launch, while relieving operators and the FAA from the administrative burden of filing and processing license and permit applications or waiver requests. The intent of this final rule is to enhance the safety of tethered launches and improve regulatory effectiveness.

DATES: Effective [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For information on where to obtain copies of rulemaking documents and other information related to this final rule, see “How To Obtain Additional Information” in the SUPPLEMENTARY INFORMATION section of this document.

FOR FURTHER INFORMATION CONTACT: For technical questions concerning this rule, contact Stewart Jackson, AST-300, Office of Commercial Space Transportation, Federal Aviation Administration, 800 Independence Avenue, SW, Washington, DC 20591; telephone (202) 267-7903; e-mail Stewart.Jackson@faa.gov.

For legal questions concerning this rule, contact Sabrina Jawed, AGC-250, Office of the Chief Counsel, Federal Aviation Administration, 800 Independence Avenue, SW, Washington, DC 20591; telephone (202) 267-8839; email Sabrina.Jawed@faa.gov.

SUPPLEMENTARY INFORMATION:

Authority for this Rulemaking

The Commercial Space Launch Act of 1984, as amended and re-codified at 51 U.S.C. 50901-50923 (the Act), authorizes the Department of Transportation and the FAA, through delegations, to oversee, license, and regulate commercial launch and reentry activities, and the operation of launch and reentry sites as carried out by U.S. citizens or within the United States (51 U.S.C. 50904, 50905). The Act directs the FAA to exercise this responsibility consistent with public health and safety, safety of property, and the national security and foreign policy interests of the United States (51 U.S.C. 50905). Section 50901(a)(7) directs the FAA to regulate only to the extent necessary, in relevant part, to protect the public health and safety and safety of property. The FAA is also responsible for encouraging, facilitating, and promoting commercial space launches by the private sector (51 U.S.C. 50903).

I. Overview of Final Rule

This action provides launch vehicle, tether system, and operational criteria required to conduct a safe tethered launch. Tethered launches that meet the criteria

contained in this final rule are excluded from chapter III licensing, permitting, and waiver requirements.

This rule defines a tether system as a device that contains launch vehicle hazards by physically constraining a launch vehicle in flight to a specified range from its launch point. It includes all components, from the point where the tether attaches to the vehicle to a solid base, that experience load during a tethered launch. For a tethered launch to be excluded from the FAA's licensing and permitting requirements, the tether system, including the points of attachment within the tether system, must:

- not yield or fail under the maximum dynamic load on the system or two times the maximum potential engine thrust;
- have a minimum safety factor of 3.0 for yield stress and 5.0 for ultimate stress;
- constrain the launch vehicle within 75 feet above ground level as measured from the ground to the attachment point of the vehicle to the tether;
- display no damage prior to launch; and
- be insulated or located such that it will not experience thermal damage due to the launch vehicle's exhaust.

In addition, tethered operations must be carried out within specified separation distances based on the amount of propellant onboard a launch vehicle. Lastly, the launch vehicle must be unmanned, be powered by a liquid or hybrid engine, carry no more than 5,000 pounds of propellant, and must not use any of the toxic propellants listed in Table I417-2 or I417-3 in Appendix I of part 417. The structural criteria mitigate the hazards that can

compromise the structural integrity of the tether system. The vehicle requirements and operational criteria provide additional protection to the public by mitigating potential hazards posed by a tether system failure.

This action alleviates burdens on both the vehicle operator and the FAA. The operator will no longer incur the costs associated with submitting a launch license application, permit application or petition for waiver under chapter III. Also, the operator will not incur the costs associated with any delay in processing applications or waivers. Finally, the FAA will not have to evaluate applications, conduct independent analyses, or issue licenses, permits or waivers.

II. Background

On August 23, 2012, the FAA published a notice of proposed rulemaking (NPRM) (77 FR 50956)¹ that proposed to exclude certain tethered launches from chapter III requirements if the tethered launches met specified safety criteria. The proposed criteria did not address the use of toxic propellants onboard a launch vehicle. During the NPRM comment period, the FAA received a comment stating the agency should revise the proposed rule to protect the public from the potential harm that could result from exposure to a toxic propellant. The FAA agreed that it should have addressed toxic propellants in its proposal. As a result, in July 2014, the agency issued a supplemental notice of proposed rulemaking (SNPRM)² proposing to require any launch operator using any of the toxic propellants identified in tables I417-2 and I417-3 in Appendix I of part 417 to satisfy the chapter III requirements.

¹ Exclusion of Tethered Launches From Licensing Requirements, NPRM, 77 FR 50956 (Aug. 23, 2012).

² Exclusion of Tethered Launches From Licensing Requirements, SNPRM, 79 FR 42475 (July 22, 2014).

In addition to the comment about toxic propellants, the FAA received other comments to the NPRM, which were discussed in the SNPRM. Two of the comments resulted in clarifications to the proposed rule and have been adopted in this final rule. First, the FAA removed the term, “established strength properties” from § 400.2(c)(2)(i) to better clarify the proposed requirement and preserve the original intent, which is to ensure that the tether system can withstand the maximum dynamic load placed on it without imposing on the launch operator the burden of determining strength properties. Second, the FAA revised § 400.2(c)(2)(iii) to clarify that the maximum flight limit of 75 feet for a tethered launch vehicle would be measured from the ground to a fully-extended tether’s attachment point to a vertically-oriented vehicle.

III. Discussion of Public Comments to the SNPRM and Final Rule

The comment period for the July 2014 SNPRM closed on September 22, 2014. The FAA did not receive comments to the SNPRM. However, as noted under the “Background” section of this final rule, the agency did receive comments to the August 2012 NPRM, and provided detailed responses to them in the SNPRM. If you wish to review that information, refer to the “Background” section of the SNPRM.

Because the FAA did not receive comments to the SNPRM, the agency adopts the amendments proposed in the SNPRM without change.

IV. Regulatory Notices and Analyses

A. Regulatory Evaluation

Changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 and Executive Order 13563 direct that each Federal agency shall propose or adopt a regulation only upon a reasoned determination that the benefits of the

intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 (Public Law 96-354) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (Public Law 96-39) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, the Trade Act requires agencies to consider international standards and, where appropriate, that they be the basis of U.S. standards. Fourth, the Unfunded Mandates Reform Act of 1995 (Public Law 104-4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of \$100 million or more annually (adjusted for inflation with base year of 1995). This portion of the preamble summarizes the FAA's analysis of the economic impacts of this final rule.

Department of Transportation Order DOT 2100.5 prescribes policies and procedures for simplification, analysis, and review of regulations. If the expected cost impact is so minimal that a proposed or final rule does not warrant a full evaluation, this order permits that a statement to that effect and the basis for it be included in the preamble if a full regulatory evaluation of the cost and benefits is not prepared. Such a determination has been made for this final rule. The reasoning for this determination is because the FAA has licensing authority over tethered launches, which are considered launches under chapter III unless they meet the definition of an amateur rocket launch.³ Today, to conduct such tethered non-amateur rocket launches, operators must obtain a

³ Launches of amateur rockets are excluded from the requirements of chapter III. 14 CFR 400.2 (2015).

launch license, experimental permit, or apply for a waiver from chapter III. Applying for waivers, licenses, and permits imposes a financial burden on vehicle operators and the FAA because of time and resources required to create and analyze these applications.

The final rule establishes clear and simple criteria for an effective tether system, and vehicle and operational criteria as added measures to protect the public in the event of a tether system failure. Operators will not have to apply for a launch license, permit, or waiver from chapter III to conduct tethered launches of non-amateur rockets⁴ that meet the rule criteria for an effective tether system and the vehicle and operational criteria. Operators that meet the criteria will not have to incur the costs of applying for a launch license, permit, or waiver and will not have to sustain the costs associated with delay in the processing of these applications. The FAA will not have to conduct case-by-case analyses of tethered launches that meet the established criteria to verify public safety from a launch vehicle explosion or confirm that the tether system will not fail. Furthermore, launch operators that conduct tethered launches will not be compelled to follow the criteria in this final rule because they will still have the option of applying for a launch license, permit, or waiver under chapter III. Therefore, the final rule will impose no additional requirements on operators, but will provide an alternative to conducting a tethered launch under chapter III. If the operator deems it more cost effective or prefers to apply for a license, permit, or waiver than to follow the criteria listed here, the operator will have that option.

The FAA requested but received no comments on its conclusion in the NPRM that the rule would be cost relieving to operators and the FAA. The FAA then issued an

⁴ Operators launching amateur rockets on a tether will still be subject to part 101 of chapter I and will continue to be excluded from chapter III.

SNPRM that revised the FAA’s original proposal by excluding from chapter III only those eligible launches that do not use specified toxic propellants. Even with the change that was proposed in the SNPRM, the rule is still cost relieving relative to the current regulations. Tethered launches using toxic fuel will continue to comply with current chapter III requirements and incur no new costs. Operators launching vehicles that are eligible for the chapter III exclusion will still benefit from cost savings relative to the current chapter III requirements. The FAA concluded in the SNPRM that the rule would be cost relieving to operators and the FAA. The FAA did not receive any comments to the SNPRM.

For the reasons discussed, the rule will be cost relieving to both operators and the FAA. The FAA has determined that this final rule is not a “significant regulatory action” as defined in section 3(f) of Executive Order 12866, and is not “significant” as defined in DOT’s Regulatory Policies and Procedures.

B. Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (Public Law 96-354) (RFA) establishes “as a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the businesses, organizations, and governmental jurisdictions subject to regulation.” To achieve this, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are given serious consideration.” The RFA covers a wide-range of small entities, including small businesses, not-for-profit organizations, and small governmental jurisdictions.

Agencies must perform a review to determine whether a rule will have a significant economic impact on a substantial number of small entities. If the agency determines that it will, the agency must prepare a regulatory flexibility analysis as described in the RFA.

However, if an agency determines that a rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the RFA provides that the head of the agency may so certify and a regulatory flexibility analysis is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

This final rule is expected to provide an alternative to conducting tethered launches under chapter III and therefore could alleviate the financial burden of applying for a launch license, permit, or waiver to chapter III if an operator met the criteria. The expected outcome will therefore be either a cost saving impact or no impact on small entities affected by the rule. Even the change proposed in the SNPRM that launches using toxic propellants would have to continue to comply with chapter III will not impose costs, as operators conducting tethered launches currently have to comply with chapter III. Thus, the FAA concludes the rule will still have either a cost saving impact or no impact on small entities. The FAA did not receive comments when it reached this conclusion in both the SNPRM and NPRM.

If an agency determines that a rulemaking will not result in a significant economic impact on a substantial number of small entities, the head of the agency may so certify under section 605(b) of the RFA. Therefore, as provided in section 605(b), the

Administrator of the FAA certifies that this rulemaking will not result in a significant economic impact on a substantial number of small entities.

C. International Trade Impact Assessment

The Trade Agreements Act of 1979 (Public Law 96-39), as amended by the Uruguay Round Agreements Act (Public Law 103-465), prohibits Federal agencies from establishing standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Pursuant to these Acts, the establishment of standards is not considered an unnecessary obstacle to the foreign commerce of the United States, so long as the standard has a legitimate domestic objective, such as the protection of safety, and does not operate in a manner that excludes imports that meet this objective. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards. If a foreign launch operator conducts a tethered launch in the United States that meets the requirements of this final rule, it will be eligible for the exclusion from chapter III. The FAA has assessed the potential effect of this final rule and determined that it will have the same impact on domestic and international entities and thus have a neutral trade impact.

D. Unfunded Mandates Assessment

Title II of the Unfunded Mandates Reform Act of 1995 (Public Law 104-4) requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a final agency rule that may result in an expenditure of \$100 million or more (in 1995 dollars) in any one year by State, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a "significant regulatory action." The FAA currently uses an inflation-adjusted value of \$151 million in

lieu of \$100 million. This final rule does not contain such a mandate; therefore, the requirements of Title II of the Act do not apply.

E. Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) requires that the FAA consider the impact of paperwork and other information collection burdens imposed on the public. The FAA has determined that there is no new requirement for information collection associated with this final rule.

Public comments: The FAA did not receive comments to the NPRM or the SNPRM on its determination that the proposed rule would not impose new paperwork requirements.

F. International Compatibility and Cooperation

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to conform to International Civil Aviation Organization (ICAO) Standards and Recommended Practices to the maximum extent practicable. The FAA has determined that there are no ICAO Standards and Recommended Practices that correspond to these regulations.

G. Environmental

FAA Order 1050.1E identifies FAA actions that are categorically excluded from preparation of an environmental assessment or environmental impact statement under the National Environmental Policy Act in the absence of extraordinary circumstances. The FAA has determined this rulemaking action qualifies for the categorical exclusion identified in paragraph 312f and involves no extraordinary circumstances.

V. Executive Order Determinations

A. Executive Order 13132, Federalism

The FAA has analyzed this final rule under the principles and criteria of Executive Order 13132, Federalism. The agency determined that this action will not have a substantial direct effect on the States, or the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government, and, therefore, does not have Federalism implications.

B. Executive Order 13211, Regulations that Significantly Affect Energy Supply, Distribution, or Use

The FAA analyzed this final rule under Executive Order 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use (May 18, 2001). The agency has determined that it is not a “significant energy action” under the executive order and it is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

VI. How To Obtain Additional Information

A. Rulemaking Documents

An electronic copy of a rulemaking document may be obtained by using the Internet —

1. Search the Federal eRulemaking Portal (<http://www.regulations.gov>);
2. Visit the FAA’s Regulations and Policies Web page at http://www.faa.gov/regulations_policies/ or
3. Access the Government Printing Office’s Web page at <http://www.gpo.gov/fdsys/>.

Copies may also be obtained by sending a request (identified by notice, amendment, or docket number of this rulemaking) to the Federal Aviation

Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue SW.,
Washington, DC 20591, or by calling (202) 267-9680.

B. Comments Submitted to the Docket

Comments received may be viewed by going to <http://www.regulations.gov> and following the online instructions to search the docket number for this action. Anyone is able to search the electronic form of all comments received into any of the FAA's dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.).

C. Small Business Regulatory Enforcement Fairness Act

The Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 requires the FAA to comply with small entity requests for information or advice about compliance with statutes and regulations within its jurisdiction. A small entity with questions regarding this document, may contact its local FAA official, or the person listed under the FOR FURTHER INFORMATION CONTACT heading at the beginning of the preamble. To find out more about SBREFA on the Internet, visit http://www.faa.gov/regulations_policies/rulemaking/sbre_act/.

List of Subjects

14 CFR Part 400

Licensing, Safety, Space transportation and exploration.

14 CFR Part 401

Space transportation and exploration.

The Amendment

In consideration of the foregoing, the Federal Aviation Administration amends chapter III of title 14, Code of Federal Regulations as follows:

PART 400—BASIS AND SCOPE

1. The authority citation for part 400 continues to read as follows:

Authority: 51 U.S.C. 50901–50923.

2. Revise § 400.2 to read as follows:

§ 400.2 Scope.

The regulations in this chapter set forth the procedures and requirements applicable to the authorization and supervision under 51 U.S.C. subtitle V, chapter 509, of commercial space transportation activities conducted in the United States or by a U.S. citizen. The regulations in this chapter do not apply to—

(a) Space activities carried out by the United States Government on behalf of the United States Government;

(b) The launch of an amateur rocket as defined in § 1.1 of chapter I of this title; or

(c) A launch of a tethered launch vehicle that meets all the following criteria:

(1) Launch vehicle. The launch vehicle must—

(i) Be unmanned;

(ii) Be powered by a liquid or hybrid rocket motor;

(iii) Not use any of the toxic propellants of Table I417-2 and Table I417-3 in

Appendix I of part 417 of this chapter; and

(iv) Carry no more than 5,000 pounds of propellant.

(2) Tether system. The tether system must—

(i) Not yield or fail under—

(A) The maximum dynamic load on the system; or

(B) A load equivalent to two times the maximum potential engine thrust.

(ii) Have a minimum safety factor of 3.0 for yield stress and 5.0 for ultimate stress.

(iii) Constrain the launch vehicle within 75 feet above ground level as measured from the ground to the attachment point of the vehicle to the tether.

(iv) Display no damage prior to the launch.

(v) Be insulated or located such that it will not experience thermal damage due to the launch vehicle's exhaust.

(3) Separation distances. The launch operator must separate its launch from the public and the property of the public by a distance no less than that provided for each quantity of propellant listed in Table A of this section.

TABLE A—SEPARATION DISTANCES FOR TETHERED LAUNCHES

Propellant carried (lbs.)	Distance (ft.) of the public and property of the public from the launch point
1-500	900
501-1,000	1,200
1001-1,500	1,350
1,501-2,000	1,450
2,001-2,500	1,550
2,501-3,000	1,600
3,001-3,500	1,650
3,501-4,000	1,700

4,001-4,500	1,750
4,501-5,000	1,800

PART 401—ORGANIZATION AND DEFINITIONS

3. The authority citation for part 401 continues to read as follows:

Authority: 51 U.S.C. 50901–50923.

4. Amend § 401.5 by adding the definition of tether system in alphabetical order to read as follows:

§ 401.5 Definitions.

* * * * *

Tether system means a device that contains launch vehicle hazards by physically constraining a launch vehicle in flight to a specified range from its launch point. A tether system includes all components, from the tether’s point of attachment to the vehicle to a solid base, that experience load during a tethered launch.

* * * * *

Issued under authority provided by 49 U.S.C. 106(f) in Washington, DC, on May 18, 2015.

Michael P. Huerta
Administrator

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