

§ 2.306 [Amended]

■ 7. In § 2.306, amend the first sentence of paragraph (b)(3) by removing the word “optical” and adding in its place the word “portable”.

■ 8. In § 2.337, revise paragraph (d) to read as follows:

§ 2.337 Evidence at a hearing.

(d) Exhibits. Exhibits must be marked in accordance with any instructions provided by the presiding officer. Exhibits must be filed through the agency’s E-Filing system, unless the presiding officer grants an exemption permitting an alternative filing method under § 2.302(h)(1) or (2) or unless the filing falls within the scope of § 2.302(g)(2) or (3) as not being subject to electronic transmission. When an exhibit is not filed through the E-Filing system, a duplicate is admissible to the same extent as the original unless a genuine question is raised about the original’s authenticity or the circumstances make it unfair to admit the duplicate. Information that a party references through hyperlinks in an exhibit must be submitted by that party, in its entirety, either as part of the exhibit or as a separate exhibit, for that information to be included in the evidentiary record.

§ 2.341 [Amended]

■ 9. In § 2.341, amend paragraph (b)(2) introductory text by removing the phrase “twenty-five (25) pages” and adding in its place the phrase “thirty (30) pages”.

■ 10. In § 2.711, revise paragraphs (b) and (h) to read as follows:

§ 2.711 Evidence.

(b) Testimony. The parties shall submit direct testimony of witnesses in written form, unless otherwise ordered by the presiding officer on the basis of objections presented. In any proceeding in which advance written testimony is to be used, each party shall serve copies of its proposed written testimony on every other party at least fifteen (15) days in advance of the session of the hearing at which its testimony is to be presented. The presiding officer may permit the introduction of written testimony not so served, either with the consent of all parties present or after they have had a reasonable opportunity to examine it. Written testimony must be offered and admitted in evidence as an exhibit or, in the discretion of the presiding officer, may be incorporated

into the transcript of the record as if read.

(h) Exhibits. Exhibits must be marked in accordance with any instructions provided by the presiding officer. Exhibits must be filed through the agency’s E-Filing system, unless the presiding officer grants an exemption permitting an alternative filing method under § 2.302(h)(1) or (2) or unless the filing falls within the scope of § 2.302(g)(2) or (3) as not being subject to electronic transmission. When an exhibit is not filed through the E-Filing system, a duplicate is admissible to the same extent as the original unless a genuine question is raised about the original’s authenticity or the circumstances make it unfair to admit the duplicate. Information that a party references through hyperlinks in an exhibit must be submitted by that party, in its entirety, either as part of the exhibit or as a separate exhibit, for that information to be included in the evidentiary record.

■ 11. Revise § 2.1200 to read as follows:

§ 2.1200 Scope of this subpart.

The provisions of this subpart, together with subpart C of this part, govern all adjudicatory proceedings conducted for the grant, renewal, licensee-initiated amendment, or termination of licenses or permits subject to parts 30, 32 through 36, 39, 40, 50, 52, 54, 55, 61, 70, and 72 of this chapter, except as determined through the application of § 2.310(b) through (h).

§ 2.1213 [Amended]

■ 12. In § 2.1213, amend paragraph (a) by removing the phrase “five (5) days” and adding in its place the phrase “seven (7) days”.

■ 13. Revise § 2.1400 to read as follows:

§ 2.1400 Purpose and scope of this subpart.

The purpose of this subpart is to provide simplified procedures for the expeditious resolution of disputes among parties in an informal hearing process. The provisions of this subpart, together with subpart C of this part, govern adjudicatory proceedings that the Commission, the presiding officer, or the Atomic Safety and Licensing Board designated to rule on the request/petition determine will be conducted under this subpart in accordance with § 2.310.

Dated: August 1, 2024.

For the Nuclear Regulatory Commission.  
Mirela Gavrilas,  
Executive Director for Operations.  
[FR Doc. 2024-18742 Filed 8-21-24; 8:45 am]  
BILLING CODE 7590-01-P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 1, 11, 91, 135, and 136

[Docket No.: FAA-2023-2250; Amdt. Nos. 1-76, 11-66, 91-376, 135-146, and 136-3]

RIN 2120-AL37

Use of Supplemental Restraint Systems

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

ACTION: Final rule.

SUMMARY: This rule prohibits civil aircraft operations conducted with supplemental restraint systems (SRS) unless operators meet certain requirements for ensuring passenger and crewmember safety during all phases of the operation. The FAA expects these requirements to increase the safety of individuals on board civil aircraft operations conducted with SRS. This rule addresses recommendations from the National Transportation Safety Board and the Department of Transportation Office of Inspector General. Additionally, this rule will codify, with updates, an Emergency Order of Prohibition currently in effect addressing safety concerns regarding the use of supplemental restraints. The rule applies to all civil aircraft operations conducted with use of SRS. The rule does not apply to parachute operations, rotorcraft external-load operations, or public aircraft operations.

DATES: Effective October 21, 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: Raymond Plessinger, General Aviation and Commercial Division, Flight Standards Service, Federal Aviation Administration, 800 Independence Avenue SW, Washington, DC 20591; Telephone: (202) 267-1100; email Raymond.Plessinger@faa.gov.

SUPPLEMENTARY INFORMATION:

## List of Abbreviations and Acronyms Frequently Used in This Document

IRFA—Initial Regulatory Flexibility Analysis  
 LOA—Letter of Authorization  
 NAICS—North American Industry Classification System  
 NPRM—Notice of Proposed Rulemaking  
 NTSB—National Transportation Safety Board  
 OEM—Original Equipment Manufacturer  
 OMB—Office of Management and Budget  
 PIC—Pilot in Command  
 RFA—Regulatory Flexibility Act  
 SBA—Small Business Administration  
 SPRS—Supplemental Passenger Restraint System(s)  
 SRS—Supplemental Restraint System(s)  
 STC—Supplemental Type Certificate

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## I. Executive Summary

### A. Purpose of the Regulatory Action

This final rule addresses the use of supplemental restraint systems (SRS) in civil aircraft operations. An SRS is a device used to secure an individual inside an aircraft when that person is not secured by an FAA-approved safety belt and, if installed, shoulder harness, or an approved child restraint system. SRS are not installed on the aircraft pursuant to a Type Certificate, Supplemental Type Certificate, approved major alteration, or other FAA approval. An SRS consists of a harness secured around the torso of the individual using the SRS and a lanyard that connects the harness to an FAA-approved airframe attachment point inside the aircraft.

On March 11, 2018, five passengers drowned when the open-door helicopter in which they were traveling ditched<sup>1</sup> on the East River in New York, New York. They were unable to exit the aircraft because the harness/tether system each used hindered their egress. As a result of preliminary information discovered during the investigation of this accident, on March 19, 2018, the National Transportation Safety Board (NTSB) issued Urgent Safety Recommendation A-18-012, which recommended that the FAA prohibit all open-door aircraft operations using passenger harness systems unless the harness system allows passengers to rapidly release the harness with minimal difficulty and without having to cut or forcefully remove the harness.<sup>2</sup> On March 22, 2018, the FAA issued an Emergency Order of Prohibition titled “Operators and Pilots of ‘Doors Off’ Flights for Compensation or Hire”<sup>3</sup> to all operators and pilots of flights for

compensation or hire with the doors opened or removed in the United States or using aircraft registered in the United States for doors-off flights. The Emergency Order of Prohibition prohibits the use of supplemental passenger restraint systems (SPRS) that cannot be released quickly in an emergency.<sup>4</sup> At the time of the accident, no rules specifically addressed aircraft operations conducted with the use of SRS,<sup>5</sup> including during operations with doors opened or removed.

### B. Summary of the Rule

On November 21, 2023, the FAA published a notice of proposed rulemaking (NPRM) proposing to prohibit civil aircraft operations conducted with SRS unless operators meet certain requirements for ensuring passenger and crewmember safety during all phases of the operation.<sup>6</sup> After the comment period closed January 22, 2024, the FAA reviewed the ten comments to the NPRM. This rule finalizes the NPRM as proposed, with a few revisions for clarity as discussed throughout this preamble.

This final rule addresses recommendations from the NTSB and the Department of Transportation Office of Inspector General.<sup>7</sup> Additionally, this final rule codifies, with updates, an Emergency Order currently in effect addressing safety concerns regarding the use of supplemental restraints.

Generally, this final rule prohibits civil aircraft operations when individuals are secured by SRS except as provided in § 91.108. In addition, flight operations with doors opened or removed are prohibited when individuals are using SRS except under two scenarios. The first scenario is when each individual<sup>8</sup> occupies an

<sup>4</sup> The term “supplemental passenger restraint system,” as defined in the March 22, 2018, Emergency Order of Prohibition, means any passenger restraint that is not installed on the aircraft pursuant to an FAA approval, including (but not limited to) restraints approved through a Type Certificate, Supplemental Type Certificate, or as an approved major alteration using FAA Form 337.

<sup>5</sup> The FAA uses the term “supplemental restraint system” (SRS) to refer to the device in general, but for the purposes of this rulemaking document, uses the term “supplemental passenger restraint system” (SPRS) when quoting or referring to documents that use the term “SPRS” (e.g., The Emergency Order of Prohibition). The FAA considers the two terms to be synonymous.

<sup>6</sup> *Use of Supplemental Restraint Systems* NPRM, 88 FR 80997 (Nov. 21, 2023).

<sup>7</sup> The SRS NPRM provides detailed information regarding the NTSB and the Department of Transportation’s recommendations, and how the FAA addressed those recommendations. See 88 FR 80999 through 81001.

<sup>8</sup> The FAA uses two categories to define those who travel on aircraft: crewmember and passenger.

<sup>1</sup> The NTSB final report describes “ditching” as “an emergency landing that is deliberately executed on water with the intent of abandoning the helicopter as soon as practical.” See NTSB, *Aircraft Accident Report: Inadvertent Activation of Fuel Shutoff Level and Subsequent Ditching* at 1, NTSB/AAR-19/04 PB2020-100100 (Dec. 10, 2019), <https://www.ntsb.gov/investigations/AccidentReports/Reports/AAR1904.pdf>.

<sup>2</sup> NTSB Safety Recommendation A-18-012, available at <https://data.ntsb.gov/carol-main-public/sr-details/A-18-012>.

<sup>3</sup> Emergency Order of Prohibition, *Operators and Pilots of “Doors Off” Flights for Compensation or Hire*, available at <https://www.regulations.gov/document/FAA-2018-0243-0001>.

FAA-approved seat or berth with a safety belt and, if installed, shoulder harness, properly secured about them or occupies a properly secured and approved child restraint system during the entire flight. The second scenario is if each individual occupies an FAA-approved seat or berth with a safety belt and, if installed, shoulder harness, properly secured about them during movement on the surface, takeoff, and landing; during other phases of flight, if permitted by the pilot in command (PIC),<sup>9</sup> the individual may use an SRS that meets all requirements in this rule. The operator generally will provide the SRS to individuals who seek to use the SRS during the flight, but in some cases, an individual may opt to provide their own SRS if it meets the requirements of this rule and the PIC approves use of the SRS.

This final rule requires the SRS to have a release mechanism that can be operated quickly by the passenger using the SRS with minimal difficulty. The release mechanism must be located on the front or side of the harness in a place easily accessible to and visible by the individual using the SRS and must prevent inadvertent release. Also, the release mechanism cannot require the use of a knife to cut the restraint, the use of any other additional tool, or the assistance of any other individual to release the SRS. This final rule also requires the SRS to not impede egress from the aircraft in an emergency after being released.

This final rule requires the SRS to be connected to an FAA-approved airframe attachment point or points rated equal to or greater than the combined weight of all the individuals using an SRS attached to that same point, but it cannot be connected to any airframe attachment point located in the flightdeck. Additionally, the rule requires that the SRS lanyard secures around the torso of the individual using the SRS and ensures the torso of the individual remains inside the aircraft at all times. The rule also prohibits the SRS from connecting to any seatbelt or shoulder harness attachment point unless the attachment point is FAA-approved, and nothing may attach to the SRS that is not relevant to its function. In addition, the SRS must fit the

In this rule, the agency uses that distinction when referring specifically to a crewmember or a passenger. When the distinction between a crewmember and a passenger is not applicable, the agency uses the word "individual" when referring to anyone who occupies an SRS.

<sup>9</sup>Under 14 CFR 91.3, the PIC is the final authority as to the operation of the aircraft. The PIC may determine it is unsafe to allow the use of SRS during a phase of flight that would otherwise be allowed.

individual using it based on the sizing criteria for which the SRS is rated.

This final rule also requires operators conducting flight operations where passengers use an SRS to provide an enhanced passenger safety briefing. Further, this rule requires passengers who seek to use an SRS during flight operations to demonstrate their ability to use, secure, and release the FAA-approved safety belts and, if installed, shoulder harnesses, as well as their ability to release quickly the SRS with no assistance and with minimal difficulty. A passenger who cannot meet the demonstration requirements of the rule is prohibited from using an SRS; however, they would be permitted to participate in the flight if they occupy an FAA-approved seat or berth with a safety belt and, if installed, shoulder harness, properly secured about them during operations when the doors are opened or removed or when otherwise required by regulations. Only those passengers who have reached their fifteenth birthday can use an SRS during flight operations, and no individual using an SRS can occupy a seat in the flightdeck. In addition, this final rule prohibits individuals who occupy a child restraint system from also using an SRS. It also prohibits a child who is less than two years old from being held (1) by an adult who is using an SRS or (2) when the aircraft doors are opened or removed even if the adult is properly secured by an FAA-approved safety belt.

Finally, the rule outlines the responsibilities of the PIC, including determining whether an SRS complies with the requirements of the rule and whether SRS may be used during flight operations.

## II. Authority for This Rulemaking

The FAA's authority to issue rules on aviation safety is found in Title 49 of the United States Code (49 U.S.C.). Subtitle I of 49 U.S.C., specifically section 106, describes the authority of the FAA Administrator. Subtitle VII of 49 U.S.C., Aviation Programs, describes in more detail the scope of the agency's authority.

The FAA promulgates this rulemaking under the authority described in 49 U.S.C. 106(f), which establishes the authority of the Administrator to promulgate regulations and rules, and 49 U.S.C. 44701(a)(5), which requires the Administrator to promote safe flight of civil aircraft in air commerce by prescribing regulations and setting minimum standards for other practices, methods, and procedures necessary for safety in air commerce and national security.

## III. Background

### A. General Overview of Comments

The FAA received and considered 10 comments on the NPRM, four of which were from organizations: Condon & Forsyth, Helicopter Association International (HAI), the NTSB, and Tuckamore Aviation. Four of the commenters supported the rule with no changes, five commenters expressed support but also proposed changes, and one commenter opposed the proposed rule in its entirety.

### B. Differences Between the NPRM and the Final Rule

This rule finalizes the NPRM as proposed with a few revisions to maximize clarity or after consideration in response to comments. The FAA is updating § 91.108 paragraphs (b)(2), (c)(2), (e)(1)(i), and the definition of "supplemental restraint system" to include "FAA-approved" airframe attachment point to ensure that the SRS can only be attached to an airframe attachment point when the FAA has determined that point complies with the applicable part 21 approval requirements. The FAA is also adding a prohibition that the SRS cannot be connected to any seatbelt or shoulder harness attachment point(s) unless the attachment is FAA-approved as described in § 91.108 paragraph (e)(1)(i). The FAA is amending the proposed regulatory text to prohibit anything from attaching to the SRS that is not relevant to its function. The FAA also is moving the SRS definition from § 91.108 to § 1.1. Finally, the FAA made some grammatical changes to the regulatory text that are technical in nature and that do not substantively change the previous intent of the provisions.

## IV. Discussion of Comments and the Final Rule

### A. Prohibitions Applicable to SRS and Doors Opened or Removed Flight Operations (§ 91.108(a) and (b))

The FAA proposed in § 91.108(a) that, except as provided in this rule, no person may conduct a civil aircraft operation in which any individual on board is secured with an SRS. The FAA also proposed in § 91.108(b) that no person may operate a civil aircraft with the doors opened or removed unless (1) each individual on board occupies an approved seat or berth with a safety belt and, if installed, shoulder harness during all phases of flight or (2) each individual occupies an approved seat or berth with a safety belt and, if installed, shoulder harness during movement on the surface, takeoff, and landing and is

secured for the remainder of the flight by an SRS. As part of the proposal, the FAA applied some of the requirements to all “individuals” using an SRS, not just passengers.

Tuckamore Aviation commented that the rule should only apply to passengers and not crewmembers because it introduces conflicting definitions and requirements to existing safety guidance, established equipment use, and practices and procedures established by other government agencies for crewmembers. Further, Tuckamore Aviation commented that all public aircraft operations need to be exempt from proposed 14 CFR 91.108.

The FAA disagrees with Tuckamore Aviation’s assertion that the rule should only apply to passengers and not crewmembers. Applying the rule to all individuals on board the aircraft will help mitigate the risks associated with using SRS, particularly during operations with doors opened or removed, and will ensure the highest level of safety when conducting such operations. The safety risks involved in operations using SRS do not apply only to passengers—they apply to all individuals on board, including the crew. As a result, to ensure the safety of all individuals secured by an SRS during civil aircraft operations, the FAA finalizes the language as proposed and applies the requirements of the rule (with the exception of the passenger briefing and demonstration) to all individuals, not just passengers onboard the aircraft.

The FAA agrees with Tuckamore that all public aircraft operations (PAO) should be exempt from the rule, but it disagrees with Tuckamore’s characterization of PAO. The status of an aircraft operation is either civil or public. If an aircraft is operating under public status, § 91.108 would not apply. If an aircraft is operating under civil status, § 91.108 would apply unless the operator applies for an exemption. Contrary to Tuckamore’s assertion, operations conducted by civil aircraft under contract with a valid government entity do constitute PAO as long as the contracting entity has filed a declaration letter with the local Flight Standards District Office (FSDO). Otherwise, the FAA considers the operator to be operating under civil status. Moreover, operations by a PAO contractor are, and must be, distinguishable from their civil aircraft operations. There is no mixed status of both civil and public aircraft operations. PAO status is determined on a flight-by-flight basis, and the operator should determine the nature of the flight prior to the operation to determine the applicability of § 91.108 to its

operation.<sup>10</sup> As a result of the foregoing, the FAA adopts the language as proposed and applies § 91.108 to civil aircraft operations, thereby excluding public aircraft operations. The FAA removed the word “registered” from proposed § 91.108(a) and (b)(1) as it is redundant to the rule’s application to civil aircraft—this revision does not change the applicability of this section.

Finally, the FAA notes that it amended the language in § 91.108 paragraphs (a) and (b)(2). In paragraph (a), the FAA made a technical amendment by adding a cross-reference to the definition of “supplemental restraint system” under § 1.1, further highlighting that the term is formally defined under § 1.1.<sup>11</sup> The FAA also amended paragraph (b)(2) by adding a reference to an “FAA-approved” airframe attachment point. This change reflects a similar change made in paragraph (e)(1)(i) in response to comments, and it highlights the fact that an SRS can only be attached to an airframe attachment point when the FAA has determined that point complies with the applicable part 21 approval requirements.<sup>12</sup> As a result, the FAA is adopting the language in paragraphs (a) and (b)(2) as amended.

#### *B. Harness and Lanyard (§ 91.108(c)(1) and (2))*

The FAA proposed that each SRS have a harness that secures around the individual’s torso and a lanyard that connects the harness to an airframe attachment point or points, ensuring that the individual’s torso remains inside the aircraft at all times. The FAA did not receive comments on this proposed provision; however, as with paragraph (b)(2), the FAA has included “FAA-approved” in reference to the attachment points for the same reasons cited previously. Therefore, the FAA is adopting the language in paragraph (c)(1) as proposed and the language in paragraph (c)(2) as amended.

#### *C. Impede Egress in an Emergency After Being Released (§ 91.108(c)(3))*

The FAA proposed that an SRS must not impede egress from the aircraft in an emergency after being released. The FAA did not receive comments on this

<sup>10</sup> See Public Aircraft Operations statutes, 49 U.S.C. 40102(a)(41) and 49 U.S.C. 40125; see also *Public Aircraft Operations—Manned and Unmanned*, AC 00–1.1B (Sept. 21, 2018), [https://www.faa.gov/documentLibrary/media/Advisory\\_Circular/AC\\_00-1.1B.pdf](https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_00-1.1B.pdf).

<sup>11</sup> For discussion on moving the SRS definition from § 91.108 to § 1.1, see section IV.R (“Definition (§ 1.1)”) of this preamble.

<sup>12</sup> See section IV.F (“Attachment Points”) for further discussion on the FAA-approval process.

proposed provision and adopts the language as proposed.

#### *D. Quick Release Requirements (§ 91.108(c)(4))*

As part of the SRS design requirements, the FAA proposed an SRS have a release mechanism that (1) an individual can quickly operate with minimal difficulty, (2) is attached to the front or side of the harness in a location easily accessible to and visible by the individual using it, (3) prevents inadvertent release, and (4) requires that the supplemental restraint system can be released without the use of a knife to cut the restraint, any other additional tool, or the assistance of any other individual to release the SRS.

The NTSB commented that the final rule should include standards that are specific to the operational environment in which an SRS is intended to be used to prevent certain quick release mechanisms from being susceptible to inadvertent release by neighboring occupants if they are seated close to each other.

The FAA has determined that the language in the rule is appropriately scoped to encompass any type of inadvertent release and in any type of operational environment. “Prevents inadvertent release” includes inadvertent release by the occupant of the SRS as well as any people proximate to the occupant of the SRS. The FAA amends § 91.108(c)(4)(iv), which previously set forth the requirement in the negative. This paragraph now states that an SRS must have a release mechanism that “can be released without the use of a knife to cut the restraint, and without any additional tool or the assistance of any other individual.” This grammatical change is only technical in nature and does not substantively change the previous intent of the provision. The FAA did not make any other changes to paragraph (c)(4) and adopts the language as amended.

#### *E. Who May Provide the SRS (§ 91.108(d))*

The FAA proposed to allow an individual to provide an SRS for use during a flight. The FAA explained that, in some cases, an individual (e.g., professional photographer, fire suppression technician, wildlife net gunner, etc.) may have access to an SRS and want to use it on different operators’ aircraft. For an individual providing their own SRS, the FAA proposed that they must confirm with the PIC, either verbally or in writing, as determined by the PIC, the SRS’s continued serviceability and readiness for its intended purposes. In addition,

the FAA proposed to require that each individual providing their own SRS complies with the sizing criteria for which the SRS is rated.

Two commenters, including Tuckamore Aviation, commented that individuals providing their own SRS for a flight should be required to present written confirmation of their SRS's serviceability, readiness, and size rating compliance. The commenters stated it is reasonable to expect an individual to have a written record of the inspection or an authorized release certificate under a maintenance release and that it is unreasonable to expect the aircraft operator or PIC to accept a verbal confirmation.

The FAA disagrees with the commenters. The rule is intended to provide the PIC flexibility in determining what method they will use for confirmation of the system's continued serviceability and readiness for its intended purposes. If a PIC determines written confirmation is necessary, they have the discretion to require that type of confirmation before the individual can occupy the SRS during flight operations.

The FAA also received a comment from Tuckamore Aviation stating that verification of continued serviceability and readiness of an SRS should be the responsibility of whoever is providing the SRS, whether it is the owner/operator or the individual.

The FAA agrees with Tuckamore Aviation. An individual providing their own SRS should be responsible for ensuring the system's continued serviceability and readiness for its intended purpose. That requirement is outlined in § 91.108(d)(1). The FAA also agrees that an operator that provides any SRS for their aircraft operations should be responsible for ensuring the SRS's serviceability and readiness because they are in the best position to make these determinations. As mentioned in the NPRM, one way to determine the SRS's serviceability and readiness is by ensuring the SRS is inspected and maintained in accordance with the manufacturer's instructions.<sup>13</sup> It would be unreasonable to place this onus on the PIC, who is not responsible for maintaining and inspecting SRS that an operator or individual provides.

The same rationale for paragraph (d)(1) also applies to paragraph (d)(2). The FAA determined that, in addition to an individual providing their own SRS, an operator that provides an SRS should be the responsible entity for ensuring that the individual who will occupy the SRS complies with the sizing criteria for

which the system is rated. Whoever provides the SRS is ultimately in the best position to know an SRS's sizing criteria and to determine whether the individual who will occupy the system meets those criteria. As a result, the FAA will require an operator and an individual providing their own SRS to (1) confirm with the PIC, either verbally or in writing, that the system is serviceable and ready for its intended purpose, and (2) ensure the individual who will occupy the SRS complies with the sizing criteria for which the system is rated. The FAA therefore amends the language in paragraphs (d)(1) and (2) as described to ensure responsibility is placed on the appropriate entity.

#### *F. Attachment Points (§ 91.108)(e)(1)(i) Through (iii))*

The FAA proposed under § 91.108(e)(1)(i) requiring a qualified individual to attach the SRS lanyard to an airframe attachment point(s) with a rated strength equal to or greater than the total weight of the occupant (or the combined weight if there is more than one occupant attached to an attachment point). The FAA received four comments regarding attachment points, how they are identified, and if they are FAA-approved.

Two commenters, including Tuckamore Aviation, commented that an approved airframe attachment point should be limited to existing hard points or mooring points identified by aircraft original equipment manufacturers (OEMs), a Supplemental Type Certificate (STC) hard point, or approved through engineering analysis. The commenters noted that weight of passengers considers only static loading and that the FAA should use the limit load requirements of either 14 CFR part 27 or part 29.

Another commenter stated that specific language defining exactly what type of anchor point may be used with an SRS would be beneficial. The commenter recommended that the FAA only allow "hard points" or "anchor points" specifically designed for restraint systems to be used in conjunction with an SRS and to not allow seat mounts, seat frames, etc., to be used with an SRS.

The FAA agrees with the commenters that clarification on the type of airframe attachment point is necessary. In order to ensure that an SRS will provide restraint to the user when in use, pilots and operators need to know how to identify an approved airframe attachment point. The FAA has revised the regulatory text to only allow an SRS to be connected to an FAA-approved airframe attachment point or points

rated equal to or greater than the weight of the individual using the supplemental restraint system (or the combined weight if there is more than one supplemental restraint system attached to an attachment point). Adding "FAA-approved" ensures that the SRS can only be attached to an airframe attachment point when the FAA has determined that point complies with the applicable part 21 approval requirements.<sup>14</sup> The FAA removed the word "strength" from paragraph (e)(1)(i) and instead focuses on the weight of the individual. Focusing on the weight of the individual reflects the fact that attachment point ratings are developed for all possible load conditions as long as the weight of the individual does not exceed the weight for which the attachment point is rated. Ultimately, the FAA has determined that any FAA-approved attachment point that is rated for a given individual's weight may be safely used for all load conditions in accordance with the airworthiness requirements (e.g., applicable part 21 approval requirements).<sup>15</sup> Thus, the attachment point will have sufficient strength to safely restrain the individual using an SRS for all flight load conditions. The FAA acknowledges that the commenter suggested that SRS only be allowed to attach to hard points or anchor points specifically designed for SRS. The FAA has determined that adding "FAA-approved" to the rule language achieves the same objective by specifying that the attachment points must have been evaluated by the FAA to allow an SRS to be attached to it. As a result of the foregoing, the FAA

<sup>14</sup> The FAA approval process under the airworthiness regulations (e.g., parts 27 and 29) would include evaluation of the design, strength, cabin safety requirements, and any other safety regulations determined to be applicable by the FAA. FAA approval confirms that the attachment point complies with the applicable regulatory requirements. A certificated aircraft must comply with the applicable airworthiness standards for certification under part 21, and parts installed on a certificated aircraft (e.g., FAA-approved attachment points) are evaluated to determine whether they meet the applicable part 21 approval requirements.

<sup>15</sup> The weight limits for aircraft attachment points are placarded within the aircraft, and the aircraft weight and center of gravity limitations are outlined in the aircraft flight manual. Under § 91.103 (Preflight action), prior to flight, each pilot is responsible for being familiar with pertinent information concerning the flight—that typically includes information outlined in the aircraft flight manual. In addition, § 91.9 (Civil aircraft flight manual, marking, and placard requirements) requires persons to comply with the operating limitations specified in the approved aircraft flight manual. Consequently, it is the PIC's responsibility to ensure that all occupants on board meet the attachment point limitations outlined for that aircraft.

<sup>13</sup> See 88 FR 81005.

finalizes the language in paragraph (e)(1)(i) as amended.

The FAA proposed under § 91.108(e)(1)(ii) that no SRS may be connected to any airframe attachment point located in the flightdeck. The FAA did not receive comments on this specific proposed provision; however, it did receive comments regarding prohibiting individuals seated in the flightdeck from using an SRS. For a discussion of those comments, see section IV.N. of this preamble. Because the FAA did not receive comments regarding airframe attachment points in the flightdeck, the FAA is adopting the language as proposed.

In the final comment pertaining to attachment points, the NTSB expressed concern that operators may use seat belt attachment points for SRS unless specifically prohibited, which may increase loads on seat belt and shoulder harness attachment points during emergency landing conditions. The NTSB urged the FAA to prohibit SRS from being attached to seat belt attachment points on the airframe.

The FAA agrees. In response to the NTSB's concern about attaching an SRS to a seatbelt or shoulder harness attachment point, the FAA added a requirement for FAA approval under § 91.108(e)(1)(iii) prohibiting an SRS from attaching to any seatbelt or shoulder harness attachment point(s) unless the attachment point is FAA-approved, meaning the attachment point or points is rated equal to or greater than the weight of the individual using the supplemental restraint system (or the combined weight if there is more than one supplemental restraint system attached to an attachment point). This change ensures that an SRS is attached only to attachment points that the FAA has determined comply with the applicable part 21 approval requirements. Therefore, the FAA finalizes the new language in paragraph (e)(1)(iii) as amended.

#### *G. Sizing Criteria (§ 91.108(e)(2))*

The FAA proposed that the SRS must fit the individual using it based on the sizing criteria for which the SRS is rated. The FAA did not receive comments on this proposed provision. Therefore, the FAA is adopting the language as proposed.

#### *H. SRS Function (§ 91.108(e)(3))*

In addition to the other points raised by the NTSB, the NTSB commented that the proposed rule did not address whether operators and individuals may secure additional items to the SRS that are not relevant to its function. The NTSB believed the final rule should

prohibit any items that are not relevant to the function of the SRS from being secured to it.

The FAA agrees with the NTSB. Any items attached to the SRS that are not relevant to its function could inhibit proper function of the SRS, could prevent quick release of the SRS, and could impede egress. As a result, the FAA has added a new paragraph (e)(3) that states, "Nothing may attach to the supplemental restraint system that is not relevant to its function as defined under § 1.1 of this chapter." Adding this paragraph will help ensure that nothing is attached to the SRS that interferes with the system's proper function or interferes with an individual's ability to quickly egress the aircraft.

#### *I. Pilot in Command (§ 91.108(f)(1) Through (5))*

The FAA proposed that regardless of who provides the SRS, the PIC has the overall responsibility to ensure that the SRS meets the requirements of § 91.108, and the PIC cannot permit an individual to use an SRS that does not meet the requirements of the rule. The FAA also proposed that the PIC must ensure the SRS's continued serviceability and readiness for its intended purpose (if provided by the operator or PIC) and ensure any individual using an SRS provided by the operator or PIC complies with the SRS sizing criteria. Finally, the FAA proposed that the PIC has final authority regarding whether the SRS may be used during flight operations and whether to authorize an individual to release the FAA-approved safety belt and, if installed, shoulder harness and remain secured only by the SRS.

As mentioned in section IV.E of this preamble, Tuckamore Aviation commented that the operator/owner or individual providing the SRS should be responsible for ensuring its continued serviceability and readiness for its intended purpose. The FAA agrees for the reasons cited previously and has revised paragraph (f)(2) accordingly, which mirrors the amendments in paragraph (d)(1). The FAA amends that paragraph to indicate that before each takeoff, the PIC must receive confirmation from the operator or any individual providing an SRS of the system's continued serviceability and readiness for its intended purpose. The PIC would no longer be responsible for ensuring the SRS is adequately maintained and inspected; instead, the PIC is simply responsible for receiving confirmation from the operator or any individuals that their SRS are serviceable and ready for use. The FAA did not receive comments on paragraphs

(f)(1), (3), (4), or (5). As a result of the foregoing, the FAA is adopting the language in paragraphs (f)(1) and (f)(3) through (5) as proposed and is adopting the language in paragraph (f)(2) as amended.

#### *J. Passenger Briefing (§ 91.108(g)(1) and (2))*

The FAA proposed to require a passenger briefing on how to use, secure, and release an SRS during a flight. The FAA also proposed to require that each passenger has been briefed on means of direct communication and notification between crewmembers and passengers. The FAA did not receive comments on this proposed provision. Therefore, the FAA is adopting the language as proposed.

#### *K. Passenger Demonstration (§ 91.108(h)(1) and (2))*

The FAA proposed a requirement that all passengers using an SRS demonstrate to the PIC, a crewmember, or other qualified person designated by the operator their ability to use, secure, and release the FAA-approved safety belts and, if installed, shoulder harnesses, as well as their ability to release the SRS quickly without assistance and with minimal difficulty. The FAA did not receive comments on this proposed provision. Therefore, the FAA is adopting the language as proposed.

#### *L. Individuals Unable To Meet the Demonstration Requirements of the Enhanced Safety Briefing (§ 91.108(i)(1))*

The FAA proposed that if an individual cannot demonstrate that they are able to use, secure, and release the FAA-approved safety belt and, if installed, shoulder harness, and able to release quickly the SRS with no assistance and with minimal difficulty, the individual would be prohibited from occupying or using an SRS during the flight. The FAA did not receive comments on this proposed provision; however, the FAA intended paragraphs (i)(1)(i) and (ii) to be required separately rather than together and therefore amends the conjunction between (i)(1)(i) and (ii) from "and" to "or." The failure to meet either of the two conditions is grounds for prohibiting the use of an SRS by that individual. The FAA therefore amends the regulatory text and is adopting the language in paragraph (i)(1) as amended. In addition, because the FAA has moved the definition of SRS from § 91.108 to § 1.1, the FAA revised the introductory text under § 91.108(i) to reference § 1.1 instead of

paragraph (l) and adopts the revised text as final.<sup>16</sup>

*M. Individuals Under the Age of 15 (§ 91.108(i)(2))*

In § 91.108(i)(2), the FAA proposed prohibiting anyone less than 15 years of age from using an SRS. Condon & Forsyth recommended that paragraph (i)(2) be deleted in its entirety because Condon & Forsyth believed it is arbitrary, overly broad, and unnecessary due to the requirements of proposed § 91.108(h) (*Passenger demonstration*) and § 91.108(e)(2), which requires an SRS to fit the individual using it based on the sizing criteria for which the SRS is rated.

The FAA disagrees with the commenter. Evacuation in an emergency landing is a highly stressful event. The purpose of the age restriction is to ensure that occupants of an SRS are able to release themselves in an emergency as well as not impede egress from the aircraft for themselves or the other occupants. In the *Exit Row Seating* rule, the FAA determined that 15 years of age is sufficient to perform the complex task of opening an emergency exit in an exit row and that younger individuals cannot be relied upon to perform a complex task in an emergency.<sup>17</sup> In that final rule, the FAA cited a study entitled “Survival in Emergency Escape from Passenger Aircraft,” which reviewed human factors relating to survival and the behavior of the passengers.<sup>18</sup> The final rule also cited a memorandum based on the Civil Aerospace Medical Institute’s (CAMI) “Accident/Incident Bio-Medical Data Reports” containing over 3,000 entries.<sup>19</sup> The study concluded that survival depends largely on the ability of the passenger to exit the aircraft, and the memorandum stated that extreme youth is a factor that generally impedes rapid evacuation.<sup>20</sup>

The FAA determined that the scenarios and analysis in the *Exit Row Seating* final rule are applicable to the release of an SRS in emergency conditions. The FAA has ample data from CAMI showing that children may not have the capacity to act quickly in an emergency, further supporting the FAA’s position that children under 15 years of age should not be encumbered by an SRS when needing to escape during an emergency. The inability of a child to egress in an emergency as a

result of an SRS would not only endanger the child, it could also endanger other individuals in the aircraft. In addition, since the *Exit Row Seating* rule took effect over thirty years ago, there have been no data showing that 15 years of age is an inappropriate metric for aircraft emergencies. The FAA therefore responds to the commenter that its determination of 15 years of age was not arbitrary, overly broad, or capricious because it was based on previous studies, data, and observations. Moreover, there is no precedent for individuals younger than 15 to act in an emergency and in a high-stress environment where critical decisions must be made in a matter of seconds. Because the FAA does not have other data supporting the proposition that children at any age younger than 15 possess the capacity to act quickly in an emergency, prescribing a rule that allows children of any specific age below 15 years to use an SRS would be arbitrary and capricious.

*N. Individuals Seated in the Flightdeck (§ 91.108(i)(3))*

The FAA proposed prohibiting anyone sitting in the flightdeck from using an SRS. The FAA received three comments regarding these prohibitions. Condon & Forsyth recommended that proposed § 91.108(i)(3) be deleted in its entirety since Condon & Forsyth believed it is arbitrary, overly broad, and fails to adequately address the very narrow and specific issue of flight/engine control interference for civil aircraft/rotorcraft that utilize floor-mounted engine controls. Alternatively, Condon & Forsyth proposed § 91.108(i)(3) should be limited in scope to any aircraft/rotorcraft that utilize floor-mounted engine controls like those found in the AS350B series helicopter.

Two commenters also stated that in certain aircraft, the flightdeck (cockpit) is well separated from the PIC position, either by a console or an aftermarket supplemental type certificated separation barrier that is designed to ensure no interference with flight or other controls in the flightdeck. The commenters further noted if there are no flight controls and/or if they are locked out in the area of the flightdeck (cockpit), the SRS should be permitted to be attached to an attachment hard point in this area.

The FAA disagrees with the commenters. In the NPRM, the FAA specifically stated that the flightdeck prohibition is based on a review of past accidents and incidents where unsecured items, including those with straps and lanyards, have a history of interfering with flight and engine

controls. In the Liberty Helicopters accident, a tether caught on and activated the floor-mounted engine fuel shutoff lever, resulting in the in-flight loss of engine power and subsequent ditching. Further, airworthiness standards codified at 14 CFR parts 23, 25, 27, and 29, which require that flight and engine controls not be subject to inadvertent operation, do not address circumstances when carry-on objects, tethers, or straps would inadvertently move a control. Consequently, crewmembers or passengers in the flightdeck should not be attached to or carry equipment that could snag on controls. Inadvertent activation of the fuel shutoff lever is only one type of accidental interference with flight controls that warrants concern.

Additional examples are discussed in the NPRM preamble.<sup>21</sup> Modifications to provide separation for a specific instrument or flight control have not been shown to protect from interference with all flight instruments or controls. With an SRS, an individual in the flightdeck has a greater range of motion, allowing many more potential actions that could interfere with the controls as compared to an individual restrained only by the FAA-approved safety belt. The FAA has determined that allowing any seating of an individual occupying an SRS in the flightdeck imposes an unacceptable level of risk to the aircraft operation and the individuals on board the aircraft, and it would not prevent an accident similar to the Liberty Helicopters accident. As a result, the FAA maintains the prohibition and adopts § 91.108(i)(3) as final.

*O. Passengers Who Occupy or Use an Approved Child Restraint System (§ 91.108(i)(4))*

The FAA proposed to prohibit anyone occupying or using a child restraint system from also using an SRS. The FAA did not receive comments on this proposed provision. Therefore, the FAA is adopting the language as proposed.

*P. Lap-Held Child (§ 91.108(j)(1) and (2))*

The FAA proposed prohibiting a child who has not reached their second birthday from being held by an adult during civil aircraft operations when the adult uses an SRS or during any operation in which the doors are opened or removed. The FAA did not receive comments on this proposed provision. Therefore, the FAA is adopting the language as proposed.

<sup>16</sup> For discussion on moving the SRS definition from § 91.108 to § 1.1, see section IV.R (“Definition (§ 1.1)”) of this preamble.

<sup>17</sup> *Exit Row Seating*, final rule, 55 FR 8054, 8066 (Mar. 6, 1990).

<sup>18</sup> See 55 FR 8058–8059.

<sup>19</sup> See 55 FR 8059.

<sup>20</sup> *Id.*

<sup>21</sup> See 88 FR 80997, 81006 (Nov. 21, 2023).

*Q. Excluded Operations (§ 91.108(k)(1) Through (3))*

The FAA proposed excluding certain operations from complying with § 91.108. First, under paragraph (k)(1), the FAA proposed excluding operations conducted under part 105 (“Parachute Operations”) or part 133 (“Rotorcraft External-Load Operations”). Second, under paragraph (k)(2), operators that are subject to the requirements of this rule, particularly paragraph (b)(1)—which requires each individual on board to be properly secured by either a safety belt/shoulder harness or an SRS—may operate an aircraft with the doors opened or removed even with flightcrew members on board who are subject to the requirements of § 91.105 (“Flight crewmembers at stations”) or § 135.171 (“Shoulder harness installation at flight crewmember stations”). Third, under paragraph (k)(3), the FAA proposed that the requirements under paragraph (b)(2), requiring an individual to be properly secured by an SRS before releasing their safety belt/shoulder harness, would not apply to flightcrew members subject to the requirements of §§ 91.105 or 135.171 to the extent they need to unfasten their shoulder harnesses in accordance with those sections.

An individual commented that consideration needs to be made for rotorcraft external load operations (part 133) where a crewmember is working with an open or removed door, *i.e.*, essential crewmember, *e.g.*, spotter, or winch operator for Class D or Class B human external cargo rotorcraft-load combination (RLC). The FAA intentionally excluded part 133 from this rulemaking because that part has its own unique certification and operating rules. As a result, changes to part 133 are not within the scope of this rulemaking.

Another commenter mentioned that for certain parachute operations, the rule needs to be considered for personnel working unseated and not belted into a seat or berth if the door is removed or opened. As with part 133, the FAA intentionally excluded part 105 from this rulemaking because that part has its own unique operating rules. As a result, changes to part 105 are not within the scope of this rulemaking.

The FAA makes technical amendments to paragraphs (k)(2) and (k)(3). Specifically, the FAA determined the regulatory text should state “§§ 91.105 or 135.171” instead of “§§ 91.105 and 135.171” (emphasis added). The intent of this provision is to allow an operator to conduct a flight with doors opened or removed under

§ 91.108(b)(1) even if there are flight crewmembers on board who are subject to *either* § 91.105 or § 135.171—not just those flight crewmembers who would be subject to *both* regulations. This grammatical change is only technical in nature and does not substantively change the previous intent of the provisions. The FAA did not make any other changes to paragraph (k). As a result of the foregoing, the FAA adopts the language in paragraphs (k)(1) through (3) as amended.

*R. Definition (§ 1.1)*

The FAA proposed under § 91.108(l) to define an SRS as any device that is not installed on the aircraft pursuant to an FAA approval, used to secure an individual inside an aircraft when that person is not properly secured by an FAA-approved safety belt and, if installed, shoulder harness, or an approved child restraint system. A supplemental restraint system consists of a harness secured around the torso of the individual using the SRS and a lanyard that connects the harness to an approved airframe attachment point inside the aircraft.

The FAA did not receive comments on this proposed provision; however, to reflect a similar change made in paragraph (e)(1)(i) in response to comments, the FAA has added “FAA-” in front of “approved airframe attachment point” to highlight the fact that an SRS can only be attached to an airframe attachment point that the FAA has determined complies with the applicable part 21 approval requirements. In addition, the FAA has moved the definition from § 91.108 to § 1.1 (“General definitions”) because “supplemental restraint system” is also referenced in parts 135 and 136. Placing the definition in § 1.1 will make it easier to find and will clarify that the definition applies to other parts that use the term, not just part 91. Therefore, the FAA is adopting the language as amended and placing it within § 1.1.

*S. Miscellaneous Amendments*

Tuckamore Aviation commented that there are many unique missions conducted by helicopters that may require waiver of this proposed rule and that the proposed regulations should not apply to all SRS being used in different operations.

The FAA disagrees. As explained in the NPRM, the FAA has determined that waivers are inappropriate in this rule. The waiver process does not allow the FAA to conduct the same level of analysis as the exemption process, which allows the FAA to analyze in more detail whether a proposed

operation outlined in a petition for exemption would not adversely affect safety or provides an equivalent level of safety compared to the regulatory requirement. Moreover, the FAA did not receive comments providing information that would support allowing this rule to be waivable. As a result, the FAA will not add § 91.108 to the list of waivable regulations under § 91.905.

The FAA received a comment from an individual proposing the withdrawal of the proposed rule and not allowing individuals to move about the aircraft. The commenter instead suggested adding a new paragraph to existing § 91.107 to prohibit SRS operations.

The FAA disagrees with the commenter. Section 91.108(a) prohibits persons from conducting a civil aircraft operation with individuals on board secured with an SRS unless the other requirements of the section have been met. The FAA has determined that these requirements help mitigate the identified safety risks during operations when SRS are used. Under this rule, operations with an SRS will be conducted with an acceptable level of safety. Finally, a blanket prohibition of SRS would be overly broad, arbitrary, and capricious because the FAA has already determined through the Emergency Order of Prohibition that some aircraft operations may be safely conducted while individuals are using SRS. As a result, the FAA is finalizing § 91.108 as amended, allowing operations conducted with SRS under certain circumstances as long as the requirements in the rule are met.

**V. Regulatory Notices and Analyses**

Federal agencies consider the impacts of regulatory actions under a variety of executive orders and other requirements. First, Executive Order 12866 and Executive Order 13563, as amended by 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. The FAA has provided a detailed Regulatory Impact Analysis (RIA) in the docket for this rulemaking. This portion of the preamble summarizes the FAA's analysis of the economic impacts of this final rule.

In conducting these analyses, the FAA has determined that this rule: will result in benefits that justify costs; is not an economically "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. Summary of the Regulatory Impact Analysis*

The FAA estimates that for safety benefits to equal or exceed the costs of the final rule, based on a 20-year analysis, two accidents of the same severity as the Liberty Helicopters accident would need to be mitigated. The estimated safety benefit in present value, from mitigating one part 91 and one part 135 helicopter accident (*i.e.*, an accident in year 10 and an accident in year 20 of the analysis period) will range from \$26.8 million to \$40.2 million at a 7 percent discount rate, from \$45.4 million to \$68.0 million at a 3 percent discount rate, and from \$52.2 million to \$78.3 million at a 2 percent discount rate.

The cost of the rule to operators, pilots, and passengers comes from purchasing harnesses and lanyards that meet specific requirements as set forth in this rule, conducting a pre-flight safety briefing on the use of the SRS, and requiring passengers to demonstrate their ability to remove the SRS in the event of an emergency. The FAA will also incur costs for periodic surveillance of parts 91 and 135 SRS operations. The estimated present value cost to the FAA over 20 years is \$1,240 at a 7 percent discount rate, \$1,263 at a 3 percent discount rate, and \$1,449 at a 2 percent discount rate. The estimated present value total cost to industry and the FAA for these requirements over 20 years is \$22.3 million at a 7 percent discount rate, \$31.7 million at a 3 percent discount rate, and \$34.9 million at a 2 percent discount rate. Estimated safety benefits and costs are shown in the table below.

TABLE 1—TOTAL BENEFITS AND COSTS OVER 20 YEARS  
[Millions of USD]\*

Provisions		Safety benefits		Costs	Safety benefits		Costs	Safety benefits		Costs
		Low	High		Low	High		Low	High	
		7 Percent present value			3 Percent present value			2 Percent present value		
91.108—Supplemental restraint systems, including operations with doors opened or removed (assuming an accident occurs in year 10).	Part 135 .....	\$17.8	\$26.7	\$19.4	\$26.0	\$39.0	\$27.5	\$28.7	\$43.0	\$30.4
	Part 91 .....	9.0	13.6	2.9	19.4	29.0	4.1	23.5	35.3	4.5
Total .....		26.8	40.2	22.3	45.4	68.0	31.7	52.2	78.3	34.9
Annualized .....		2.5	3.8	2.1	3.0	4.6	2.1	3.2	4.8	2.1

\* Table values have been rounded. Totals may not add due to rounding.

In 2018, in response to the Liberty Helicopters accident, the FAA issued an Emergency Order of Prohibition, which prohibited the use of supplemental passenger restraint systems (SPRS) that cannot be released quickly in an emergency in doors-off flight operations. The FAA also estimates the cost and benefit of the rule using the Emergency Order of Prohibition as the baseline. The FAA estimates that the undiscounted cost of the rule, above the Emergency Order of Prohibition, is \$22.9 million (\$11.8 million at 7 percent present value, \$16.8 million at 3 percent present

value, or \$18.9 million at 2 percent present value). When annualized, at a 7 percent, 3 percent, or 2 percent discount rate, the cost is approximately \$1.1 million. The costs come entirely from the demonstration by passengers of the ability to release the device. The FAA considers that a passenger demonstrating the ability to release themselves from the device adds to the efficacy of the rule above the Emergency Order of Prohibition. However, the FAA is unable to quantify the incremental safety benefits gained by the passenger demonstration.

1. Who is potentially affected by this rule?

This rule affects all flights with doors opened or removed and all operations with individuals on board who choose to use an SRS, except for operations conducted under part 105, Parachute Operations, or conducted under part 133, Rotorcraft External-Load Operations, and public aircraft operations. The FAA identified the following, from Flight Standards' Web-based Operations Safety System (June 2021), as the population that could be affected:

TABLE 2—POTENTIAL AFFECTED OPERATORS

CFR	Number of operators	Number of rotorcraft	Number of operators	Number of aircraft
	Rotorcraft		Fixed Wing	
91 .....	405	1,051	716	1,894
135 .....	472	2,917	1,728	8,411

However, based on the number of requests for SRS Letters of Authorization, the FAA narrowed the population to 26 part 91 operators and 40 part 135 operators over the next 20 years.

#### General Assumptions:

- The present value discount rate of two, three, and seven percent is used as required by the Office of Management and Budget.<sup>22</sup>

- Period of Analysis: 20 years to capture replacement of an SRS occurring every 10 years.<sup>23</sup>

- The estimated average number of passengers per flight is between 3 to 5 passengers. The FAA used 4 passengers in the analysis.

- Estimated time to create and update content for enhanced passenger safety briefing: <sup>24</sup> 2 hours per operator.

Assume updates occur every 10 years to align with the replacement cycle of harnesses and lanyards.

- Estimated pilot time to complete enhanced safety briefing: <sup>25</sup> 0.03 hours (2 minutes)

- Estimated time for passenger competency demonstration: <sup>26</sup> 0.02 hours (1 minute)

**Baseline:** There were no requirements for an SRS prior to 2018 when the FAA issued Emergency Order of Prohibition No. FAA–2018–0243. Since the Emergency Order of Prohibition is temporary, the baseline used in this analysis is pre-Emergency Order.

However, the Emergency Order requires harnesses and lanyards that fulfill the same requirements as the final rule; therefore, operators already incur the cost of the harness and lanyard.

Operators will primarily incur the additional cost of the passenger demonstration and briefing under the rule. This is analyzed as a second

baseline. The extension of the Emergency Order of Prohibition was considered as an alternative, and the cost and benefits are estimated in the alternative section below.

#### 2. Benefits of This Rule

The benefits of this rule include preventing future accidents similar to the Liberty Helicopters accident. The NTSB final safety report identified the probable cause of this accident as Liberty Helicopters' use of an SRS system. The SRS caught on and activated the engine fuel shutoff lever, located in the flightdeck, and resulted in the loss of engine power and the subsequent ditching. That same SRS, worn by passengers on that flight, also contributed to the severity of the accident by hindering the passengers' quick egress from the aircraft. This rule will prohibit use of an SRS in the flightdeck, address the inadvertent activation of the fuel shutoff lever, and implement SRS requirements that will reduce the likelihood of passengers being unable to remove an SRS when needed in an emergency.

The Liberty Helicopters accident resulted in five fatalities, one minor injury, and a substantially damaged aircraft. The analysis assumes that two accidents of similar magnitude would occur in the 20-year time horizon, one under part 91 and one under part 135. While the SRS operation requirements, passenger briefing, and passenger demonstration set forth in the rule would have lessened the severity of the accident, the NTSB determined the probable cause of the accident to be the inadvertent activation of the floor-mounted engine fuel shutoff lever by the passenger harness/tether system.<sup>27</sup> Prohibiting the use of an SRS in the flightdeck will help mitigate the risk factor that initiated the accident. The benefits include avoided casualties and aircraft damage. Multiplying the five casualties by a value of statistical life (VSL) of \$11.6 million yields a total of \$58.0 million as the social cost of these fatalities.<sup>28</sup> The pilot also sustained minor injuries at an avoided minor injury rate of \$34,800, and the

helicopter, an Airbus AS350 B2, suffered substantial damage valued at \$210,243.<sup>29</sup> Adding the value of avoided casualties, including the pilot's injuries, to aircraft damage gives a total potential loss of \$58.2 million that enhanced safety measures are expected to avert.

The FAA Office of Accident Investigation and Prevention evaluated how effective the proposed requirements would be at addressing the NTSB urgent safety recommendation and any other factors that may have contributed to the Liberty Helicopters accident. Based on that assessment, the FAA used a range for the effectiveness rate of 0.6 to 0.9.<sup>30</sup> Multiplying the effectiveness rates by the estimated potential loss of \$58.2 million, mentioned above, yields an estimated range of \$34.9 to \$52.4 million for one averted accident. Assuming an accident occurs every 10 years over a 20-year time horizon (*i.e.*, an accident in year 10 and year 20 of the analysis period), the present value of benefits ranges from \$26.8 million to \$40.2 million at a 7 percent discount rate, \$45.4 million to \$68.0 million at a 3 percent discount rate, and \$52.2 to \$78.3 million at a 2 percent discount rate.

#### 3. Costs Relative to Pre-Emergency Order of Prohibition

This rule will prohibit flight operations with an SRS unless the SRS meets specific requirements. Although these requirements will be under part 91, they will affect any operation with an SRS except for operations conducted under part 105, Parachute Operations, and operations conducted under part 133, Rotorcraft External-Load Operations. This subsection examines the costs relative to the regulatory environment before the Emergency Order of Prohibition when no rules specifically addressed aircraft operations conducted with the use of SRS.

This rule will require the SRS (which would consist of a harness and lanyard, at a minimum) to have an accessible front or side release mechanism that can be quickly operated with minimal difficulty during an emergency. The rule

<sup>22</sup> Office of Management and Budget, OMB Circular A–4 (2023), guidance for the development of regulatory analysis.

<sup>23</sup> A sample of harnesses provided for consideration of an SRS LOA, such as Yates 363 and 338, have a maximum life span of 10 years. See Product manuals. Available at <http://yatesgear.com/en/special-forces-full-body-spine-harness> and <http://yatesgear.com/en/ars-heli-ops-harness>.

<sup>24</sup> Part 135 Operating Requirements: Commuter and On-Demand Operations and Rules Governing Persons on Board such Aircraft, Paperwork Reduction Act Supporting Statement, (OMB No. 2120–0039); at 8 (Apr. 9, 2019) (estimate of time and volume of operators and passenger briefings pursuant to § 135.117, Briefing of passengers before flight), available at <https://www.federalregister.gov/documents/2022/04/05/2022-07066/agency-information-collection-activities-requests-for-comments-clearance-of-a-renewed-approval-of->

<sup>25</sup> *Id.*

<sup>26</sup> This estimate is a combination of the time identified in the Emergency Order and the FAA's assertion that a passenger will need to release the SRS in under a minute to be able to evacuate a helicopter in an emergency.

<sup>27</sup> National Transportation Safety Board. (March 11, 2018) *Inadvertent Activation of the Fuel Shutoff Lever and Subsequent Ditching Liberty Helicopters Inc., Operating a FlyNYON Doors-Off Flight Airbus Helicopters AS350 B2, N350LH* (Report No. NTSB/AAR–19/04 or PB2020–100100). Retrieved from <https://www.ntsb.gov/investigations/AccidentReports/Reports/AAR1904.pdf>.

<sup>28</sup> Departmental Guidance on Valuation of a Statistical Life in Economic Analysis, Issued Date: 3/23/2021 <https://www.transportation.gov/office-policy/transportation-policy/valued-departmental-guidance-on-valuation-of-a-statistical-life-in-economic-analysis>.

<sup>29</sup> Economic Values for FAA Investment and Regulatory Decisions, A Guide: 2021 Update, Section 5, Table 5–10: General Aviation Restoration Costs (\$2018). These numbers are adjusted to reflect 2020 dollars. [https://www.faa.gov/regulations\\_policies/policy\\_guidance/benefit\\_cost](https://www.faa.gov/regulations_policies/policy_guidance/benefit_cost).

<sup>30</sup> *Id.* at Appendix A at 61 (stating, High effectiveness—The JIMDAT-assigned values in which enhancements that are judged to have a “low” probability of preventing an accident receive a numerical value ranging from 0.1 to 0.4, reflecting a one in ten chance of preventing the accident to a 40% chance. Similarly, “medium” may receive numerical ratings of 0.4 to 0.6 and “high” may receive up to 0.95).

will require the lanyard to be connected to an FAA-approved airframe attachment point or points that are not in the flightdeck and that are rated equal to or greater than the weight of the individual (or the combined weight if there is more than one SRS attached to an attachment point). The SRS lanyard must ensure the torso of the person using the SRS remains inside the aircraft at all times. Additionally, for operations with doors opened or removed, each person will need to occupy an approved seat or berth with a safety belt and, if installed, shoulder harness, properly secured about the individual during all phases of flight; or occupy an approved seat or berth with a safety belt and, if installed, shoulder harness, properly secured about the individual during movement on the surface, takeoff, and landing, in

accordance with § 91.107 and during other phases of flight, the individual will use an SRS.

This rule will also require operators to provide passengers with an enhanced safety briefing that includes a passenger’s satisfactory demonstration of competency to release quickly the SRS with no assistance. The rule also implements certain requirements regarding persons who may seek to participate in such flights. Passengers unable to demonstrate their ability to use, secure, and release their seatbelt/shoulder harness or their ability to release quickly from an SRS; passengers under 15 years of age; individuals seated in the flightdeck; and passengers occupying an approved child restraint system will be prohibited from using the SRS. Furthermore, children may not be held in an adult’s lap if the adult uses

an SRS or if the aircraft doors are opened or removed. The FAA intends these requirements to ensure the safety of all aircraft occupants on such flights.

The cost of the rule to operators, passengers, and pilots will arise out of purchasing harnesses and lanyards that meet specific requirements as set forth in this rule, a pre-flight safety briefing on the use of the SRS, and passengers demonstrating their ability to remove the SRS in the event of an emergency. The cost to the FAA comes from approving the addition of SRS to part 135 passenger safety briefing cards and for periodic surveillance of parts 91 and 135 SRS operations. The estimated cost of these requirements is \$22.3 million at 7 percent present value, \$31.7 million at 3 percent present value, and \$34.9 million at 2 percent present value, as shown in the table below.

TABLE 3—RULE TOTAL COST OVER 20 YEARS \*

Requirements	Part 91	Part 135	Total
Harness + Replacement .....	\$172,608	\$623,616	\$796,224
Lanyard + Replacement .....	43,152	155,904	199,056
Create Briefing .....	14,572	19,774	34,346
Passenger Briefing (Pilot + Passenger) .....	16,840,356	2,139,920	18,980,276
Passenger Demonstration (Pilot + Passenger) .....	20,342,887	2,584,989	22,927,876
FAA costs .....	583	898	1,481
<b>Total Cost .....</b>	<b>37,414,159</b>	<b>5,525,101</b>	<b>42,939,259</b>
Total Cost at 7 Percent Present Value .....	19,361,893	2,933,645	22,295,537
Total Cost at 3 Percent Present Value .....	27,541,440	4,109,635	31,651,075
Total Cost at 2 Percent Present Value .....	30,365,509	4,500,554	34,866,063

\* Table values have been rounded. Totals may not add due to rounding.

4. Costs Relative to Post-Emergency Order of Prohibition

After the FAA published the Emergency Order of Prohibition, operators were required to comply with many of the requirements of this rule. This subsection measures the costs that are above and beyond the costs of complying with the Emergency Order of Prohibition.

There are three main differences between this rule and the Emergency Order of Prohibition. First, the Emergency Order of Prohibition does not prohibit passengers using an SRS from being seated in the flightdeck, while this rule will prohibit this seating arrangement. The FAA estimates minimal cost from this prohibition.

Second, the Emergency Order of Prohibition applies only to operations conducted for compensation or hire. This rule will apply to all civil

operations except operations under parts 105 and 133. The FAA does not have precise data on operations using an SRS that are not for compensation or hire, and so assumes there would be a negligible number.

Finally, the Emergency Order of Prohibition does not require a passenger demonstration of the passenger’s ability to release the SRS. The FAA estimates the undiscounted costs, beyond the Emergency Order of Prohibition, to be \$22.9 million (\$11.8 million at 7 percent present value, \$16.8 million at 3 percent present value, or \$18.9 million at 2 percent present value). At any of these three discount rates, the annualized cost is approximately \$1.1 million. These costs come entirely from the value of passenger and pilot time spent on the demonstration.

5. Alternatives Considered

The FAA considered proposing the Emergency Order of Prohibition as the rule but applying it to all civil operations. The Emergency Order of Prohibition prohibits the use of an SRS that cannot be released quickly in an emergency during flight operations for compensation or hire with the doors opened or removed. The Emergency Order of Prohibition requires: a supplemental harness that meets specific safety requirements, an application for an LOA to include a link to a video (roughly 8 seconds long) demonstrating the user’s ability to release themselves from the supplemental harness without assistance, a preflight briefing on the release of the SRS, and FAA review and approval of the application. The table below summarizes the costs of each of these requirements.

TABLE 4—EMERGENCY ORDER OF PROHIBITION TOTAL COST OVER 20 YEARS \*

Requirements	Part 91	Part 135	Total
Cost of Harness + Application + Video + Safety Briefing .....	\$4,747,142	\$1,225,615	\$5,972,757
FAA Cost .....	2,399	4,107	6,506
Total Cost .....	4,749,541	1,229,722	5,979,263
Total Cost at 7 Percent Present Value .....	4,394,485	986,054	5,380,539

\* Table values have been rounded. Totals may not add due to rounding.

The FAA considered proposing the above requirements in this rule, but after careful review of the NTSB final accident report and the information gathered through the Emergency Order of Prohibition, the FAA determined that it could tailor the requirements to increase the likelihood that passengers would be able to quickly release the supplemental restraint in the event of an emergency. For example, the Emergency Order of Prohibition does not address the use of an SRS in the flightdeck. Additionally, this rule will require operators to conduct an enhanced safety briefing and passengers to complete a demonstration. Passengers in the Liberty Helicopters accident received a briefing on how to release their supplemental restraints but were unable to release them during the accident. Requiring passengers to demonstrate successfully their ability to release the SRS would ensure passengers not only understand how to release themselves from the SRS during an emergency but also increase the likelihood that they would be able to release themselves from the SRS during an emergency. The passenger demonstration requirement will be necessary to achieve the effectiveness estimate of 0.6 to 0.9, as discussed in the main analysis of the rule. However, uncertainty exists regarding the incremental reduction in the effectiveness of a regulatory alternative that would not require passengers to demonstrate proficiency in using the SRS.

Please see the RIA available in the docket for more details.

#### B. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) of 1980, Public Law 96–354, 94 Stat. 1164 (5 U.S.C. 601–612), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121, 110 Stat. 857, Mar. 29, 1996) and the Small Business Jobs Act of 2010 (Pub. L. 111–240, 124 Stat. 2504 Sept. 27, 2010), 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.

The FAA published an Initial Regulatory Flexibility Analysis (IRFA) in the proposed rule to aid the public in commenting on the potential impacts to small entities. The FAA considered the public comments in developing the final rule and this Final Regulatory Flexibility Analysis (FRFA). A FRFA must contain the following:

(1) A statement of the need for, and objectives of, the rule;

(2) A statement of the significant issues raised by the public comments in response to the IRFA, a statement of the assessment of the agency of such issues, and a statement of any changes made in the proposed rule as a result of such comments;

(3) The response of the agency to any comments filed by the Chief Counsel for Advocacy of the Small Business Administration (SBA) in response to the proposed rule, and a detailed statement of any change made to the proposed rule in the final rule as a result of the comments;

(4) A description of and an estimate of the number of small entities to which the rule will apply or an explanation of why no such estimate is available;

(5) A description of the projected reporting, recordkeeping, and other compliance requirements of the rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;

(6) A description of the steps the agency has taken to minimize the significant economic impact on small entities consistent with the stated objectives of applicable statutes, including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the final rule and why each of the other significant alternatives to the rule considered by the agency which affect the impact on small entities was rejected.

#### 1. Need for and Objectives of the Rule

This rule addresses safety issues that contributed to the Liberty Helicopters accident to ensure the safety of similar operations. The operator-provided harness/tether system the passengers used on that flight, while intended as a safety measure when the aircraft was in flight, hindered the passengers' egress from the aircraft. This rule addresses the safety issue by implementing specific requirements for individuals using an SRS or participating in flights with doors opened or removed.

For flights with doors opened or removed, each person will be required to either occupy an approved seat or berth with a safety belt and, if installed, shoulder harness, properly secured about the individual during all phases of flight; or occupy an approved seat or berth with a safety belt and, if installed, shoulder harness, properly secured about the individual during movement on the surface, takeoff, and landing, and during other phases of flight, the individual uses an SRS.

For flights using an SRS, this rule will require the harness and lanyard, at a minimum, to have an accessible front or side release mechanism that can be operated quickly with minimal difficulty during an emergency. As proposed, the lanyard must be connected to an FAA-approved airframe attachment point or points that are not in the flightdeck and that are rated equal to or greater than the weight of the occupant (or the combined weight if there is more than one SRS attached to an attachment point). This rule will require the lanyard to ensure the torso of the person using the SRS remains inside the aircraft. Additionally, operators will be required to provide passengers with an enhanced safety briefing, and passengers must demonstrate the capability to release quickly the SRS with no assistance. Passengers under 15 years of age; individuals seated in the flightdeck; passengers occupying an approved child restraint system; or passengers unable to demonstrate their ability to use, secure, and release the safety belt/shoulder harness or their ability to release

quickly from the SRS will be prohibited from using the SRS.

2. Significant Issues Raised in Public Comments

No comments relating to small entities were raised by the public.

3. Response to SBA Comments

No comments were received from the SBA.

4. Description and Estimate of the Number of Small Entities

This rule will affect flights with doors opened or removed and all operations with individuals on board who choose to use an SRS. A search of the Web-based Operations Safety System (WebOPSS) database, as of June 2021, indicates that the rule will affect 1,121 part 91 operators and 2,200 part 135

operators. These flights include sightseeing, motion picture and television filming, electronic news gathering, power line inspection, game management, and fire suppression, for example. The Small Business Administration (SBA) defines charter nonscheduled passenger air transport (NAICS 481211) with less than 1,500 employees or scenic and sightseeing transportation (NAICS 487990) with less than \$8.0 million in revenue as small businesses.<sup>31</sup> Census data indicates that revenue for the scenic and sightseeing transportation industry (NAICS 4879), which includes airplane and helicopter operations, was roughly \$502.5 million for 220 establishments, and for nonscheduled chartered passenger air transportation (NAICS 481211), there are 28,261 employees for 1,604 firms.<sup>32</sup> Based on census data and the SBA

definition of a small business, a substantial number of operators affected by this rule would be considered small businesses.

5. Projected Reporting, Recordkeeping, and Other Compliance Requirements

The cost of the rule will include purchasing harnesses and lanyards that meet specific requirements as set forth in this rule, a preflight safety briefing on the use of the SRS, and passengers' satisfactory demonstration of their ability to use, secure, and release their safety belt/shoulder harness and their ability to quickly release their SRS without assistance and with minimal difficulty. The estimated cost for these requirements per year for a part 91 operator is \$71,949 and \$6,905 for a part 135 operator, as shown in the table below.

TABLE 5—ESTIMATED COST PER OPERATOR \*

Provisions	Part 91 <sup>33</sup>	Part 135 <sup>34</sup>
Harness + Replacement .....	\$6,639	\$15,590
Lanyard + Replacement .....	1,660	3,898
Create + Update Briefing .....	560	494
Passenger Briefing (Pilot + Passenger) .....	647,706	53,498
Passenger Demonstration (Pilot + Passenger) .....	782,419	64,625
Total Over 20 Years .....	1,438,984	138,105
Estimated Yearly Cost Per Operator .....	71,949	6,905

\* Table values have been rounded. Totals may not add due to rounding.

6. Significant Alternatives Considered

The FAA considered proposing to codify the requirements of the Emergency Order of Prohibition applied to all civil operations but determined to propose adding the requirement for operators to brief passengers on the SRS and verify that passengers could release the SRS in an emergency.

The Emergency Order of Prohibition currently prohibits the use of an SRS during flights with doors opened or removed unless it complies with the process referenced in FAA Order 8900.4. FAA Order 8900.4 requires harnesses and lanyards that fulfill the same requirements this rule would require; therefore, operators already incur the cost of the harness and lanyard. Under this rule, operators will primarily incur the additional cost of the enhanced safety briefing. However, the majority of the cost comes from the passenger briefing and the passenger demonstration and is directly tied to the passenger count. Based on the foregoing,

this rule will not have 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 effect of this final rule and determined that it will have only a domestic impact and, therefore, no effect on international trade.

D. Unfunded Mandates Assessment

Title II of the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4) requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in an expenditure of \$100 million or more (in 1995 dollars) in any one year by State, local, and Tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a “significant regulatory action.” The FAA currently uses an inflation-adjusted value of \$183.0 million in lieu of \$100 million.

This final rule does not contain such a mandate. Therefore, the requirements of Title II of the Act do not apply.

<sup>31</sup> United States Small Business Administration, *Table of Size Standards* (2019), available at <https://www.sba.gov/document/support-table-size-standards>.

<sup>32</sup> United States Census Bureau, *Transportation and Warehousing: Geographic Area Series: Summary Statistics for the U.S., States, Metro Areas, Counties, and Places* (2012), available at <https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>.

<sup>33</sup> Total cost per requirement is divided by 26 part 91 operators.

<sup>34</sup> Total cost per requirement is divided by 40 part 135 operators.

*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.

According to the 1995 amendments to the Paperwork Reduction Act (5 CFR 1320.8(b)(2)(vi)), an agency may not collect or sponsor the collection of information, nor may it impose an information collection requirement unless it displays a currently valid Office of Management and Budget (OMB) control number.

This action contains the following new information collection requirement. As required by the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)), the FAA has submitted this information collection requirement to OMB for its review. The FAA notes that

when the FAA submitted this information collection associated with the NPRM to OMB for its review, OMB assigned control number 2120–0820. The FAA has submitted information collection 2120–0820 to OMB for final approval to allow the FAA to collect this information.

*Summary:* This rule will require operators conducting operations using SRS, including during operations with doors opened or removed, to present updated safety information to passengers.

*Public Comments:* The FAA did not receive any comments on the information collection requirements.

*Use:* Part 91 and 135 operators must create and conduct an enhanced passenger safety briefing.

*Respondents:* As of June 2019, the FAA estimates that 21 part 91 operators

(based on the number of approved Letter of Authorization holders and the A049 population) and 31 part 135 operators will choose to offer flights with use of an SRS over the next 20 years.

*Frequency:* Operators who choose to offer flights using an SRS must initially develop an enhanced passenger safety briefing pertaining to the SRS. The FAA also anticipates that operators will need to periodically update their briefings every ten years based on a typical SRS replacement period.

*Annual Burden Estimate:* The total burden hours are calculated by multiplying the number of enhanced passenger safety briefings and subsequent updates by 2 hours per briefing. As shown in the table below, this sums to 90 hours for part 91 operators and 134 hours for part 135 operators over 3 years.

TABLE 6—INFORMATION COLLECTION BURDENS

Year	Number of operators		Time to develop or update briefing (hours per briefing)	Total hour burden	
	Part 91	Part 135		Part 91	Part 135
1 .....	21	31	2	42	62
2 .....	0	0	2	0	0
3 .....	0	1	2	0	2
Total .....				42	64
Average Over 3 Years .....				14	21

For part 91 operators, the FAA assumes that a pilot, with an hourly wage of \$75.90, will be the person developing and updating the content of the briefing. At \$75.90, the total cost burden is \$3,188 (\$2,602 at 7 percent present value) over a 3-year period. For part 135 operators, the Director of Operations, at an hourly wage of \$68.66,

can be the person responsible for developing the briefing. The total cost burden for part 135 operators over a 3-year period is \$4,394 (\$3,578 at 7 percent present value) for developing the content of the briefing.

Pilots will also brief passengers on the content of the enhanced passenger briefing prior to each flight. The

estimated number of flights per year is multiplied by 2 minutes per briefing for parts 91 and 135 annual burden hours to brief passengers. The total burden hours over 3 years, as shown in the table below, sums to 8,177 hours for part 91 operators and 962 hours for part 135 operators.

TABLE 7—TOTAL HOUR BURDEN FOR ENHANCED SAFETY BRIEFING

Year	Number of flights		Time to present the enhanced safety briefing (hours per briefing)	Total hour burden	
	Part 91	Part 135		Part 91	Part 135
1 .....	89,935	10,475	0.03	2,698	314
2 .....	90,845	10,684	0.03	2,725	321
3 .....	91,780	10,897	0.03	2,753	327
Total .....				8,177	962
Average Over 3 Years .....				2,726	321

A pilot presenting the briefing is estimated to earn an hourly wage of \$75.90. At \$75.90, the total cost burden over a 3-year period for part 91 operators is \$620,598 (\$506,593 at 7 percent present value) and \$72,989 (\$59,581 at 7 percent present value) for part 135 operators.

*F. International Compatibility*

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to conform to International Civil Aviation Organization (ICAO) Standards and Recommended Practices (SARPs) to the maximum extent practicable. The FAA

has reviewed the corresponding ICAO Standards and Recommended Practices and has identified no conflicts with these regulations.

*G. 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.

This rulemaking action provides a framework for civil aircraft operations conducted with SRS, including during operations with doors opened or removed. It does not affect the frequency of aircraft operations in the airspace of the United States. The FAA has reviewed the implementation of the rulemaking action and determined it is categorically excluded from further environmental review. Possible extraordinary circumstances that would preclude the use of a categorical exclusion have been examined, and the FAA has determined that no such circumstances exist. After careful and thorough consideration of the rulemaking action, the FAA finds that it does not require preparation of an Environmental Assessment or Environmental Impact Statement in accordance with the requirements of NEPA, Council on Environmental Quality (CEQ) regulations, and FAA Order 1050.1F.

**VI. Executive Order Determinations**

*A. Executive Order 13132, Federalism*

The FAA has analyzed this final rule under the principles and criteria of Executive Order 13132, Federalism. The 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 13211, Regulations That Significantly Affect Energy Supply, Distribution, or Use*

The FAA analyzed this final rule under Executive Order 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use. 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.

*C. 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.

**VIII. 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 <https://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 <https://www.federalregister.gov> and the Government Publishing Office’s website at <https://www.govinfo.gov>. A copy may also be found on the FAA’s Regulations and Policies website at [https://www.faa.gov/regulations\\_policies](https://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 amendment 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 <https://>

[www.faa.gov/regulations\\_policies/rulemaking/sbre\\_act/](https://www.faa.gov/regulations_policies/rulemaking/sbre_act/).

**List of Subjects**

*14 CFR Part 1*

Air transportation.

*14 CFR Part 11*

Administrative practice and procedure, Reporting and recordkeeping requirements.

*14 CFR Part 91*

Air carrier, Aircraft, Airmen, Aviation safety, Charter flights, Reporting and recordkeeping requirements.

*14 CFR Part 135*

Air taxi, Aircraft, Airmen, Aviation safety, Reporting and recordkeeping requirements.

*14 CFR Part 136*

Air transportation, Aircraft, Aviation safety, National parks, Recreation and recreation areas, Reporting and recordkeeping requirements.

**The Amendment**

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

**PART 1—DEFINITIONS AND ABBREVIATIONS**

■ 1. The authority citation for part 1 is revised to read as follows:

**Authority:** 49 U.S.C. 106(f), 40113, 44701.

■ 2. Amend § 1.1 by adding in alphabetical order the definition of “Supplemental restraint system” to read as follows:

**§ 1.1 General definitions.**

\* \* \* \* \*

*Supplemental restraint system* means any device that is not installed on the aircraft pursuant to an FAA approval, used to secure an individual inside an aircraft when that person is not properly secured by an FAA-approved safety belt and, if installed, shoulder harness, or an approved child restraint system. It consists of a harness secured around the torso of the individual using the supplemental restraint system and a lanyard that connects the harness to an FAA-approved airframe attachment point inside the aircraft.

\* \* \* \* \*

**PART 11—GENERAL RULEMAKING PROCEDURES**

■ 3. The authority citation for part 11 is revised to read as follows:

**Authority:** 49 U.S.C. 106(f), 40101, 40103, 40105, 40109, 40113, 44110, 44502, 44701–44702, 44711, 46102, and 51 U.S.C. 50901–50923.

■ 4. Amend § 11.201 in the table in paragraph (b) by revising the entry for part 91 to read as follows:

**§ 11.201 Office of Management and Budget (OMB) control numbers assigned under the Paperwork Reduction Act.**

\* \* \* \* \*  
(b) \* \* \*

14 CFR part or section identified and described	Current OMB control number
Part 91 .....	2120–0005, 2120–0026, 2120–0027, 2120–0573, 2120–0606, 2120–0620, 2120–0631, 2120–0651, 2120–0820.

**PART 91—GENERAL OPERATING AND FLIGHT RULES**

■ 5. The authority citation for part 91 is revised to read as follows:

**Authority:** 49 U.S.C. 106(f), 40101, 40103, 40105, 40113, 40120, 44101, 44111, 44701, 44704, 44709, 44711, 44712, 44715, 44716, 44717, 44722, 46306, 46315, 46316, 46504, 46506–46507, 47122, 47508, 47528–47531, 47534, Pub. L. 114–190, 130 Stat. 615 (49 U.S.C. 44703 note); articles 12 and 29 of the Convention on International Civil Aviation (61 Stat. 1180), (126 Stat. 11).

■ 6. Amend § 91.107 by revising paragraph (a)(3)(i) to read as follows:

**§ 91.107 Use of safety belts, shoulder harnesses, and child restraint systems.**

(a) \* \* \*  
(3) \* \* \*

(i) Be held by an adult, except as outlined in § 91.108(j), who is occupying an approved seat or berth, provided that the person being held has not reached his or her second birthday and does not occupy or use any restraining device;

\* \* \* \* \*

■ 7. Add § 91.108 to read as follows:

**§ 91.108 Use of supplemental restraint systems.**

(a) *Use of supplemental restraint systems.* Except as provided in this section, no person may conduct an operation in a civil aircraft in which any individual on board is secured with a supplemental restraint system, as defined in § 1.1 of this chapter.

(b) *Doors opened or removed flight operations.* Except as provided under paragraph (k) of this section:

(1) No person may operate a civil aircraft with the doors opened or removed unless—

(i) Each individual on board occupies an approved seat or berth with a safety belt and, if installed, shoulder harness, properly secured about the individual or an approved child restraint system properly secured to an approved seat or berth with a safety belt and, if installed,

shoulder harness in accordance with § 91.107(a)(3)(iii) or § 135.128(a)(2) of this chapter, during all phases of flight; or

(ii) Each individual on board—  
(A) Occupies an approved seat or berth with a safety belt and, if installed, shoulder harness, properly secured about the individual during movement on the surface, takeoff, and landing; and

(B) Is secured during the remainder of the flight using a supplemental restraint system in accordance with, and that meets the requirements of, this section.

(2) Prior to releasing an FAA-approved safety belt and, if installed, shoulder harness during an operation with the doors opened or removed, an individual must be properly secured by a supplemental restraint system that is connected to an FAA-approved airframe attachment point. An individual cannot release their safety belt and, if installed, shoulder harness until the pilot in command authorizes them to do so.

(c) *Supplemental restraint system design requirements.* Each supplemental restraint system must:

(1) Have a harness that secures around the torso of the individual using the supplemental restraint system;

(2) Have a lanyard that connects the harness to an FAA-approved airframe attachment point or points inside the aircraft and that ensures the torso of the individual using the supplemental restraint system remains inside the aircraft at all times;

(3) Not impede egress from the aircraft in an emergency after being released; and

(4) Have a release mechanism that—

(i) Can be quickly operated by the individual using the supplemental restraint system with minimal difficulty;

(ii) Is attached to the front or side of the harness in a location easily accessible to and visible by the individual using the supplemental restraint system;

(iii) Prevents inadvertent release; and

(iv) Can be released without the use of a knife to cut the restraint, and

without any additional tool or the assistance of any other individual.

(d) *Who may provide the supplemental restraint system.* The supplemental restraint system may be provided by the operator or by the individual using the supplemental restraint system. An operator or individual providing a supplemental restraint system must:

(1) Confirm with the pilot in command, either verbally or in writing, as determined by the pilot in command, the system’s continued serviceability and readiness for its intended purpose; and

(2) Ensure the individual who will occupy the supplemental restraint system complies with the sizing criteria for which the system is rated.

(e) *Supplemental restraint system operational requirements.* The following are supplemental restraint system operational requirements:

(1) A qualified person designated by the operator must—

(i) Connect the supplemental restraint system to an FAA-approved airframe attachment point or points rated equal to or greater than the weight of the individual using the supplemental restraint system (or the combined weight if there is more than one supplemental restraint system attached to an attachment point);

(ii) Not connect the supplemental restraint system to any airframe attachment point located in the flightdeck; and

(iii) Not connect the supplemental restraint system to any safety belt or shoulder harness attachment point(s) unless the attachment point is FAA-approved as described in paragraph (e)(1)(i) of this section.

(2) A supplemental restraint system must fit the individual using it based on the sizing criteria for which the supplemental restraint system is rated.

(3) Nothing may attach to the supplemental restraint system that is not relevant to its function as defined under § 1.1 of this chapter.



(f) *Pilot in command.* The pilot in command—

(1) Has the overall responsibility to ensure that the supplemental restraint system meets the requirements of this section and must not permit an individual to use a supplemental restraint system that does not meet the requirements of this section;

(2) Must receive confirmation from the operator or any individual providing the supplemental restraint system of the system’s continued serviceability and readiness for its intended purpose before each takeoff;

(3) May only permit an individual to use a supplemental restraint system provided by the operator or the pilot in command if that individual complies with the sizing criteria for which the supplemental restraint system is rated;

(4) Has final authority regarding whether the supplemental restraint system may be used during flight operations; and

(5) Has final authority to authorize an individual to release the FAA-approved safety belt and, if installed, shoulder harness and remain secured only by the supplemental restraint system.

(g) *Passenger briefing.* Before each takeoff, the pilot in command must ensure that each passenger who intends to use a supplemental restraint system has been briefed on:

(1) How to use, secure, and release the supplemental restraint system properly. This requirement is not necessary for an individual providing their own supplemental restraint system, but that individual must meet the passenger demonstration requirements in paragraph (h) of this section.

(2) Means of direct communication between crewmembers and passengers during normal and emergency operating procedures regarding—

(i) The use of headset and intercom systems, if installed;

(ii) How passengers will be notified of an event requiring action, including emergencies, egress procedures, and other unforeseen circumstances;

(iii) How each passenger will be notified when the passenger is permitted to release the FAA-approved safety belt and, if installed, shoulder harness, and move within the aircraft using the supplemental restraint system;

(iv) How each passenger will be notified when the passenger must return to their seat and secure the FAA-approved safety belt and, if installed, shoulder harness; and

(v) When and how to notify a crewmember of safety concerns.

(h) *Passenger demonstration.* After the briefing required by paragraph (g) of this section, prior to ground movement,

any passenger intending to use a supplemental restraint system must demonstrate to the pilot in command, a crewmember, or other qualified person designated by the operator, the following:

(1) The ability to use, secure, and release the FAA-approved safety belt and, if installed, shoulder harness, and

(2) The ability to accomplish all actions required for quick release of the supplemental restraint system without assistance and with minimal difficulty.

(i) *Individuals not permitted to use supplemental restraint systems.* The following individuals are not permitted to use a supplemental restraint system, as defined in § 1.1 of this chapter:

(1) Any passenger who cannot demonstrate—

(i) That they are able to use, secure, and release the FAA-approved safety belt and, if installed, shoulder harness; or

(ii) That they are able to release quickly the supplemental restraint system with no assistance and with minimal difficulty.

(2) Any individual who is less than 15 years of age.

(3) Any individual seated in the flightdeck.

(4) Any passenger who occupies or uses an approved child restraint system.

(j) *Lap-held child.* Notwithstanding any other requirement of this chapter, a child who has not reached their second birthday may not be held by an adult during civil aircraft operations when:

(1) The adult uses a supplemental restraint system; or

(2) The aircraft doors are opened or removed.

(k) *Excluded operations.* Unless otherwise stated:

(1) This section does not apply to operations conducted under part 105 or 133 of this chapter and does not apply to the persons described in § 91.107(a)(3)(ii) of this chapter.

(2) Operators subject to the requirements of paragraph (b)(1) of this section may operate an aircraft with doors opened or removed, notwithstanding any flight crewmembers on board who are subject to the requirements of §§ 91.105 or 135.171 of this chapter and who need to unfasten their shoulder harnesses in accordance with those sections.

(3) Paragraph (b)(2) of this section does not apply to any flight crewmembers subject to §§ 91.105 or 135.171 of this chapter to the extent that the flight crewmembers need to unfasten their shoulder harnesses in accordance with those sections.

**PART 135—OPERATING REQUIREMENTS: COMMUTER AND ON DEMAND OPERATIONS AND RULES GOVERNING PERSONS ON BOARD SUCH AIRCRAFT**

■ 8. The authority citation for part 135 is revised to read as follows:

**Authority:** 49 U.S.C. 106(f), 40113, 41706, 44701–44702, 44705, 44709, 44711–44713, 44715–44717, 44722, 44730, 45101–45105; Pub. L. 112–95, 126 Stat. 58 (49 U.S.C. 44730).

■ 9. Amend § 135.117 by adding paragraph (g) to read as follows:

**§ 135.117 Briefing of passengers before flight.**

\* \* \* \* \*

(g) If any passengers on board a flight conducted under this part are secured with a supplemental restraint system, the pilot in command of that flight must ensure those passengers are briefed in accordance with § 91.108(g) of this chapter.

■ 10. Amend § 135.128 by revising paragraph (a)(1) to read as follows:

**§ 135.128 Use of safety belts and child restraint systems.**

(a) \* \* \*

(1) Be held by an adult, except as outlined in § 91.108(j) of this chapter, who is occupying an approved seat or berth, provided the child has not reached his or her second birthday and the child does not occupy or use any restraining device; or

\* \* \* \* \*

**PART 136—COMMERCIAL AIR TOURS AND NATIONAL PARKS AIR TOUR MANAGEMENT**

■ 11. The authority citation for part 136 is revised to read as follows:

**Authority:** 49 U.S.C. 106(f), 40113, 40119, 44101, 44701–44702, 44705, 44709–44711, 44713, 44716–44717, 44722, 44901, 44903–44904, 44912, 46105.

■ 12. Amend § 136.7 by adding paragraph (c) to read as follows:

**§ 136.7 Passenger briefings.**

\* \* \* \* \*

(c) If any passengers on board a flight conducted under this part are secured with a supplemental restraint system, the pilot in command of that flight must ensure those passengers are briefed in accordance with § 91.108(g) of this chapter.

Issued under authority provided by 49 U.S.C. 106(f), 44701(a), and 44703 in Washington, DC.

Michael Gordon Whitaker,  
Administrator.

[FR Doc. 2024-18545 Filed 8-21-24; 8:45 am]

BILLING CODE 4910-13-P

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 29

[Docket No. FAA-2024-0895; Special Conditions No. 29-057-SC]

#### Special Conditions: Bell Textron Inc. (Bell) Model 525 Helicopter; Static Longitudinal Stability Compliance

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final special conditions.

**SUMMARY:** These special conditions are issued for the Bell Model 525 helicopter. This helicopter will have a novel or unusual design feature when compared to the state of technology envisioned in the airworthiness standards for transport category helicopters. This design feature is a four-axis full authority digital fly-by-wire (FBW) flight control system (FCS) that provides for aircraft control through pilot input or coupled auto pilot modes. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

**DATES:** Effective August 22, 2024.

**FOR FURTHER INFORMATION CONTACT:** Gregory Thumann, Performance and Environment Unit, AIR-621A, Technical Policy Branch, Policy and Standards Division, Aircraft Certification Service, Federal Aviation Administration, 1801 S Airport Road, Wichita, KS 67209; telephone and fax (405) 666-1052; email [Gregory.G.Thumann@faa.gov](mailto:Gregory.G.Thumann@faa.gov).

#### SUPPLEMENTARY INFORMATION:

##### Background

On December 15, 2011, Bell applied for a type certificate for a new 14 CFR part 29 transport category helicopter designated as the Model 525. Bell applied for multiple extensions to its certification application, with the most recent occurring on September 21, 2023. The helicopter is a medium twin-engine

rotorcraft. The maximum takeoff weight is 20,500 pounds, with a maximum capacity of 16 passengers and a crew of 2.

##### Type Certification Basis

Under the provisions of 14 CFR 21.17, Bell must show that the Model 525 meets the applicable provisions of part 29, as amended by Amendments 29-1 through 29-55 thereto. The Bell Model 525 certification basis date is December 31, 2019.

If the Administrator finds that the applicable airworthiness regulations (*i.e.*, 14 CFR part 29) do not contain adequate or appropriate safety standards for the Bell Model 525 because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same novel or unusual design feature, these special conditions would also apply to the other model under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the Bell Model 525 helicopter must comply with the exhaust-emission requirements of 14 CFR part 34, and the noise-certification requirements of 14 CFR part 36.

The FAA issues special conditions, as defined in 14 CFR 11.19, in accordance with § 11.38, and they become part of the type-certification basis under § 21.17(a)(2).

##### Novel or Unusual Design Feature

The Bell Model 525 helicopter will incorporate the following novel or unusual design feature: a four-axis full authority digital FBW FCS that provides aircraft control through pilot input or coupled auto pilot modes in addition to degraded modes.

##### Discussion

For a conventional rotorcraft having mechanical linkages from the primary cockpit flight controls to the rotor, static longitudinal stability means that a pull force on the controller (*i.e.*, cyclic) will result in a reduction in speed relative to the trim speed, and a push force will result in a higher speed relative to the trim speed. Longitudinal stability is required by the regulations for the following reasons:

- Airspeed change cues are provided to the pilot through increased and decreased forces on the controller.
- Short periods of unattended control of the rotorcraft do not result in

significant changes in attitude, airspeed, or load factor.

- A predictable pitch response is provided to the pilot.
- An acceptable level of pilot workload, to attain and maintain trim speed and altitude, is provided to the pilot.
- Longitudinal stability provides gust stability.

The pitch control movement of the controller (*i.e.*, cyclic) for the FBW FCS is an attitude command, which results in a rotor movement to attain the commanded pitch attitude. The flight path commanded by the initial cyclic input will remain stick-free until the pilot gives another command. This control function is applied during normal control laws within the approved flight envelope. The relevant regulations in part 29, which are §§ 29.173(b), 29.175 for visual flight rules (VFR) operations, and Appendix B to part 29 sections IV and VII—Airworthiness Criteria for Helicopter Instrument Flight, are inadequate for the Bell 525 because the longitudinal flight control laws for the Bell 525 provide neutral and negative static stability, rather than positive static stability, within the normal operational envelope. As detailed in § 29.173(b) and considered in Advisory Circular (AC) 29.173A, “Static Longitudinal Stability” (AC 29.173A), which is contained in AC 29-2C, “Certification of Transport Category Rotorcraft” (AC 29-2C), and the positive control force stability requirements in Appendix B to part 29, sections IV and VII, the slope of the control position (*i.e.*, cyclic) versus airspeed curve must be positive (*i.e.*, provide positive static stability) throughout the full range of altitude for which certification is requested and with the throttle and collective pitch held constant.

The special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

In lieu of meeting the requirements of §§ 29.173(b), 29.175 for VFR operations and the airworthiness criteria for helicopter instrument flight requirements of Appendix B to part 29, sections IV and VII, the special conditions require the rotorcraft to be shown to have suitable longitudinal stability and acceptable rotorcraft handling qualities. The suitable static longitudinal stability must be primarily based on a positive control movement, which is described as “control sense of motion” in AC 29.173A contained in AC 29-2C. Additionally, the static