

or North order. This action corrects that error.

Correction to Final Rule

Accordingly, pursuant to the authority delegated to me, Amendment of Jet Route J-133 and Establishment of Area Navigation Route Q-801 in the Vicinity of Anchorage, SK, published in the **Federal Register** of August 30, 2024 (89 FR 70474), FR Doc. 2024-19356, is corrected as follows:

■ On page 70475, in column 2, under the heading “The Rule,” the second paragraph is revised to read as follows:

J-133: Jet route J-133 extends between Anchorage, AK, VOR/DME and Galena, AK, VOR/DME.

■ On page 70476, at the top of column 3, the description for Jet Route J-133 is revised to read as follows:

J-133 [Amended]

From Galena, AK to Anchorage, AK.

* * * * *

Issued in Washington, DC, on September 13, 2024.

Frank Lias,

Manager, Rules and Regulations Group.

[FR Doc. 2024-21260 Filed 9-18-24; 8:45 am]

BILLING CODE 4910-13-P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 401, 413, 415, 431, 435, 437, 440, 450, and 460

[Docket No. FAA-2023-1656; Amdt. Nos. 401-10, 413-13, 415-8, 431-8, 435-6, 437-4, 440-7, 450-3, 460-4]

RIN 2120-AL19

U.S. Commercial Space Launch Competitiveness Act Incorporation

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: This final rule incorporates various changes required by the United States Commercial Space Launch Competitiveness Act of 2015. This final rule provides regulatory clarity to applicants seeking licenses for space flight operations involving government astronauts by adding two new subparts to the human space flight regulations containing requirements for operators with government astronauts with and without safety-critical roles on board vehicles.

DATES: Effective November 18, 2024.

The compliance date for this final rule is November 18, 2024.

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:

Charles Huet, Space Policy Division, Space Regulations and Standards Branch, ASZ-210, Federal Aviation Administration, 800 Independence Avenue SW, Washington, DC 20591; telephone (202) 306-9069; email charles.huet@faa.gov.

SUPPLEMENTARY INFORMATION:

List of Abbreviations and Acronyms Frequently Used in This Document

Expendable Launch Vehicle (ELV)
International Civil Aviation Organization (ICAO)
Maximum Probable Loss (MPL)
National Aeronautics and Space Administration (NASA)
Reusable Launch Vehicle (RLV)
United States Commercial Space Launch Competitiveness Act (CSLCA)
United States Government (USG)

Table of Contents

I. Authority for This Rulemaking	
II. Executive Summary	
A. Purpose of the Regulatory Action	
B. Changes From the Proposed Rule	
C. Summary of the Costs and Benefits	
III. Background	
A. Summary of the NPRM	
B. General Overview of Comments	
C. Differences Between the NPRM and the Final Rule	
IV. Discussion of Comments and the Final Rule	
V. Regulatory Notices and Analyses	
A. Regulatory Impact Analysis	
B. Regulatory Flexibility Act	
C. International Trade Impact Assessment	
D. Unfunded Mandates Assessment	
E. Paperwork Reduction Act	
F. Environmental Analysis	
VI. Executive Order Determinations	
A. Executive Order 13132, Federalism	
B. Executive Order 13175, Consultation and Coordination With Indian Tribal Governments	
C. Executive Order 13211, Regulations That Significantly Affect Energy Supply, Distribution, or Use	
D. Executive Order 13609, Promoting International Regulatory Cooperation	
VII. Additional Information	
A. Electronic Access and Filing	
B. Small Business Regulatory Enforcement Fairness Act	
List of Subjects	

I. Authority for This Rulemaking

The Commercial Space Launch Act of 1984, as amended and codified at 51 U.S.C. 50901-50923 (the Act), authorizes the Secretary of

Transportation to oversee, license, and regulate commercial launch and reentry activities, and the operation of launch and reentry sites within the United States (U.S.) or as carried out by U.S. citizens. Section 50905 directs the Secretary 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. In addition, section 50903 requires the Secretary to encourage, facilitate, and promote commercial space launches and reentries by the private sector. As codified in 49 CFR 1.83(b), the Secretary has delegated authority to the FAA Administrator to carry out these functions.

II. Executive Summary

A. Purpose of the Regulatory Action

This rule makes several changes to incorporate government astronauts in the regulations, in accordance with the United States Commercial Space Launch Competitiveness Act (CSLCA).¹ It amends title 14 of the Code of Federal Regulations (14 CFR) parts 401, 413, 415, 431, 435, 437, 440, 450, and 460 by incorporating statutory changes resulting from the CSLCA. Specifically, it adds definitions for “Government astronaut,” “International partner astronaut,” and “International Space Station Intergovernmental Agreement,” and revises definitions of “Human space flight incident,” “Launch,” “Launch accident,” “Reenter; reentry” “Reentry accident,” and “Space flight participant,” to incorporate changes required by adding the definition of “Government astronaut.” The rule also creates two new subparts in 14 CFR part 460 that include requirements for operators and applicants whose licensed or permitted operations involve government astronauts with and without safety-critical roles on board a vehicle. The rule revises the human space flight sections of parts 415, 431, 435, 437, and 450 to add government astronauts to the list of people who can be on board a launch or reentry vehicle, and adds certain additional provisions in part 460 to the list of provisions with which an operator must comply.

Additionally, this rule expands the applicability of part 437 to include launching or reentering certain reusable suborbital vehicles. The rule also revises parts 401, 413, 415, 431, 435, 437, 440,

¹ The CSLCA adds government astronauts as a third category of people on board launch or reentry vehicles, excludes government astronauts from the definition of third party, adds space flight participants to the waiver of claims with operators, and expands the applicability of permits to more types of vehicles and operations.

450, and 460 to make conforming amendments to expand the eligibility for an experimental permit from reusable suborbital rockets to reusable suborbital vehicles.

The rule revises part 440 in accordance with the statute and makes conforming amendments. Specifically, it updates the financial responsibility requirements in part 440 to exclude government astronauts from the definitions of “Third party” and “Maximum probable loss (MPL)”. It also adds space flight participants to the insurance requirements in § 440.9 and the reciprocal waiver of claims requirements in § 440.17. Finally, this rule removes the templates for waiver of claims and assumption of responsibilities in appendices B through E of part 440 from the regulations and places them in a separate advisory circular (AC).

B. Changes From the Proposed Rule

The final rule makes several changes from the proposed rule. It replaces the proposed term “human being,” proposed in the notice, with “crew, space flight participant, or government astronaut” in the human space flight requirements of 14 CFR 415.8, 431.8, 435.8, and 437.21(b)(3). In 14 CFR 440.3, the final rule does not adopt the proposed change to government personnel; and excludes government astronaut from the definitions of MPL and third party. The final rule amends the proposed language regarding the reciprocal waiver of claims templates to specify that the templates contained in advisory circular AC 440.17–1 satisfy the reciprocal waiver of claims requirements in 14 CFR 440.17. The final rule replaces the proposed requirement in 14 CFR 460.59(d)(1) to track and update government astronaut training in writing with the requirement to provide traceability to revisions or changes to government astronaut training. Finally, the final rule changes the proposed requirement for operators to train government astronauts in 14 CFR 460.59 and 460.67 to a requirement that operators ensure government astronauts are trained.

C. Summary of the Costs and Benefits

These changes have a minimal impact on licensed commercial space activity with government astronauts because the changes align regulations with the current statutory requirements and practices for crew, space flight participants, and government astronauts. The FAA has been applying the statutory changes since they went into effect in 2015. Since this rule codifies these current practices, there is

effectively no change from the baseline practice without the rule, and therefore no measurable resulting benefits or costs.

III. Background

A. Summary of the NPRM

On August 18, 2023, the FAA published the notice of proposed rulemaking (NPRM) titled “U.S. Commercial Space Launch Competitiveness Act Incorporation” (88 FR 56546). The FAA also posted draft guidance material for the proposal in the form of a draft “AC 440.17–1 Reciprocal Waiver of Claims Requirements” for comment in the NPRM docket. This NPRM proposed to amend 14 CFR parts 401, 413, 415, 431, 435, 437, 440, 450, and 460 by incorporating statutory changes resulting from the CSLCA. The NPRM proposed to add definitions for “Government astronaut,” “International partner astronaut,” and “International Space Station Intergovernmental Agreement” and revise other definitions required to address the addition of “Government astronaut.” The NPRM also proposed expanding applicability of permitted operations for suborbital rockets to suborbital launch and reentry vehicles; revising the human space flight sections of parts 415, 431, 435, 437, and 450 to include the term “human being” to incorporate government astronauts; updating the financial responsibility requirements to exclude government astronauts from the definitions of “Third party” and “Government personnel” in part 440; adding space flight participants to the insurance requirements in § 440.9, and the reciprocal waiver of claims requirements in § 440.17; and removing the templates for waiver of claims and assumption of responsibilities in appendices B through E of part 440 from the regulations and placing them in a separate advisory circular (AC). Finally, the NPRM proposed creating two new subparts in 14 CFR part 460 to include requirements for operators and applicants who’s licensed or permitted operations involve government astronauts with and without safety-critical roles on board a vehicle.

B. General Overview of Comments

The FAA received 15 comments from individuals, industry associations, and launch and reentry operators. All of the commenters generally supported the proposed changes; however, some suggested changes to the proposal, as discussed more fully in Section IV.

The FAA received comments on the following general areas of the proposal:

1. Removing government astronauts from the definition of third party
2. Duplication of requirements
3. Informed consent of government astronauts
4. Government astronauts without a safety-critical role
5. Moving waiver of claims templates to an advisory circular
6. Government astronauts on permitted operations
7. Tracking government astronaut training requirements
8. Environmental controls
9. Use of the term “human being”
10. Aeronautical knowledge requirement
11. Permit eligibility
12. Government astronauts on foreign vehicles
13. Clarification on the role of international partner astronauts
14. Training of space flight participants for safety critical roles
15. Use of American National Standards Institute (ANSI) standard for human spaceflight ontology
16. Transparency of MPL Methodology
17. Commercial Use of Asteroid or Space Resources

C. Differences Between the NPRM and the Final Rule

The final rule does not adopt the proposed change to the definition of “government personnel” in 14 CFR 440.3; and excludes government astronauts from the definitions of third party and maximum probable loss in the same section. The final rule replaces the proposed term “human being” with “crew, space flight participant, or government astronaut” in 14 CFR 415.8, 431.8, 435.8, and 437.21(b)(3). The FAA also amends the government astronaut training requirements in the final rule to make clear that an operator must ensure government astronauts are appropriately trained but is not required to conduct that training itself. Finally, the final rule allows electronic means of tracking government astronaut training.

IV. Discussion of Comments and the Final Rule

The FAA makes changes to this final rule in response to comments made by the public. Summaries of the comments and the FAA’s responses are grouped by category in the following subsections.

A. Treatment of Government Astronauts Under Part 440

In accordance with the CSLCA,² this rule excludes government astronauts from the definition of third party. It also revises the definition of maximum

² 51 U.S.C. 50902 and 50914.

probable loss (MPL) such that government astronauts are not included in MPL calculations. It makes no change to the definition of government personnel.³

Title 51 U.S.C. chapter 509 requires a licensee to obtain insurance or demonstrate financial responsibility in amounts to compensate for the maximum probable loss from claims by third parties and the United States Government (USG) for certain specified claims. 51 U.S.C. 50914(a)(1). By excluding government astronauts from the definition of third party, government astronauts must also necessarily be excluded from the MPL calculation in § 50914(a)(1)(A). The NPRM proposed to exclude government astronauts from the definition of “third party” and consequently the definition of “government personnel” because government personnel are third parties under 14 CFR 440.3. Under the proposal, the presence of government astronauts during licensed or permitted activities would not affect the amount of insurance coverage operators are required to obtain under 14 CFR 440.9. Additionally, by excluding government astronauts from the definition of “government personnel” in § 440.3, government astronauts would have also necessarily been excluded as additional insureds under § 440.9(b).

Multiple commenters indicated that it is not clear in the NPRM who is responsible for losses to government astronauts during licensed activities. Sierra Space commented that it believes section 112(j) of the CSLCA amended the definition of “third party” in 51 U.S.C. 50902(26) to exclude government astronauts. Sierra Space found that this is a logical exclusion, as government astronauts are intentionally incorporated and integrated into launch missions and should not be treated as third parties for liability purposes.

Virgin Galactic commented that the removal of government astronauts from the definition of government personnel removes the requirement for licensees to obtain an insurance policy to protect government astronauts from their potential liability in their involvement in launch or reentry services. Virgin Galactic also commented that the exclusion of government astronauts from the definition of third party will prevent the FAA from including potential government astronaut claims in MPL calculations. Virgin Galactic requested that the FAA address the implications the exclusion of

government astronauts from the definition of third party will have on MPL determinations and indemnification eligibility under 51 U.S.C. 50915. Virgin Galactic noted that it understands the proposed rule as preventing licensees from being eligible for government indemnification when carrying government astronauts as government astronauts are neither third parties nor government personnel.

In the final rule, the FAA explicitly excludes government astronauts from the definition of “third party” in § 440.3 by adding the phrase “excluding government astronauts” and adding text that excludes government astronauts from government personnel as it is used in the definition of “third party.” Excluding government astronauts from being considered a third party effectively means that government astronauts are not included in MPL calculations and are therefore prevented from bringing claims as third parties. The presence of government astronauts on board a launch or reentry vehicle would therefore not increase MPL values. Because government astronauts are not third parties, they cannot recover for bodily injury or property damage they may suffer during licensed activities using the licensee’s or permittee’s insurance required under § 440.9. However, the USG could be responsible for losses to government astronauts who are USG employees because the USG agrees to be responsible for personal injury to, death of, or property damage or loss sustained by its own employees through the waiver of claims.

Excluding government astronauts from the definition of third parties does not affect the government indemnification provisions in 51 U.S.C. 50915. Section 50915 states that the USG, subject to appropriation or additional legislative authority, shall provide for the payment of certain successful claims by a third party as a result of licensed activity to the extent the total amount of successful claims related to one launch or reentry exceeds the insurance or demonstration of financial responsibility values and is less than the maximum amount set in § 50915(a)(1)(B). Virgin Galactic stated that it understands the proposal would prevent licensees from being eligible for government indemnification when carrying government astronauts as the government astronauts are neither third parties nor government personnel under the proposed rule.

The characterization of government astronauts as not being third parties under the CSLCA and part 440 does not affect whether a licensee receives

government indemnification under § 50915. Rather, the total number of successful claims, along with the necessary appropriations or legislation, are determining factors in whether a licensee receives government indemnification. A licensed activity with only government astronauts on board would not render that activity ineligible for government indemnification of a successful claim of a third party.

In the final rule, the FAA does not amend the definition of government personnel in 14 CFR 440.3. By rulemaking finalized in 1998, the FAA added the term “government personnel” to part 440 and added government personnel to the list of additional insureds. Financial Responsibility Requirements for Licensed Launch Activities, Final Rule, 63 FR 45592 (Aug. 26, 1998). As it explained in the preamble to the final rule, the FAA made these changes in response to a Senate Report stating that Congress intended for government personnel directly associated with the commercial launch operations to be classified as third parties. S. Rep. No. 100–593 (1988). The FAA additionally stated in the Financial Responsibility Requirements for Licensed Launch Activities NPRM, published in 1996, that treating government personnel as third parties and naming them as additional insureds is in accord with the definition of third party contained in the statute. Financial Responsibility Requirements for Licensed Launch Activities, NPRM, 61 FR 38992 (July 25, 1996). This is because employees of the USG are different than the USG as an entity. Because of this distinction, treating USG employees as third parties did not conflict with the statute.

In 2015, Congress explicitly excluded government astronauts from the definition of third parties. There is no legislative history to suggest that Congress also wanted the FAA to exclude government astronauts who are USG personnel from being protected as additional insureds. In fact, under the CSLCA, Congress made changes to the additional insureds requirement in 51 U.S.C. 50914(a)(4) by adding space flight participants as additional insureds but did not make any changes to explicitly exclude government astronauts. Therefore, government astronauts who are USG personnel should also be treated as additional insureds. The FAA need not make any changes to § 440.9(b) to include government astronauts because any government astronauts who are employees of the USG are necessarily

³ The NPRM proposed changing the definition of “government personnel” but the final rule is not adopting that change.

included as additional insureds by being government personnel.

B. Duplication of Requirements

This rule finalizes the proposal to create two new subparts in part 460 to address the training of government astronauts with safety-critical and non-safety-critical roles during licensed activity. The FAA revises the language in the proposal regarding training government astronauts to clarify that while an operator is responsible for ensuring that a government astronaut is appropriately trained, the operator itself is not required to conduct the training.

SpaceX commented that the FAA's proposed changes to part 460 would duplicate training requirements with no material increase to public safety and would place additional regulatory burden on operators. SpaceX argued that NASA's training requirements are sufficient and should automatically be accepted by the FAA. SpaceX also noted that it believes the NPRM could potentially conflict with NASA's or other government agencies' training requirements in the future. SpaceX stated that the FAA already recognizes the appropriateness of certain NASA training requirements by referring to them in the NPRM. SpaceX also noted that all or nearly all of the part 460 regulations could be met by current Crew Dragon training approved by NASA as part of the Commercial Crew Program. While SpaceX agreed with the FAA's statements in the NPRM that the FAA has broader regulatory authority to protect public safety, SpaceX does not believe the FAA has articulated why a streamlined acceptance of NASA training requirements is insufficient to protect public safety. To support its position, SpaceX stated that the part 450 payload review and determination requirements explicitly remove any duplication of government oversight in § 450.43(b) in which the FAA defers payload review to agencies with principal regulatory responsibility. SpaceX noted that the FAA should adopt the same approach as it relates to government astronaut training requirements in part 460. SpaceX recommended that the FAA revise the final rule to codify that its training requirements are "not intended to duplicate, conflict with, or replace NASA's training requirements for government astronauts" by following the § 450.43(b) model. SpaceX suggested a single update in § 460.59 applicable only to government astronauts that states "An operator must certify that each government astronaut is trained in accordance with requirements established or approved by the National

Aeronautics and Space Administration for government astronauts." SpaceX stated that these revisions will provide flexibility for any future updates to training processes with NASA or the incorporation of NASA-approved training regimens with other government agencies, both domestically and internationally.

Under 51 U.S.C. chapter 509, the FAA has the authority and responsibility to protect public safety during launches and reentries. NASA does not share this public safety oversight authority. Because government astronauts may have the ability to affect public safety, the FAA must establish regulations to mitigate any public safety risk. Furthermore, the FAA notes that NASA does not currently provide all government astronaut training for a commercially operated mission. An operator would provide vehicle- and mission-specific training because it is the most familiar with the specific vehicle and operation. The FAA chose to use part 460 crew training requirements to evaluate past licenses involving government astronauts because crew similarly have the capability to affect public safety. An operator can meet part 460 requirements by leveraging the contractual obligations between NASA and the operator. NASA contractual obligations require the operator to comply with requirements NASA uses to certify operations to the International Space Station contained in the Crew Transportation Technical Management Process CCT-PLN-1120 Section 6.3.1, Crew Transportation and Services Requirements Document CCT-REQ-1130 Section 3.8.5.1, and Crew Transportation Operations Standards CCT-STD-1150 Section 5. NASA certifies that government astronauts received the training required by contract, and the FAA uses that certification as verification that the operator meets the FAA regulations. NASA provides certification and the FAA evaluates the contractual requirements during the licensing process. The FAA notes that there will be no change to how licenses involving government astronauts are evaluated and issued as a result of this rule.

The payload review requirements in 14 CFR 450.43(b) specify that the FAA will not make a payload determination for those aspects of payloads that are subject to regulation by the Federal Communications Commission (FCC) or the Department of Commerce. The FAA will review all payloads to determine their effect on safety of launch but will not make a determination on those aspects of payloads that are subject to regulation by the FCC or the Department

of Commerce. *Streamlined Launch and Reentry License Requirements*, Final Rule, 85 FR 79566, 79589 (Dec. 10, 2020). Similarly, in this rule, the FAA finalizes requirements that allow the FAA to satisfy its responsibility to evaluate licenses for operations including government astronauts for the purposes of a government astronaut's potential to affect public safety.

While the FAA maintains its authority to issue regulations relating to the training of government astronauts to protect public safety, it acknowledges that the operator may not always be the entity conducting the training. For example, some training may be provided by NASA or by a contractor. Therefore, in this final rule the FAA changes the text in §§ 460.59 and 460.67 training sections for government astronauts from "an operator must train each government astronaut" to "an operator must ensure that each government astronaut is trained". Instead of requiring operators to train each government astronaut, the FAA rule specifies that an operator must ensure that training has been provided to each government astronaut. This change clarifies that operators do not necessarily need to be the entity providing the training; however, the requirement is still levied on the operator to ensure that government astronauts have been trained in accordance with the regulatory requirements.

C. Informed Consent of Government Astronauts

This final rule does not require government astronauts to sign informed consent forms with operators. Two commenters disagreed with this approach.

Virgin Galactic commented that not all potential government astronauts may be in the NASA Astronaut Corps or have the level of training to understand the inherent risks associated with spaceflight activities. Virgin Galactic also commented that there are several state statutes that protect licensees from liability when informed consent is provided.

Blue Origin commented that the requirements in § 460.45 are intended to illuminate the specific risks and hazards associated with the commercial safety record of each launch vehicle, as well as the general risks of spaceflight. Blue Origin noted that it remains prudent to provide government astronauts with the same information and opportunities for dialogue available to space flight participants. Blue Origin also recommended that government astronauts without safety-critical roles

be informed of the risks associated with spaceflight, similar to the informed consent space flight participants must provide. Blue Origin suggested that the FAA adopt language similar to § 460.45 in its proposed subpart D to apply the same requirement to government astronauts without a safety-critical role.

The FAA is not adding a requirement that government astronauts provide informed consent to the final rule because, as it stated in the NPRM, government astronauts are aware of the risks of space flight. As explained in the NPRM, the NASA Administrator designates government astronauts, and that designation implies appropriate knowledge and training for the performance of official duties. In addition, there is no statutory requirement for government astronauts to sign informed consent forms and doing so may interfere with their rights under the Federal Employees' Compensation Act. Therefore, the U.S. government should inform government astronauts of any risks they may be exposed to while performing official duties. This applies to all government astronauts, including those with a safety-critical role.

In response to Virgin Galactic's concern that state statutes protect licensees from liability when informed consent is provided, in most, if not all, of these states the respective statutes provide specific informed consent language that serves as a waiver of claims between the operator and the participant. The consideration of informed consent as a waiver of claims is further reason why a government astronaut should not sign an informed consent agreement with the operator because government astronauts do not waive claims.

In response to Blue Origin's comment that government astronauts should receive the same mission information and opportunity to discuss that information with the operator, the FAA notes that the fact that there is not a regulatory requirement for government astronauts to sign an informed consent form does not preclude operators from providing information to and speaking with government astronauts. An operator may inform a government astronaut about the unique risks and safety record of the vehicle, but the FAA will not require a government astronaut's signature on an informed consent agreement.

D. Moving Waiver of Claims Templates to an AC

This rule finalizes the proposal to move the templates for waiver of claims in appendix B through E of part 440 to

a separate advisory circular and adds language to clarify that these templates are approved by the FAA and may be used to meet the requirements in § 440.17.

SpaceX disagreed with moving the templates to a separate advisory circular. Specifically, SpaceX noted that the inclusion of cross-waivers in the part 440 appendices has streamlined negotiations related to cross-waivers between licensees or permittees and customers and has therefore also lessened FAA's burden to review cross-waiver submissions to ensure compliance with the regulations. SpaceX stated that although the current language of § 440.17 allows for submission of a "form that otherwise provides all the same obligations and benefits" as the cross-waivers contained in the part 440 appendices, as a practical matter, licensees simply submit the cross-waiver forms contained in the appendices. SpaceX emphasized that moving the sample forms out of an appendix into a separate advisory circular will be confusing to less frequent signers of cross-waivers and will encourage more negotiation between the licensee or permittee and the individuals or entities required to sign cross-waivers. SpaceX noted that any such negotiation that results in changes to the cross-waiver language will then add to the FAA's burden by requiring the FAA to spend additional time reviewing the submission to ensure compliance with § 440.17.

Sierra Space commented that the language proposed in § 440.17 could potentially be read to imply that the Administrator must approve the form used for the waivers in each case. Sierra Space recommended rewording the language in § 440.17 to clarify that review or approval by the Administrator is not required if a licensee adopts the language already set forth in a template published by the FAA.

An individual commented that they support the FAA's proposal to move the cross-waiver templates to an advisory circular because the templates are merely examples of how to meet a regulation and are not themselves regulatory.

This rule moves the waiver of claims templates from the part 440 appendices to an advisory circular because these templates are not regulatory, but simply examples, and moving them to an advisory circular provides greater flexibility to update or revise as needed. These templates are provided to assist operators with meeting the reciprocal waiver of claims requirements but are not the only means by which an operator may meet those requirements.

They are, therefore, more appropriately located in an advisory circular. SpaceX and Sierra Space commented that the language in the NPRM's proposed § 440.17 was not clear that the waiver of claims forms in the advisory circular would be acceptable and approved by the FAA without the need for additional legal review, unless modified. Therefore, the FAA is revising the language in § 440.17 to state: "The reciprocal waiver of claims must be in a form acceptable to the Administrator, such as those contained in advisory circular AC 440.17-1." This change will clarify that the reciprocal waiver of claims templates found in AC 440.17-1, or any future updates, are acceptable to the FAA and may be used to meet the requirements in § 440.17.

E. Government Astronauts on Permitted Operations

The final rule would not prohibit government astronauts from being onboard during permitted operations.⁴ Some commenters questioned whether government astronauts would ever be part of a permitted operation.

Ascendant Spaceflight Services (Ascendant) commented that the FAA should delete references to "government astronaut" in permitted operations because suborbital vehicles in the development or experimental phase would not be carrying government astronauts. Rather, those vehicles would only be carrying crew. Ascendant asserted that experimental permit human space flight requirements in § 437.5 only apply to crew.

The FAA does not agree. While § 437.5 does identify launch or reentry for the purpose of crew training as eligible for an experimental permit, § 437.5(b) states that eligibility for a permit also includes a showing of compliance with requirements for obtaining a license. An operator may choose to conduct an operation with government astronauts on board under an experimental permit to demonstrate compliance with a requirement to obtain a license. Although no government astronauts have flown on a permitted vehicle to date, it is possible they might in the future to train for a licensed mission.

F. Tracking Astronaut Training Requirements

The final rule revises proposed § 460.59(d)(1) to require operators ensure government astronaut training is up to date by incorporating lessons

⁴ Permitted operations are operations conducted in accordance with 14 CFR part 437 Experimental Permits.

learned from training and operational missions by providing traceability to revisions or changes. The proposed rule would have required operators to track each revision of the training plan and update training in writing.

The FAA received two comments on this issue. ALPA supported the FAA's proposals requiring operators to track and update the training of government astronauts. SpaceX, however, recommended providing more flexibility for tracking changes to training. SpaceX explained that it utilizes a sophisticated change control system to track updates to training and suggested revising proposed § 460.59(d)(1) to require an operator to update the government astronaut training continually to ensure the training incorporates lessons learned from training and operational missions by providing traceability to revisions or changes.

The FAA agrees with SpaceX's suggested change. Proposed § 460.59(d)(1) would require all revisions to training to be tracked in written form. The FAA finds that SpaceX's recommended change would provide FAA with sufficient compliance insight through traceability, which meets the intent of the FAA's initial proposed § 460.59(d)(1), while also permitting operators to use modern electronic systems. The FAA adopts SpaceX's proposed language in the final rule.

G. Environmental Controls

This rule finalizes the proposal to require operators to establish environmental controls for operations involving government astronauts with a safety-critical role because, as with crew, the FAA found that government astronauts would likewise need to be protected from atmospheric conditions and receive training that is necessary for the safety of the public on the ground, in air, and in space.

The FAA received two comments on this issue. An individual questioned whether environmental controls referred to life support systems or environmental impacts. Environmental controls in these regulations do refer to life support systems. SpaceX commented that humidity is not a safety-critical metric of determining suitable atmospheric conditions for human beings and that compared to other conditions listed within the subparts to § 460.61, humidity is an outlier given that it is not a direct risk to life and consciousness.

The FAA retains humidity in § 460.61(a)(2) in the final rule. The FAA notes that while very high humidity environments could influence core body

temperature, the time high humidity would take to cause an impact would be much longer than impacts from pressure and temperature changes in the inhabited area of a vehicle. However, if a flight crew depended on visual information through a window, humidity control would be necessary to avoid windows fogging and condensation that can hinder a pilot's vision and could therefore impact public safety.

H. Use of the Term "Human Beings"

In this rule, the FAA replaces the proposed term "human beings" with the defined terms "space flight participant," "crew," and "government astronaut" where appropriate. In the NPRM, the FAA proposed to use the term "human being" to encompass all three categories of persons who can currently be carried on board a vehicle: government astronaut, space flight participant, and crew.

The FAA received two comments on this issue. Sierra Space commented that the NPRM's use of the term "human beings" could potentially lead individuals, lawmakers, courts, and licensees to incorrectly assume that there is some other category of humans who may be present on board licensed operations besides those that have already been defined (space flight participants, crew, and government astronauts). Sierra Space stated that the FAA should remove the use of "human beings" and instead revert to listing each category of individuals to which the language applies. An individual similarly commented that the classification of non-astronaut workers as "human beings" is an unnecessary classification that would only overcomplicate future requirements on these workers.

The FAA finds that using the term "human beings" could cause unnecessary confusion among stakeholders and therefore is removing that term in the final rule. Instead, the FAA is replacing "human beings" with the defined terms "space flight participant," "crew," and "government astronaut" where appropriate.

I. Aeronautical Knowledge Requirement

This rule finalizes proposed § 460.59(b)(3), which requires an operator to ensure any government astronaut with a safety-critical role possesses aeronautical knowledge, experience, and skills necessary to pilot and control the launch or reentry vehicle that will operate in the National Airspace System (NAS). The regulation specifies that aeronautical experience

may include hours in flight, ratings, and training.

SpaceX commented that proposed § 460.59(b)(3) would transfer an existing requirement onto operators to ensure government astronauts are trained, and that NASA should continue to hold this responsibility and set forth any requirements it deems suitable for designated astronauts as set forth in 51 U.S.C. 50902(4). To support its position, SpaceX noted that the training requirement is tailored to winged vehicles rather than fully automated capsules, such as its Crew Dragon, which are not maneuverable during launch and reentry, and which utilize Notices to Air Missions and Notices to Mariners to remove the need for in-flight and real-time coordination within airspace. SpaceX therefore found that the aeronautical knowledge, including hours in aircraft flight, required by proposed § 460.59(b)(3) is irrelevant to safe vehicle operation and recommended that FAA remove this requirement as overly prescriptive and inapplicable.

The FAA disagrees that proposed § 460.59(b)(3) should be removed from the final rule. The requirement for aeronautical knowledge only applies to government astronauts who have the capability to control, in real time, a launch or reentry vehicle's flight path during a phase of flight capable of endangering the public. The requirement is not a blanket requirement for all government astronauts. Autonomous vehicles where government astronauts do not have any input for phases of flight going through the NAS would not need to comply with this requirement as such aeronautical knowledge, experience, and skills would not be necessary. Any NASA requirement for aeronautical knowledge for government astronauts that pilot a vehicle is not redundant because it can be used to demonstrate compliance with the FAA requirement.

J. Permit Eligibility

This rule finalizes the proposal to replace the term "reusable suborbital rocket" with "reusable suborbital vehicle" in § 437.5. It also finalizes the proposal to remove the term "new" from § 437.5(a) to allow research and development of existing design concepts, equipment, or operating techniques, consistent with the CSLCA.

Ascendant commented that experimental permits should not be limited to suborbital launch vehicles. Ascendant stated that there is no difference in risk to the public between any experimental launch or reentry vehicle, suborbital or orbital, which

does not carry commercial payloads and paid occupants. Ascendant noted that the limited applicability of experimental permits places additional burden on developers of orbital or expendable suborbital vehicles which require licenses before test flight can begin. Ascendant also asked for clarification regarding whether the training referenced in § 437.5 refers to training crew in flight to operate a licensed vehicle, or training crew to operate a vehicle for which a license would be issued (for example, to complete integrated testing with humans).

The training referenced in § 437.5 refers to training crew in flight to operate a licensed vehicle. The FAA's statutory authority to issue experimental permits only applies to suborbital vehicles, and therefore the FAA does not have the authority to expand the applicability of experimental permits to any orbital vehicles. Title 51 U.S.C. 50906 states that the Secretary may issue a permit only for reusable suborbital rockets or reusable launch vehicles that will be launched into a suborbital trajectory or reentered under that permit solely for research and development to test design concepts, equipment, or operating techniques; showing compliance with requirements as part of the process for obtaining a license under this chapter; or crew training for a launch or reentry using the design of the rocket or vehicle for which the permit would be issued. The FAA is only expanding eligibility to launch or reentry vehicles on a suborbital trajectory to align with the CSLCA. Therefore, the FAA will not expand the applicability of experimental permits to any orbital vehicles.

K. Government Astronauts on Foreign Vehicles

This rule defines "government astronaut" to match the statutory definition and provides regulatory clarity to applicants seeking FAA licenses for space flight operations involving government astronauts.

An individual commented that it may be beneficial to acknowledge U.S. government astronauts flying on board international partner spacecraft and international launch providers. The individual noted that the International Space Station (ISS) currently uses Soyuz vehicles from Russia and that there could be advances in vehicles from ESA and JAXA, for example.

The FAA does not license foreign launch or reentry vehicles that are launching or reentering outside the U.S., and therefore addressing government astronauts flying on board foreign spacecraft that launch or reenter outside

the U.S. is outside the scope of the FAA's regulatory authority and this rulemaking.

L. Clarification on the Role of International Partner Astronauts

This rule defines an "International partner astronaut" as an individual designated under Article 11 of the International Space Station Intergovernmental Agreement, by a partner to that agreement other than the U.S., as qualified to serve as an ISS crew member. This definition was taken directly from the CSLCA.

Sierra Space encouraged the FAA to further clarify the role of international partner astronauts, including clarifying who would not qualify as an international partner astronaut. Sierra Space stated that since the NPRM's definition of "international partner astronaut" applies only to astronauts contributed by ISS partner states who are crewmembers on board the ISS, the term would not apply to international astronauts from non-partner states, nor would it apply to any international astronaut serving missions unrelated to the ISS. Sierra Space concluded that all such individuals would be considered space flight participants under the proposed regulations and would therefore be subject to the waiver and informed consent requirements applicable to space flight participants.

Sierra Space noted that there may be cases in which foreign governments may be unwilling to allow or require their employees to enter the waivers of claims required of space flight participants, or to personally assume the risk of human space flight operations as required by the informed consent regime. Sierra Space stated that the FAA should consider granting latitude to operators carrying astronauts from foreign countries by waiving informed consent and individual waiver requirements, especially if those countries have sufficiently mature astronaut training programs and are willing to accept financial responsibility for claims brought by their employees.

The FAA is adopting the statutory definition of international partner astronaut. The FAA realizes that the statutory definition only applies to ISS partner astronauts. Any foreign astronaut who does not meet the definition of international partner astronaut would be considered a space flight participant under FAA regulations and would have to comply with space flight participant regulations. An operator may request a waiver to the waiver of claims requirement for space flight participants for those instances in which a foreign astronaut is

characterized as a space flight participant rather than an international partner astronaut.

M. Training of Space Flight Participants for Safety Critical Roles

SpaceX commented that, in the interest of public safety and the safety of those on board launch and reentry vehicles, the FAA should update the final rule to reflect in its regulations that space flight participants should be trained appropriately to conduct potentially lifesaving functions during an emergency to protect both themselves and the public, including operating a vehicle during launch or reentry in a manner to protect public safety. SpaceX noted that the definitions for crew, government astronaut, and space flight participant within 51 U.S.C. 50902 were developed at a time when Congress anticipated all crewed vehicles to be operated either by crew or by government astronauts. However, SpaceX noted that while the statute provides training for crew and government astronauts, missions that have only had space flight participants on board have occurred for both orbital and suborbital systems. Furthermore, SpaceX stated that the statutory definition of space flight participants, defined in 51 U.S.C. 50902 to be any person that is not crew or a government astronaut, does not prohibit the FAA from requiring an operator to train space flight participants to operate a vehicle during launch or reentry. SpaceX concluded that, therefore, the FAA should revise its regulations to allow an operator to train space flight participants to operate a vehicle during launch or reentry because the underlying statute does not prohibit space flight participant training.

Sierra Space similarly commented that the FAA should adopt common requirements for training which apply to any passenger or remote operator in a safety critical role, regardless of how that individual is classified under the regulations. Sierra Space stated these common requirements should clarify what constitutes a "safety-critical role" to limit the definition to those individuals who are essential to ensuring that the vehicle operates in real time to ensure public safety.

In the NPRM, the FAA did not propose to add training requirements for space flight participants. The FAA explained that whereas the definition of crew in title 51 expressly acknowledges a crew member's ability to perform activities directly relating to operation of the vehicle, the definition of space flight participant contains no express authority to do so. Furthermore, current

crew qualification and training requirements include a demonstration of the ability to withstand the stresses of space in sufficient condition to safely carry out duties so the vehicle will not harm the public. Each crew member with a safety-critical role is also required to possess and carry an FAA second-class medical certificate. Similarly, government astronauts who perform a safety-critical role must be trained to carry out that role because it may affect the safety of the public. An operator may choose to train space flight participants to conduct potentially lifesaving functions during an emergency to protect themselves, however, the regulations do not require this training because it is not necessary to protect public safety.

The FAA has already addressed training requirements for those missions that only have space flight participants onboard. Under § 460.51, an operator must train each space flight participant before flight on how to respond to emergency situations, including smoke, fire, loss of cabin pressure, and emergency exits. An operator may also provide mission-specific training to space flight participants for missions without crew or government astronauts. The FAA therefore finds that the training required by § 460.51 is sufficient to satisfy missions with only space flight participants on board.

N. Use of ANSI Standard for Human Spaceflight Ontology

This rule updates definitions relating to commercial space launch and reentry vehicles and occupants to reflect current legislative definitions.

Both the Space Infrastructure Foundation (SIF) and an individual commented that the FAA should use terms identified in AIAA/ANSI S-153 2021 Human Spaceflight: Spacecraft Architecture and Systems Engineering Ontology Standard (S-153) in its applicable commercial space regulations.

SIF stated that because the National Technology Transfer Advancement Act (NTTAA) compels government organizations to adopt industry standards developed under a voluntary consensus process, and failure to do so must be justified to Congress on a case-by-case basis, the FAA should use the standards identified in S-153. An individual stated that S-153 is critical for U.S. commercial spaceflight because it establishes the baseline of the ontology, streamlines interdisciplinary communication, and enables strategic planning, and the FAA should consider S-153's integration into the current rulemaking.

The FAA does not adopt S-153 into its regulations because the updated definitions are required by Congress to reflect current legislative definitions in 51 U.S. Code 50902. Furthermore, the terminology in S-153 does not align with the purpose of this rulemaking because the terminology in S-153 focuses on human spaceflight spacecraft from an architectural and system engineering perspective, rather than on the statutorily required definitions the FAA must incorporate into its regulations.

O. Transparency of MPL Methodology

An individual commented that publishing the MPL methodology would provide greater transparency and reduce uncertainty for commercial space businesses, insurance companies, and investors. The commenter noted that this transparency would pose no risks to national security and that publishing the MPL methodology in an AC would not require notice and comment for modification. The commenter recommended amending § 440.7(a) or (b) to include that the method for determining MPL is set forth in an AC.

The scope of this rulemaking is to codify current statutory requirements mandated by the CSLCA. The FAA finds that providing MPL methodology in an AC is beyond the scope of the rulemaking because it is not a change required by the CSLCA, and this final rule does not pertain to MPL methodology.

P. Commercial Use of Asteroid or Space Resources

Space Law & Policy Solutions noted that the CSLCA contains a provision in title IV which authorizes U.S. citizens to perform non-governmental space activities aimed at the recovery, possession, ownership, use, and sale of asteroid or space resources. Space Law & Policy Solutions noted that the NPRM does not mention title IV nor its enactment in 51 U.S.C. 51303 and asked the FAA a series of related questions. Such questions included (i) why space resources are not mentioned in the NPRM; (ii) whether the FAA deems title IV of the CSLCA as providing the FAA with congressional authority to license space resource activities and if so, whether an amendment is required to its regulations; (iii) whether the FAA deems itself the proper Article VI authorizing agency to review and license a space resource activity; and (iv) whether the FAA believes it requires additional authority from Congress to include on orbit authority to oversee space resource activities. Space Law & Policy Solutions noted that it

understands its questions are beyond the scope of the FAA's request in the NPRM, but that the FAA should address the lack of clarity on the licensing and implementation of space resources.

The FAA does not have statutory authority to regulate space resources, and the commenter's questions are out of scope for the current rulemaking.

V. Regulatory Notices and Analyses

Federal agencies consider impacts of regulatory actions under a variety of Executive orders and other requirements. First, Executive Order 12866, Executive Order 13563, and Executive Order 14094 ("Modernizing Regulatory Review"), direct that each Federal agency shall propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify the costs. Second, the Regulatory Flexibility Act of 1980 (Pub. L. 96-354) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (Pub. L. 96-39) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. Fourth, the Unfunded Mandates Reform Act of 1995 (Pub. L. 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 that may result in the expenditure by State, local, and Tribal governments, in the aggregate, or by the private sector, of \$100 million or more (adjusted annually for inflation) in any one year. The current threshold after adjustment for inflation is \$183 million using the most current (2023) Implicit Price Deflator for the Gross Domestic Product.

In conducting these analyses, the FAA has determined that this rule: will result in benefits that justify costs; is not a "significant regulatory action" as defined in section 3(f) of Executive Order 12866, as amended; will not have a significant economic impact on a substantial number of small entities; will not create unnecessary obstacles to the foreign commerce of the United States; and will not impose an unfunded mandate on State, local, or Tribal governments, or on the private sector.

A. Regulatory Impact Analysis

This rule amends 14 CFR parts 401, 413, 415, 431, 435, 437, 440, 450, and 460 by incorporating statutory changes resulting from the CSLCA. This rule adds a definition for "government astronaut" and updates other definitions to account for that addition. This rule also updates financial responsibility

requirements in part 440 to exclude government astronauts from the definitions of “third party” and adds space flight participants to the insurance requirements in § 440.9. Templates for reciprocal waiver of claims agreements are moved from part 440 appendices B through E to an AC. This rule also adds two new subparts to part 460 to address operator requirements for government astronauts playing safety-critical and non-safety-critical roles during launches and

reentries. In addition, the FAA replaces the terms “crew” and “space flight participant” with “crew, space flight participant, or government astronaut” in §§ 415.8, 431.8, and 435.8 for applicants seeking a license for operations involving human space flight and that must demonstrate compliance with human space flight requirements. This change accommodates the creation of the government astronaut category in part 460.

This rule affects all U.S. commercial space operators and launches and reentries licensed under 14 CFR parts 401, 413, 415, 431, 435, 437, 440, 450, and 460 that will carry a government astronaut on board. Table 1 details the changes in each part.

There are no changes in the final rule from the proposed rule that notably change the analysis presented for the proposed rule.

TABLE 1—CHANGES BY SECTION

Section	Change	Effect of change
§ 401.5 Definitions	Add definitions for “Government Astronaut,” “International partner astronaut,” and “International Space Station Intergovernmental Agreement.” Revising definitions for “Human space flight incident,” “Launch,” “Launch accident,” “Reenter,” “Reentry accident,” and “Space flight participant”.	None. The FAA has been applying these definitions in accordance with the statute since the CSLCA went into effect. This change provides regulatory clarity.
§ 401.7 Definitions	Add definitions for “Government Astronaut,” “International partner astronaut,” and “International Space Station Intergovernmental Agreement.” Revising definition for “Space flight participant”.	None. The FAA has been applying these definitions in accordance with the statute since the CSLCA went into effect. This change provides regulatory clarity.
§ 413.3(f)	Replace the term “rocket” with the term “vehicle” to align with the increase in scope from § 437.3.	None. The FAA has been applying these definitions in accordance with the statute since the CSLCA went into effect. This change provides regulatory clarity.
§ 415.8 Human Space Flight in Part 415, LAUNCH LICENSE.	Replace “flight crew or a space flight participant” with “a space flight participant, crew, or government astronaut.” Add sections 460.59, 460.61, and 460.67 to the list of sections with which an applicant proposing to conduct a launch with a space flight participant, crew, or government astronaut on board must demonstrate compliance.	None. The FAA has been applying these requirements to government astronauts in accordance with the statute since the CSLCA went into effect. This change provides regulatory clarity.
§ 431.8 Human Space Flight in Part 431, LAUNCH AND REENTRY OF A REUSABLE LAUNCH VEHICLE (RLV).	Replace “flight crew or a space flight participant” with “a space flight participant, crew, or government astronaut.” Add sections 460.59, 460.61, and 460.67 to the list of sections with which an applicant proposing to conduct a launch with a space flight participant, crew, or government astronaut on board must demonstrate compliance.	None. The FAA has been applying these requirements to government astronauts in accordance with the statute since the CSLCA went into effect. This change provides regulatory clarity.
§ 435.8 Human Space Flight in Part 435, REENTRY OF A REENTRY VEHICLE OTHER THAN A REUSABLE LAUNCH VEHICLE (RLV).	Replace “flight crew or a space flight participant” with “a space flight participant, crew, or government astronaut.” Add sections 460.59, 460.61, and 460.67 to the list of sections with which an applicant proposing to conduct a launch with a space flight participant, crew, or government astronaut on board must demonstrate compliance.	None. The FAA has been applying these requirements to government astronauts in accordance with the statute since the CSLCA went into effect. This change provides regulatory clarity.
§ 437.3 Definitions in Part 437, EXPERIMENTAL PERMITS.	Replaced suborbital rocket with suborbital vehicle in the definitions for “envelope expansion”, “exclusion area”, and “reentry impact point”. Updated the definition of “permitted vehicle” to include reusable launch vehicles that are launched on a suborbital trajectory or are reentered. Updated the definition of “permitted vehicle” to add that it includes “a reusable launch vehicle that will be launched into a suborbital trajectory or reentered from a suborbital trajectory”.	None. The FAA has been applying these definitions in accordance with the statute since the CSLCA went into effect. This change provides regulatory clarity.
§§ 437.5, 437.7, 437.9, 437.21, 437.23, 437.25, 437.31, 437.33, 437.53, 437.57, 437.59, 437.61, 437.71, 437.85., 437.91, and 437.95.	Replace “suborbital rocket” with “reusable suborbital vehicle”.	None. The FAA has been applying these definitions in accordance with the statute since the CSLCA went into effect. This change provides regulatory clarity.
§ 437.5(a)	Remove “new” to allow research and development of existing design concepts, equipment, or operating techniques.	None. The FAA has been applying these definitions in accordance with the statute since the CSLCA went into effect. This change provides regulatory clarity.
§ 437.21(b)(3)	Replace “flight crew or a space flight participant” with “a space flight participant, crew, or government astronaut.” Add sections 460.59, 460.61, and 460.67 to the list of sections with which an applicant proposing to conduct a launch with a space flight participant, crew, or government astronaut on board must demonstrate compliance.	None. The FAA has been applying these requirements to government astronauts in accordance with the statute since the CSLCA went into effect. This change provides regulatory clarity.
Move appendices B–E in part 440, FINANCIAL RESPONSIBILITY, to an AC..		None.

TABLE 1—CHANGES BY SECTION—Continued

Section	Change	Effect of change
§ 440.3	Revise definition of permit and permitted activity. Exclude government astronaut from losses to government personnel in the definition of “MPL”. Exclude government astronaut from the definition of “Third party”.	None. Updates to the definition of permit and permitted activity align statute with current practice. Excluding government astronaut from third party means that they are not included in MPL calculations and are prevented from making claims as third parties in alignment with current practice. Government astronauts that are employed by the US government would be covered by insurance required under § 440.9(b) because they are government personnel.
§ 440.9(b)	Add space flight participants to the list in which a licensee or permittee must obtain and maintain in effect a policy or policies of liability insurance to protect their respective potential liabilities against covered claims by a third party for bodily injury or property damage resulting from a licensed or permitted activity.	None. The FAA has been requiring the addition of space flight participants to the insurance requirements with operators in accordance with the statute since the CSLCA went into effect. This change provides regulatory clarity.
§ 440.17(c), (d), and (e)	Add language to require the licensee or permittee to enter into a reciprocal waiver of claims agreement, in a form acceptable to the Administrator such as those contained in advisory circular AC 440.17–1, with each space flight participant.	None. The FAA has been requiring reciprocal waiver of claims in accordance with existing regulations. This change provides regulatory flexibility by moving the templates from regulatory language to an advisory circular.
§ 440.17(f) and (g)	Add requirement for reciprocal waiver of claims between operators and space flight participants as section (f). Move current section (f) to section (g).	None. The FAA has been requiring reciprocal waiver of claims between operators and space flight participants in accordance with the statute since the CSLCA went into effect. This change provides regulatory clarity. Current section (f) is moved to section (g) without changes to accommodate the addition of section (f).
§ 450.45(e)(3)(ii)(E) Human Space Flight in part 450	Replace “rocket’s” with “vehicle’s”	None. The FAA has been applying these definitions in accordance with the statute since the CSLCA went into effect. This change provides regulatory clarity.
§ 450.45(e)(5)	Replace “flight crew or a space flight participant” with “a space flight participant, crew, or government astronaut.” Add sections 460.59, 460.61, and 460.67 to the list of sections with which an applicant proposing to conduct a launch with a space flight participant, crew, or government astronaut on board must demonstrate compliance.	None. The FAA has been applying these requirements in accordance with the statute since the CSLCA went into effect. This change provides regulatory clarity.
Add Subpart C, Launch and Reentry with a Government Astronaut With a Safety-Critical Role, after Subpart B in § 460 Scope, HUMAN SPACE FLIGHT REQUIREMENTS.	Add requirements applicable to government astronauts with a safety-critical role.	None. Operators have been training government astronauts in order to satisfy NASA contractual requirements. This change makes some of that training required by regulation.
Add Subpart D, Launch and Reentry with a Government Astronaut Without a Safety-Critical Role after Subpart C in § 460 Scope, HUMAN SPACE FLIGHT REQUIREMENTS.	Add requirements applicable to government astronauts without a safety-critical role.	None. Operators have been training government astronauts in order to satisfy NASA contractual requirements. This change makes some of that training required by regulation.

These changes will have a minimal impact on licensed commercial space activity with government astronauts because the changes align regulations with the current statutory requirements for crew, for space flight participants, and with current practices. The FAA has been applying the statutory changes since they went into effect in 2015. Since this rule codifies these current practices, there is effectively no change from the baseline without the rule and, therefore, no measurable resulting benefits or costs.

B. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) of 1980, (5 U.S.C. 601–612), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121) and the Small Business Jobs Act of 2010 (Pub. L. 111–240), requires Federal agencies to consider the effects of the regulatory action on small

business and other small entities and to minimize any significant economic impact. The term “small entities” comprises small businesses and not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000.

This rule updates definitions relating to commercial space launch and reentry vehicles and occupants to reflect current statutory definitions and requirements, as well as implements clarifications to financial responsibility requirements in accordance with the CSLCA. The FAA has been applying the statutory changes since they went into effect in 2015. Since this rule codifies these current practices, the FAA certifies that this rule 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 (Pub. L. 96–39), as amended by the Uruguay Round Agreements Act (Pub. L. 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. The FAA has assessed

the potential effects of this rule and determined that it will not create unnecessary obstacles to the foreign commerce of the United States.

D. Unfunded Mandates Assessment

The Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531–1538) governs the issuance of Federal regulations that require unfunded mandates. An unfunded mandate is a regulation that requires a State, local, or Tribal government or the private sector to incur direct costs without the Federal Government having first provided the funds to pay those costs. The FAA determined that this final rule will not result in the expenditure of \$183 million or more by State, local, or Tribal governments, in the aggregate, or the private sector, in any one year.

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.

F. Environmental Analysis

FAA Order 1050.1F identifies FAA actions that are categorically excluded from preparation of an environmental assessment or environmental impact statement under the National Environmental Policy Act (NEPA) in the absence of extraordinary circumstances. The FAA has determined this rulemaking action qualifies for the categorical exclusion identified in paragraph 5–6.6f for regulations and involves no extraordinary circumstances.

VI. Executive Order Determinations

A. Executive Order 13132, Federalism

The FAA has analyzed this final rule under the principles and criteria of Executive Order (E.O.) 13132, Federalism. The FAA has 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, will not have federalism implications.

B. Executive Order 13175, Consultation and Coordination With Indian Tribal Governments

Consistent with Executive Order 13175, Consultation and Coordination

with Indian Tribal Governments,⁵ and FAA Order 1210.20, American Indian and Alaska Native Tribal Consultation Policy and Procedures,⁶ the FAA ensures that Federally Recognized Tribes (Tribes) are given the opportunity to provide meaningful and timely input regarding proposed Federal actions that have the potential to have substantial direct effects on one or more Indian Tribes, on the relationship between the Federal Government and Indian Tribes, or on the distribution of power and responsibilities between the Federal Government and Indian Tribes; or to affect uniquely or significantly their respective Tribes. At this point, the FAA has not identified any unique or significant effects, environmental or otherwise, on Tribes resulting from this final rule.

C. Executive Order 13211, Regulations That Significantly Affect Energy Supply, Distribution, or Use

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

D. Executive Order 13609, Promoting International Regulatory Cooperation

Executive Order 13609, Promoting International Regulatory Cooperation, promotes international regulatory cooperation to meet shared challenges involving health, safety, labor, security, environmental, and other issues and to reduce, eliminate, or prevent unnecessary differences in regulatory requirements. The FAA has analyzed this action under the policies and agency responsibilities of Executive Order 13609, and has determined that this action will have no effect on international regulatory cooperation.

VII. Additional Information

A. Electronic Access and Filing

A copy of the NPRM, all comments received, this final rule, and all background material may be viewed online at www.regulations.gov using the docket number listed above. A copy of this final rule will be placed in the docket. Electronic retrieval help and guidelines are available on the website. It is available 24 hours each day, 365 days each year. An electronic copy of

this document may also be downloaded from the Office of the Federal Register’s website at www.federalregister.gov and the Government Publishing Office’s website at www.govinfo.gov. A copy may also be found at the FAA’s Regulations and Policies website at www.faa.gov/regulations_policies.

Copies may also be obtained by sending a request to the Federal Aviation Administration, Office of Rulemaking, ARM–1, 800 Independence Avenue SW, Washington, DC 20591, or by calling (202) 267–9677. Commenters must identify the docket or notice number of this rulemaking.

All documents the FAA considered in developing this final rule, including economic analyses and technical reports, may be accessed in the electronic docket for this rulemaking.

B. 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 www.faa.gov/regulations_policies/rulemaking/sbre_act/.

List of Subjects

14 CFR Part 401

Organization and functions (Government agencies), Space transportation and exploration.

14 CFR Part 413

Confidential business information, Space transportation and exploration.

14 CFR Part 415

Aviation safety, Environmental protection, Investigations, Reporting and recordkeeping requirements, Space transportation and exploration.

14 CFR Part 431

Launch and reentry safety, Aviation safety, Reporting and recordkeeping requirements, Rockets, Space transportation and exploration.

14 CFR Part 435

Launch and reentry safety, Aviation safety, Reporting and recordkeeping requirements, Rockets, Space transportation and exploration.

⁵ 65 FR 67249 (Nov. 6, 2000).

⁶ FAA Order No. 1210.20 (Jan. 28, 2004), available at www.faa.gov/documentLibrary/media/1210.pdf.

14 CFR Part 437

Aircraft, Aviation safety, Reporting and recordkeeping requirements, Space transportation and exploration.

14 CFR Part 440

Indemnity payments, Insurance, Reporting and recordkeeping requirements, Space transportation and exploration.

14 CFR Part 450

Aircraft, Aviation safety, Environmental protection, Investigations, Reporting and recordkeeping requirements, Space transportation and exploration.

14 CFR Part 460

Aircraft, Reporting and recordkeeping requirements, Space transportation and exploration.

The Amendments

For the reasons discussed in the preamble, the Federal Aviation Administration amends chapter III of title 14, Code of Federal Regulations as follows:

PART 401—ORGANIZATION AND DEFINITIONS

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

Authority: 51 U.S.C. 50901–50923.

■ 2. Amend § 401.5 by:

- a. Adding definitions in alphabetical order for “Government astronaut”, “International partner astronaut”, and “International Space Station Intergovernmental Agreement”; and
■ b. Revising the definitions for “Human space flight incident”, “Launch”, “Launch accident”, “Reenter; reentry”, “Reentry accident”, and “Space Flight participant”.

The additions and revisions read as follows:

§ 401.5 Definitions.

* * * * *

Government astronaut means an individual who—

(1) Is designated by the National Aeronautics and Space Administration under Title 51, United States Code, Section 20113(n);

(2) Is carried within a launch vehicle or reentry vehicle in the course of their employment, which may include performance of activities directly relating to the launch, reentry, or other operation of the launch vehicle or reentry vehicle; and

(3) Is either—

(i) An employee of the United States Government, including the uniformed services, engaged in the performance of

a Federal function under authority of law or an Executive act; or

(ii) An international partner astronaut.

* * * * *

Human space flight incident means an unplanned event that poses a high risk of causing a serious or fatal injury to a space flight participant, crew, or government astronaut.

* * * * *

International partner astronaut means an individual designated under Article 11 of the International Space Station Intergovernmental Agreement, by a partner to that agreement other than the United States, as qualified to serve as an International Space Station crew member.

International Space Station Intergovernmental Agreement means the Agreement Concerning Cooperation on the International Space Station, signed in Washington, DC, on January 29, 1998 (TIAS 12927).

* * * * *

Launch means to place or try to place a launch vehicle or reentry vehicle and any payload, space flight participant, crew, or government astronaut from Earth in a suborbital trajectory, in Earth orbit in outer space, or otherwise in outer space, and includes preparing a launch vehicle for flight at a launch site in the United States. Launch includes the flight of a launch vehicle and includes pre- and post-flight ground operations as follows:

(1) Beginning of launch. (i) Under a license, launch begins with the arrival of a launch vehicle or payload at a U.S. launch site.

(ii) Under a permit, launch begins when any pre-flight ground operation at a U.S. launch site meets all of the following criteria:

(A) Is closely proximate in time to flight,

(B) Entails critical steps preparatory to initiating flight,

(C) Is unique to space launch, and

(D) Is inherently so hazardous as to warrant the FAA’s regulatory oversight.

(2) End of launch. (i) For launch of an orbital expendable launch vehicle (ELV), launch ends after the licensee’s last exercise of control over its launch vehicle.

(ii) For launch of an orbital reusable launch vehicle (RLV) with a payload, launch ends after deployment of the payload. For any other orbital RLV, launch ends upon completion of the first sustained, steady-state orbit of an RLV at its intended location.

(iii) For a suborbital ELV or RLV launch, launch ends after reaching apogee if the flight includes a reentry, or otherwise after vehicle landing or

impact on Earth, and after activities necessary to return the vehicle to a safe condition on the ground.

Launch accident means—

(1) An event that causes a fatality or serious injury (as defined in 49 CFR 830.2) to any person who is not associated with the flight;

(2) An event that causes damage estimated to exceed \$25,000 to property not associated with the flight that is not located at the launch site or designated recovery area;

(3) An unplanned event occurring during the flight of a launch vehicle resulting in the impact of a launch vehicle, its payload, or any component thereof;

(i) For an expendable launch vehicle, outside designated impact limit lines; and

(ii) For a reusable launch vehicle, outside a designated landing site.

(4) For a launch that takes place with a person on board, a fatality or serious injury to a space flight participant, crew, or government astronaut.

* * * * *

Reenter; reentry means to return or attempt to return, purposefully, a reentry vehicle and its payload, space flight participant, crew, or government astronaut, if any, from Earth orbit or from outer space to Earth. The term “reenter; reentry” includes activities conducted in Earth orbit or outer space to determine reentry readiness and that are critical to ensuring public health and safety and the safety of property during reentry flight. The term “reenter; reentry” also includes activities conducted on the ground after vehicle landing on Earth to ensure the reentry vehicle does not pose a threat to public health and safety or the safety of property.

Reentry accident means—

(1) Any unplanned event occurring during the reentry of a reentry vehicle resulting in the impact of the reentry vehicle, its payload, or any component thereof, outside a designated reentry site;

(2) An event that causes a fatality or serious injury (as defined in 49 CFR 830.2) to any person who is not associated with the reentry;

(3) An event that causes damage estimated to exceed \$25,000 to property not associated with the reentry and not located within a designated reentry site; and

(4) For a reentry that takes place with a person on board, a fatality or serious injury to a space flight participant, crew, or government astronaut.

* * * * *

Space flight participant means an individual, who is not crew or a

government astronaut, carried on board a launch vehicle or reentry vehicle.

* * * * *

■ 3. Amend § 401.7 by:

- a. Adding definitions in alphabetical order for "Government astronaut", "International partner astronaut", and "International Space Station Intergovernmental Agreement"; and
■ b. Revising the definition for "Space flight participant".

The additions and revision read as follows:

§ 401.7 Definitions.

* * * * *

Government astronaut means an individual who—

(1) Is designated by the National Aeronautics and Space Administration under Title 51, United States Code, Section 20113(n);

(2) Is carried within a launch vehicle or reentry vehicle in the course of their employment, which may include performance of activities directly relating to the launch, reentry, or other operation of the launch vehicle or reentry vehicle; and

(3) Is either—

(i) An employee of the United States Government, including the uniformed services, engaged in the performance of a Federal function under authority of law or an Executive act; or

(ii) An international partner astronaut.

* * * * *

International partner astronaut means an individual designated under Article 11 of the International Space Station Intergovernmental Agreement, by a partner to that agreement other than the United States, as qualified to serve as an International Space Station crew member.

International Space Station

Intergovernmental Agreement means the Agreement Concerning Cooperation on the International Space Station, signed in Washington, DC, on January 29, 1998 (TIAS 12927).

* * * * *

Space flight participant means an individual, who is not crew or a government astronaut, carried on board a launch vehicle or reentry vehicle.

* * * * *

PART 413—LICENSE APPLICATION PROCEDURES

■ 4. The authority citation for part 413 continues to read as follows:

Authority: 51 U.S.C. 50901–50923.

■ 5. Amend § 413.3 by revising paragraph (f) to read as follows:

§ 413.3 Who must obtain a license or permit.

* * * * *

(f) A person, individual, or foreign entity otherwise requiring a license under this section may instead obtain an experimental permit to launch or reenter a reusable suborbital vehicle under part 437 of this chapter.

PART 415—LAUNCH LICENSE

■ 6. The authority citation for part 415 continues to read as follows:

Authority: 51 U.S.C. 50901–50923.

■ 7. Revise § 415.8 to read as follows:

§ 415.8 Human space flight.

To obtain a launch license, an applicant proposing to conduct a launch with a space flight participant, crew, or government astronaut on board must demonstrate compliance with §§ 460.5, 460.7, 460.11, 460.13, 460.15, 460.17, 460.51, 460.53, 460.59, 460.61, and 460.67 of this subchapter.

PART 431—LAUNCH AND REENTRY OF A REUSABLE LAUNCH VEHICLE (RLV)

■ 8. The authority citation for part 431 continues to read as follows:

Authority: 51 U.S.C. 50901–50923.

■ 9. Revise § 431.8 to read as follows:

§ 431.8 Human space flight.

To obtain a license, an applicant proposing to conduct a reusable launch vehicle mission with a space flight participant, crew, or government astronaut on board must demonstrate compliance with §§ 460.5, 460.7, 460.11, 460.13, 460.15, 460.17, 460.51, 460.53, 460.59, 460.61, and 460.67 of this subchapter.

PART 435—REENTRY OF A REENTRY VEHICLE OTHER THAN A REUSABLE LAUNCH VEHICLE (RLV)

■ 10. The authority citation for part 435 continues to read as follows:

Authority: 51 U.S.C. 50901–50923.

■ 11. Revise § 435.8 to read as follows:

§ 435.8 Human space flight.

To obtain a reentry license, an applicant proposing to conduct a reentry with a space flight participant, crew, or government astronaut on board the vehicle must demonstrate compliance with §§ 460.5, 460.7, 460.11, 460.13, 460.15, 460.17, 460.51, 460.53, 460.59, 460.61, and 460.67 of this subchapter.

PART 437—EXPERIMENTAL PERMITS

■ 12. The authority citation for part 437 continues to read as follows:

Authority: 51 U.S.C. 50901–50923.

■ 13. Revise § 437.3 to read as follows:

§ 437.3 Definitions.

Envelope expansion means any portion of a flight where planned operations will subject a reusable suborbital vehicle to the effects of altitude, velocity, acceleration, or burn duration that exceed a level or duration successfully verified during an earlier flight.

Exclusion area means an area, within an operating area, that a reusable suborbital vehicle's instantaneous impact point may not traverse.

Operating area means a three-dimensional region where permitted flights may take place.

Permitted vehicle means a reusable suborbital rocket or a reusable launch vehicle that will be launched into a suborbital trajectory or reentered that is operated by a launch or reentry operator under an experimental permit.

Reentry impact point means the location of a reusable suborbital vehicle's instantaneous impact point during its unpowered exoatmospheric suborbital flight.

■ 14. Revise § 437.5 to read as follows:

§ 437.5 Eligibility for an experimental permit.

The FAA will issue an experimental permit to a person to launch or reenter a reusable suborbital vehicle only for—

(a) Research and development to test design concepts, equipment, or operating techniques;

(b) A showing of compliance with requirements for obtaining a license under this subchapter; or

(c) Crew training for a launch or reentry using the design of the reusable suborbital vehicle for which the permit would be issued.

■ 15. Amend § 437.7 by revising the introductory text and paragraph (b) to read as follows:

§ 437.7 Scope of an experimental permit.

An experimental permit authorizes launch or reentry of a reusable suborbital vehicle. The authorization includes pre- and post-flight ground operations as defined in this section.

* * * * *

(b) A post-flight ground operation includes each operation necessary to return the reusable suborbital vehicle to a safe condition after it lands or impacts.

■ 16. Revise § 437.9 to read as follows:

§ 437.9 Issuance of an experimental permit.

The FAA issues an experimental permit authorizing an unlimited number of launches or reentries for a reusable suborbital vehicle design for the uses described in § 437.5.

- 17. Amend § 437.21 by revising paragraphs (b)(1)(i) and (iv), (b)(3), (c), and (d) to read as follows:

§ 437.21 General.

* * * * *

- (b) * * *
- (1) * * *

(i) *General.* The FAA is responsible for complying with the procedures and policies of the National Environmental Policy Act (NEPA) and other applicable environmental laws, regulations, and Executive Orders to consider and document the potential environmental effects associated with proposed reusable suborbital vehicle launches or reentries. An applicant must provide the FAA with information needed to comply with such requirements. The FAA will consider and document the potential environmental effects associated with proposed reusable suborbital vehicle launches or reentries.

* * * * *

(iv) *Information requirements.* An application must include an approved FAA Environmental Assessment, Environmental Impact Statement, categorical exclusion determination, or written re-evaluation covering all planned permitted activities in compliance with NEPA and the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA.

* * * * *

(3) *Human space flight.* An applicant proposing to conduct a permitted operation with a space flight participant, crew, or government astronaut on board a reusable suborbital vehicle must demonstrate compliance with §§ 460.5, 460.7, 460.11, 460.13, 460.15, 460.17, 460.51, 460.53, 460.59, 460.61, and 460.67 of this subchapter.

(c) *Use of a safety element approval.* If an applicant proposes to use any reusable suborbital vehicle, safety system, process, service, or personnel for which the FAA has issued a safety element approval under part 414 of this chapter, the FAA will not reevaluate that safety element to the extent its use is within its approved scope. As part of the application process, the FAA will evaluate the integration of that safety element into vehicle systems or operations.

(d) *Inspection before issuing a permit.* Before the FAA issues an experimental

permit, an applicant must make each reusable suborbital vehicle planned to be flown available to the FAA for inspection. The FAA will determine whether each reusable suborbital vehicle is built as represented in the application.

* * * * *

- 18. Amend § 437.23 by revising paragraphs (a) and (b) to read as follows:

§ 437.23 Program description.

(a) An applicant must provide—
(1) Dimensioned three-view drawings or photographs of the reusable suborbital vehicle; and

(2) Gross liftoff weight and thrust profile of the reusable suborbital vehicle.

(b) An applicant must describe—
(1) All reusable suborbital vehicle systems, including any structural, flight control, thermal, pneumatic, hydraulic, propulsion, electrical, environmental control, software and computing systems, avionics, and guidance systems used in the reusable suborbital vehicle;

(2) The types and quantities of all propellants used in the reusable suborbital vehicle;

(3) The types and quantities of any hazardous materials used in the reusable suborbital vehicle;

(4) The purpose for which a reusable suborbital vehicle is to be flown; and

(5) Each payload or payload class planned to be flown.

- 19. Amend § 437.25 by revising paragraph (c) to read as follows:

§ 437.25 Flight test plan.

* * * * *

(c) For each operating area, provide the planned maximum altitude of the reusable suborbital vehicle.

- 20. Revise and republish § 437.31 to read as follows:

§ 437.31 Verification of operating area containment and key flight-safety event limitations.

(a) An applicant must identify, describe, and provide verification evidence of the methods and systems used to meet the requirement of § 437.57(a) to contain its reusable suborbital vehicle's instantaneous impact point within an operating area and outside any exclusion area. The description must include, at a minimum—

(1) Proof of physical limits on the ability of the reusable suborbital vehicle to leave the operating area; or

(2) Abort procedures and other safety measures derived from a system safety engineering process.

(b) An applicant must identify, describe, and provide verification

evidence of the methods and systems used to meet the requirements of § 437.59 to conduct any key flight-safety event so that the reusable suborbital vehicle's instantaneous impact point, including its expected dispersions, is over unpopulated or sparsely populated areas, and to conduct each reusable suborbital vehicle flight so that the reentry impact point does not loiter over a populated area.

- 21. Revise § 437.33 to read as follows:

§ 437.33 Landing and impact locations.

An applicant must demonstrate that each location for nominal landing or any contingency abort landing of the reusable suborbital vehicle, and each location for any nominal or contingency impact or landing of a component of that reusable suborbital vehicle, satisfies § 437.61.

- 22. Amend § 437.53 by revising the introductory text to read as follows:

§ 437.53 Pre-flight and post-flight operations.

A permittee must protect the public from adverse effects of hazardous operations and systems in preparing a reusable suborbital vehicle for flight at a launch site in the United States and returning the reusable suborbital vehicle and any support equipment to a safe condition after flight. At a minimum, a permittee must—

* * * * *

- 23. Amend § 437.57 by revising paragraphs (a) and (c) to read as follows:

§ 437.57 Operating area containment.

(a) During each permitted flight, a permittee must contain its reusable suborbital vehicle's instantaneous impact point within an operating area determined in accordance with paragraph (b) of this section and outside any exclusion area defined by the FAA in accordance with paragraph (c) of this section.

* * * * *

(c) The FAA may prohibit a reusable suborbital vehicle's instantaneous impact point from traversing certain areas within an operating area by designating one or more areas as exclusion areas, if necessary to protect public health and safety, safety of property, or foreign policy or national security interests of the United States. An exclusion area may be confined to a specific phase of flight.

- 24. Amend § 437.59 by revising paragraph (a) introductory text and (b) to read as follows:

§ 437.59 Key flight-safety event limitations.

(a) A permittee must conduct any key flight-safety event so that the reusable

suborbital vehicle's instantaneous impact point, including its expected dispersion, is over an unpopulated or sparsely populated area. At a minimum, a key flight-safety event includes:

* * * * *

(b) A permittee must conduct each reusable suborbital vehicle flight so that the reentry impact point does not loiter over a populated area.

■ 25. Amend § 437.61 by revising the introductory text to read as follows:

§ 437.61 Landing and impact locations.

For a nominal or any contingency abort landing of a reusable suborbital vehicle, or for any nominal or contingency impact or landing of a component of that reusable suborbital vehicle, a permittee must use a location that—

* * * * *

■ 26. Revise and republish § 437.71 to read as follows:

§ 437.71 Flight rules.

(a) Before initiating flight, a permittee must confirm that all systems and operations necessary to ensure that safety measures derived from §§ 437.55, 437.57, 437.59, 437.61, 437.63, 437.65, 437.67, and 437.69 are within acceptable limits.

(b) During all phases of flight, a permittee must—

(1) Follow flight rules that ensure compliance with §§ 437.55, 437.57, 437.59, and 437.61; and

(2) Abort the flight if it would endanger the public.

(c) A permittee may not operate a reusable suborbital vehicle in a careless or reckless manner that would endanger any member of the public during any phase of flight.

(d) A permittee may not operate a reusable suborbital vehicle in areas designated in a Notice to Airmen under 14 CFR 91.137, 91.138, 91.141, or 91.145, unless authorized by:

(1) Air Traffic Control; or

(2) A Flight Standards Certificate of Waiver or Authorization.

(e) For any phase of flight where a permittee operates a reusable suborbital vehicle like an aircraft in the National Airspace System, a permittee must comply with the provisions of 14 CFR part 91 specified in an experimental permit issued under this part.

■ 27. Amend § 437.85 by revising paragraph (a) to read as follows:

§ 437.85 Allowable design changes; modification of an experimental permit.

(a) The FAA will identify in the experimental permit the type of changes that the permittee may make to the

reusable suborbital vehicle design without invalidating the permit.

* * * * *

■ 28. Revise § 437.91 to read as follows:

§ 437.91 For hire prohibition.

No permittee may carry any property or human being for compensation or hire on a reusable suborbital vehicle.

■ 29. Revise § 437.95 to read as follows:

§ 437.95 Inspection of additional reusable suborbital vehicles.

A permittee may launch or reenter additional reusable suborbital vehicles of the same design under the permit after the FAA inspects each additional reusable suborbital vehicle.

PART 440—FINANCIAL RESPONSIBILITY

■ 30. The authority citation for part 440 continues to read as follows:

Authority: 51 U.S.C. 50901–50923.

■ 31. Amend § 440.3 by revising the definitions of “Maximum probable loss”, “Permit”, “Permitted activity”, and “Third party” to read as follows:

§ 440.3 Definitions.

* * * * *

Maximum probable loss (MPL) means the greatest dollar amount of loss for bodily injury or property damage that is reasonably expected to result from a licensed or permitted activity;

(1) Losses to third parties, excluding Government personnel and other launch or reentry participants’ employees involved in licensed or permitted activities and neighboring operations personnel, that are reasonably expected to result from a licensed or permitted activity are those that have a probability of occurrence of no less than one in ten million.

(2) Losses to Government property and Government personnel, excluding government astronauts, involved in licensed or permitted activities and neighboring operations personnel that are reasonably expected to result from licensed or permitted activities are those that have a probability of occurrence of no less than one in one hundred thousand.

* * * * *

Permit means an authorization the FAA issues under this subchapter for the launch or reentry of a reusable suborbital vehicle.

Permitted activity means the launch or reentry of a reusable suborbital vehicle conducted under a permit issued by the FAA.

* * * * *

Third party means—

(1) Any person other than:

(i) The United States, any of its agencies, and its contractors and subcontractors involved in launch or reentry services for a licensed or permitted activity;

(ii) A licensee, permittee, and its contractors and subcontractors involved in launch or reentry services for a licensed or permitted activity;

(iii) A customer and its contractors and subcontractors involved in launch or reentry services for a licensed or permitted activity;

(iv) A member of a crew;

(v) A space flight participant; and

(vi) A government astronaut.

(2) Government personnel, as defined in this section and excluding government astronauts, are third parties.

* * * * *

■ 32. Amend § 440.9 by revising and republishing paragraph (b) to read as follows:

§ 440.9 Insurance requirements for licensed or permitted activities.

* * * * *

(b) A licensee or permittee must obtain and maintain in effect a policy or policies of liability insurance, in an amount determined by the FAA under paragraph (c) of this section, that protects the following persons as additional insureds to the extent of their respective potential liabilities against covered claims by a third party for bodily injury or property damage resulting from a licensed or permitted activity:

(1) The licensee or permittee, its customer, and their respective contractors and subcontractors, and the employees of each, involved in a licensed or permitted activity;

(2) The United States, its agencies, and its contractors and subcontractors involved in a licensed or permitted activity;

(3) Government personnel; and

(4) Space flight participants. This paragraph (b)(4) shall cease to be effective on September 30, 2025, unless public law modifies the limitation in section 50914 of Title 51 of the U.S. Code.

* * * * *

■ 33. Amend § 440.17 by revising paragraphs (c) introductory text, (d) introductory text, (e) introductory text, and (f) and adding paragraph (g) to read as follows:

§ 440.17 Reciprocal waiver of claims requirements.

* * * * *

(c) For each licensed or permitted activity in which the United States, or

its contractors and subcontractors, is involved or where property insurance is required under § 440.9(d), the Federal Aviation Administration of the Department of Transportation, the licensee or permittee, and each first-tier customer must enter into a reciprocal waiver of claims agreement. The reciprocal waiver of claims must be in a form acceptable to the Administrator, such as those contained in advisory circular AC 440.17-1, and must provide that:

* * * * *

(d) For each licensed or permitted activity in which the United States or its contractors and subcontractors are involved, the Federal Aviation Administration of the Department of Transportation and each space flight participant must enter into or have in place a reciprocal waiver of claims agreement. The reciprocal waiver of claims must be in a form acceptable to the Administrator, such as those contained in advisory circular AC 440.17-1.

* * * * *

(e) For each licensed or permitted activity in which the United States or its contractors and subcontractors is involved, the Federal Aviation Administration of the Department of Transportation and each crew member must enter into or have in place a reciprocal waiver of claims agreement. The reciprocal waiver of claims must in a form acceptable to the Administrator, such as those contained in advisory circular AC 440.17-1.

* * * * *

(f) The licensee or permittee and each space flight participant must enter into a reciprocal waiver of claims agreement under which each party waives and releases claims against the other party to the waiver, and agrees to assume financial responsibility for property damage it sustains and for bodily injury or property damage, and to hold harmless and indemnify each other from bodily injury or property damage, resulting from a licensed or permitted activity, regardless of fault. This paragraph (f) shall cease to be effective as of September 30, 2025, unless public law modifies the limitation in section 50914 of Title 51 of the U.S. Code.

(g) Any waiver, release, assumption of responsibility or agreement to hold harmless and indemnify pursuant to this section does not apply to claims for bodily injury or property damage resulting from willful misconduct of any of the parties to the reciprocal waiver of claims, the contractors and subcontractors of any of the parties to the reciprocal waiver of claims, and in

the case of licensee or permittee and customers and the contractors and subcontractors of each of them, the directors, officers, agents and employees of any of the foregoing, and in the case of the United States, its agents.

Appendix B Through E to Part 440— [Removed]

■ 34. Remove appendices B through E to part 440.

PART 450—LAUNCH AND REENTRY LICENSE REQUIREMENTS

■ 35. The authority citation for part 450 continues to read as follows:

Authority: 51 U.S.C. 50901-50923.

■ 36. Amend § 450.45 by revising paragraphs (e)(3)(ii)(E) and (e)(5) to read as follows:

§ 450.45 Safety review and approval.

* * * * *

- (e) * * *
- (3) * * *
- (ii) * * *

(E) For an unguided suborbital launch vehicle, the location of the vehicle's center of pressure in relation to its center of gravity for the entire flight profile.

* * * * *

(5) *Human space flight.* For a proposed launch or reentry with a space flight participant, crew, or government astronaut on board a vehicle, an applicant must demonstrate compliance with §§ 460.5, 460.7, 460.11, 460.13, 460.15, 460.17, 460.51, 460.53, 460.59, 460.61, and 460.67 of this chapter.

* * * * *

PART 460—HUMAN SPACE FLIGHT REQUIREMENTS

■ 37. The authority citation for part 460 continues to read as follows:

Authority: 51 U.S.C. 50901-50923.

■ 38. Add subpart C to read as follows:

Subpart C—Launch and Reentry with a Government Astronaut with a Safety-Critical Role

Sec.

- 460.55 Scope.
- 460.57 Applicability.
- 460.59 Training of government astronauts with a safety-critical role.
- 460.61 Environmental control and life support systems.

Subpart C—Launch and Reentry with a Government Astronaut with a Safety-Critical Role

§ 460.55 Scope.

This subpart establishes requirements for operators and applicants whose

licensed or permitted operations involve government astronauts on board a vehicle.

§ 460.57 Applicability.

This subpart applies to:

- (a) An applicant for a license or permit under this chapter who proposes to have a government astronaut with a safety-critical role on board a vehicle.
- (b) An operator licensed or permitted under this chapter who has a government astronaut with a safety-critical role on board a vehicle.

§ 460.59 Training of government astronauts with a safety-critical role.

(a) An operator must ensure that each government astronaut with a safety-critical role is trained on—

(1) How to carry out their safety-critical role on board or on the ground so that the vehicle will not harm the public; and

(2) Their role in nominal and non-nominal conditions, including abort scenarios and emergency operations, to the extent that performance of their role could impact public safety.

(b) An operator must ensure any government astronaut who has the capability to control, in real time, a launch or reentry vehicle's flight path during a phase of flight capable of endangering the public:

(1) Receives vehicle and mission-specific training for each phase of flight capable of endangering the public and over which the government astronaut has the capability to control the vehicle by using one or more of the following:

(i) A method or device that simulates the flight;

(ii) An aircraft whose characteristics are similar to the vehicle or that has similar phases of flight to the vehicle;

(iii) Flight testing; or

(iv) An equivalent method of training approved by the FAA through the license process.

(2) Trains for each mode of control or propulsion, including any transition between modes, such that the government astronaut is able to control the vehicle.

(3) Possesses aeronautical knowledge, experience, and skills necessary to pilot and control the launch or reentry vehicle that will operate in the National Airspace System (NAS). Aeronautical experience may include hours in flight, ratings, and training.

(c) With respect to training device fidelity, an operator must:

(1) Ensure that any government astronaut training device used to meet the training requirements realistically represents the vehicle's configuration and mission; or,

(2) Inform the government astronaut being trained of the differences between the training device and the vehicle's configuration and mission.

(d) An operator must update the government astronaut training to ensure that the training incorporates lessons learned from training and operational missions including—

(1) Providing traceability to revisions or changes; and

(2) Documenting the completed training for each government astronaut and maintaining the documentation for each active government astronaut.

(e) An operator must establish a recurrent training schedule and ensure that all training of government astronauts performing safety-critical roles is current before launch or reentry.

(f) For licensed missions supporting U.S. Government contracts, operators may meet the training requirements of this section through U.S. Government's contractual requirements.

§ 460.61 Environmental control and life support systems.

(a) An operator must provide atmospheric conditions adequate to sustain life and consciousness for all inhabited areas within a vehicle that house a government astronaut. The operator must monitor and control the following atmospheric conditions in the inhabited areas or demonstrate through the license or permit process that an alternate means provides an equivalent level of safety—

(1) Composition of the atmosphere, which includes oxygen and carbon dioxide, and any revitalization;

(2) Pressure, temperature and humidity;

(3) Contaminants that include particulates and any harmful or hazardous concentrations of gases, or vapors; and

(4) Ventilation and circulation.

(b) An operator must provide an adequate redundant or secondary oxygen supply for any government astronaut with a safety-critical role.

(c) An operator must provide a redundant means of preventing cabin depressurization; or prevent incapacitation of any government astronaut with a safety-critical role in the event of loss of cabin pressure.

■ 39. Add subpart D to read as follows:

Subpart D—Launch and Reentry with a Government Astronaut Without a Safety-Critical Role

Sec.

460.63 Scope.

460.65 Applicability.

460.67 Training of government astronauts without a safety-critical role.

Subpart D—Launch and Reentry with a Government Astronaut Without a Safety-Critical Role

§ 460.63 Scope.

This subpart establishes requirements for operators and applicants whose licensed or permitted operations involve government astronauts on board a vehicle without a safety-critical role.

§ 460.65 Applicability.

This subpart applies to:

(a) An applicant for a license or permit under this chapter who proposes to have a government astronaut without a safety-critical role on board a vehicle.

(b) An operator licensed or permitted under this chapter who has a government astronaut without a safety-critical role on board a vehicle.

§ 460.67 Training of government astronauts without a safety-critical role.

An operator must ensure that each government astronaut without a safety-critical role is trained on how to respond to emergency situations, including smoke, fire, loss of cabin pressure, and emergency exit.

Issued under authority provided by 49 U.S.C. 106(f) and 51 U.S.C. 509 in Washington, DC.

Michael Gordon Whitaker,

Administrator.

[FR Doc. 2024–20900 Filed 9–18–24; 8:45 am]

BILLING CODE 4910–13–P

PENSION BENEFIT GUARANTY CORPORATION

29 CFR Part 4044

Allocation of Assets in Single-Employer Plans; Interest Assumptions for Valuing Benefits

AGENCY: Pension Benefit Guaranty Corporation (PBGC).

ACTION: Final rule.

SUMMARY: This final rule amends the Pension Benefit Guaranty Corporation's regulation on Allocation of Assets in Single-Employer Plans to prescribe the spreads component of the interest assumption under the asset allocation regulation for plans with valuation dates of October 31, 2024–January 30, 2025. These interest assumptions are used for valuing benefits under terminating single-employer plans and for other purposes.

DATES: Effective October 31, 2024.

FOR FURTHER INFORMATION CONTACT: Monica O'Donnell (*odonnell.monica@pbgc.gov*), Attorney, Office of the General Counsel, Pension Benefit

Guaranty Corporation, 445 12th Street SW, Washington, DC 20024–2101, 202–229–8706. If you are deaf or hard of hearing or have a speech disability, please dial 7–1–1 to access telecommunications relay services.

SUPPLEMENTARY INFORMATION: PBGC's regulation on Allocation of Assets in Single-Employer Plans (29 CFR part 4044) prescribes actuarial assumptions—including an interest assumption—for valuing benefits under terminating single-employer plans covered by title IV of the Employee Retirement Income Security Act of 1974 (ERISA). The interest assumption is also posted on PBGC's website (*www.pbgc.gov*).

PBGC uses the interest assumption in § 4044.54 to determine the present value of annuities in an involuntary or distress termination of a single-employer plan under the asset allocation regulation. The assumptions in part 4044 of PBGC's regulations are also used in other situations where it is appropriate for liabilities to align with private sector group annuity prices. For example, PBGC's regulations on Notice, Collection, and Redetermination of Withdrawal Liability (29 CFR part 4219) and Duties of Plan Sponsor Following Mass Withdrawal (29 CFR part 4281) provide that these assumptions are used to value liabilities for purposes of determining withdrawn employers' reallocation liability in the event of a mass withdrawal from a multiemployer plan. Multiemployer plans that receive special financial assistance under the regulation on Special Financial Assistance by PBGC (29 CFR part 4262) must, as a condition of receiving special financial assistance, use the interest assumption to determine withdrawal liability for a prescribed period. Additionally, plan sponsors are required to use some, or all of these assumptions for specified purposes (*e.g.*, reporting benefit liabilities in filings required under PBGC's regulation on Annual Financial and Actuarial Information Reporting (29 CFR part 4010) or determining certain amounts to transfer to PBGC's Missing Participants Program on behalf of a missing participant of a terminating defined benefit plan under PBGC's regulation on Missing Participants (29 CFR part 4050)) and may use them for other purposes (*e.g.*, to ensure that plan spinoffs comply with section 414(l) of the Internal Revenue Code (the Code)).

On June 6, 2024, PBGC issued a final rule at 89 FR 48291 that changes the structure of the interest assumption for valuation dates on or after July 31, 2024, from the select and ultimate approach to