ASA's 2025 FAR/AIM Update

Changes to the Federal Aviation Regulations occur via the *Federal Register*, which is published daily. The *Aeronautical Information Manual* is updated every 180 days, and Advisory Circulars are revised as the FAA deems necessary. ASA tracks all relevant changes to keep you current and informed: the ASA FAR/AIM Series is published annually, and all Updates are available at **asa2fly.com/farupdate** and through a free email subscription service that notifies you of changes affecting the information printed in your books.

ASA's 2025 *FAR/AIM* book is current through May 10, 2024. With this Update, information is current through **October 16, 2024**.

The *AIM* changes (*AIM Change 3* effective September 5, 2024, to *AIM Basic* effective April 20, 2023) begin on page 16.

TITLE 14: AERONAUTICS AND SPACE

PART 1
DEFINITIONS AND ABBREVIATIONS

➧ ***Change Date:*** *August 22, 2024*
➧ ***Effective Date:*** *October 21, 2024*
➧ ***Source:*** *Amdt. 1–76, 89 FR 67848*

The authority citation for Part 1 is revised to read as follows:

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

➧ ***Change Date:*** *October 2, 2024*
➧ ***Effective Date:*** *December 2, 2024*
➧ ***Source:*** *Amdt. 1–77, 89 FR 80338*

Amend §1.1 by revising paragraph (1)(ii) of the definition of "Public aircraft" to read as follows:

§1.1 General definitions.

* * * * *

Public aircraft * * *

(1) * * *

(ii) For the sole purpose of determining public aircraft status, *governmental function* means an activity undertaken by a government, such as national defense, intelligence missions, firefighting, search and rescue, law enforcement (including transport of prisoners, detainees, and illegal aliens), aeronautical research, biological or geological resource management (including data collection on civil aviation systems undergoing research, development, test, or evaluation at a test range (as such term is defined in 49 U.S.C. 44801)), infrastructure inspections, or any other activity undertaken by a governmental entity that the Administrator determines is inherently governmental.

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➧ ***Change Date:*** *August 22, 2024*
➧ ***Effective Date:*** *October 21, 2024*
➧ ***Source:*** *Amdt. 1–76, 89 FR 67848*

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.

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PART 61
CERTIFICATION: PILOTS, FLIGHT INSTRUCTORS, AND GROUND INSTRUCTORS

Editorial Correction: *In Part 61 on page 84 of ASA's 2025 FAR/AIM print book, change the section number for "Use of a flight simulator and flight training device" so the full section header reads as follows:*

§61.64 Use of a flight simulator and flight training device.

➧ ***Change Date:*** *October 1, 2024*
➧ ***Effective Date:*** *December 1, 2024*
➧ ***Source:*** *Amdt. 61–155, 89 FR 80049*

The authority citation for part 61 is revised to read as follows:

Authority: 49 U.S.C. 106(f), 40113, 44701–44703, 44707, 44709–44711, 44729, 44903, 45102–45103, 45301–45302; Sec. 2307 Pub. L. 114–190, 130 Stat. 615 (49 U.S.C. 44703 note); Sec. 318, Pub. L. 115–254, 132 Stat. 3186 (49 U.S.C. 44703 note); and Sec. 820, Pub. L. 118–63, 138 Stat. 1330 (49 U.S.C. 44939 note)

➧ ***Change Date:*** *July 23, 2024*
➧ ***Effective Date:*** *August 22, 2024*
➧ ***Source:*** *Amdt. 61–154, 89 FR 59608*

Revise Special Federal Aviation Regulation No. 73 to read as follows:

SFAR No. 73

ROBINSON HELICOPTER COMPANY, ROBINSON R-22/R-44
SPECIAL TRAINING AND EXPERIENCE REQUIREMENTS

Sections

1. ***Applicability.*** Under the procedures prescribed in this section, this Special Federal Aviation Regulation (SFAR) applies to all persons who seek to manipulate the controls, act as pilot in command, provide ground training or flight training, or conduct a flight review in a Robinson model R-22 or R-44 helicopter. The requirements stated in this SFAR are in addition to the current requirements of this part.

2. ***Required training, aeronautical experience, endorsements, and flight review.***

(a) *Ground Training.*

(1) Except as provided in paragraph 2(a)(2) of this SFAR, no person may manipulate the controls of a Robinson model R-22 or R-44 helicopter-for the purpose of flight unless the ground training specified in paragraph 2(a)(3) of this SFAR is completed and the person's logbook has been endorsed by a flight instructor authorized under paragraph 2(b)(5)(iv) of this SFAR.

(2) A person who holds a rotorcraft category and helicopter class rating on that person's pilot certificate and meets the experience requirements of paragraph 2(b)(1) or paragraph 2(b)(2) of this SFAR may not manipulate the controls of a Robinson model R-22 or R-44 helicopter for the purpose of flight unless the ground training specified in paragraph 2(a)(3) of this SFAR is completed and the person's logbook has been endorsed by a flight instructor authorized under paragraph 2(b)(5)(iv) of this SFAR.

(3) Ground training must be conducted by a flight instructor who has been authorized under paragraph 2(b)(5)(iv) of this SFAR and consists of the following general subject areas:

(i) Energy management;

(ii) Mast bumping;

(iii) Low rotor revolutions per minute (RPM) and rotor stall;

(iv) Low G conditions, effects, and proper recovery procedures; and

(v) Rotor RPM decay.

(4) The general subject areas identified in paragraph 2(a)(3) of this SFAR are intended to cover both Robinson model R-22 and R-44 helicopters.

(5) A person who can show satisfactory completion of the manufacturer's safety course may obtain an endorsement from an FAA aviation safety inspector in lieu of completing the ground training required by paragraphs 2(a)(1) and (2) of this SFAR.

(b) *Aeronautical Experience.*

(1) No person may act as pilot in command of a Robinson model R-22 unless that person:

(i) Has logged at least 200 flight hours in helicopters, at least 50 flight hours of which were in the Robinson model R-22 helicopter; or

(ii) Has logged at least 10 hours of flight training in the Robinson model R-22 helicopter and has received an endorsement from a flight instructor authorized under paragraph 2(b)(5)(iv) of this SFAR that the individual has been given the training required by this paragraph 2(b)(1)(ii) and is proficient to act as pilot in command of an R-22. The flight training must include at least the following abnormal and emergency procedures:

(A) Training in autorotation procedures and energy management, including utilizing a combination of flight control inputs and maneuvering to prevent overshooting or undershooting the selected landing area from an entry altitude that permits safe recovery;

(B) Autorotations at an entry altitude that permits safe maneuvering and recovery utilizing maximum glide configuration;

(C) Engine rotor RPM control without the use of the governor; and

(D) Low rotor RPM recognition and recovery.

(iii) Pilots who do not meet the experience requirement of paragraph 2(b)(1)(i) of this SFAR may not act as pilot in command of a Robinson model R-22 helicopter beginning 12 calendar months after the date of the endorsement identified in paragraph 2(b)(1)(ii) of this SFAR until those pilots have:

(A) Completed a flight review of the ground training subject areas identified by paragraph 2(a)(3) of this SFAR and the flight training identified in paragraph 2(b)(1)(ii) of this SFAR in an R-22; and

(B) Obtained an endorsement for that flight review from a flight instructor authorized under paragraph 2(b)(5)(iv) of this SFAR.

(2) No person may act as pilot in command of a Robinson model R-44 helicopter unless that person—

(i) Has logged at least 200 flight hours in helicopters, at least 50 flight hours of which were in the Robinson model R-44 helicopter. The pilot in command may credit up to 25 flight hours in the Robinson model R-22 helicopter toward the 50-hour requirement in the Robinson model R-44 helicopter; or

(ii) Has logged at least 10 hours of flight training in a Robinson helicopter, at least 5 hours of which must have been accomplished in the Robinson model R-44 helicopter, and has received an endorsement from a flight instructor authorized under paragraph 2(b)(5)(iv) of this SFAR that the individual has been given the training required by this paragraph 2(b)(2)(ii) and is proficient to act as pilot in command of an R-44. The flight training must include at least the following abnormal and emergency procedures—

(A) Training in autorotation procedures and energy management, including utilizing a combination of flight control inputs and maneuvering to prevent overshooting or undershooting the selected landing area from an entry altitude that permits safe recovery;

(B) Autorotations at an entry altitude that permits safe maneuvering and recovery utilizing minimum rate of descent configuration and maximum glide configuration;

(C) Engine rotor RPM control without the use of the governor; and

(D) Low rotor RPM recognition and recovery.

(iii) Pilots who do not meet the experience requirement of paragraph 2(b)(2)(i) of this SFAR may not act as pilot in command of a Robinson model R-44 helicopter beginning 12 calendar months after the date of the endorsement identified in paragraph 2(b)(2)(ii) of this SFAR until those pilots have:

(A) Completed a flight review of the ground training subject areas identified by paragraph 2(a)(3) and the flight training identified in paragraph 2(b)(2)(ii) of this SFAR in an R-44; and

(B) Obtained an endorsement for that flight review from a flight instructor authorized under paragraph 2(b)(5)(iv) of this SFAR.

(3) A person who does not hold a rotorcraft category and helicopter class rating must have logged at least 20 hours of flight training in a Robinson model R-22 helicopter from a flight instructor authorized under paragraph 2(b)(5)(iv) of this SFAR prior to operating it in solo flight. In addition, the person must obtain an endorsement from a flight instructor authorized under paragraph 2(b)(5)(iv) of this SFAR that training has been given in those maneuvers and procedures, and the instructor has found the applicant proficient to solo a Robinson model R-22 helicopter. This endorsement is valid for a period of 90 days. The flight training must include at least the following abnormal and emergency procedures:

(i) Training in autorotation procedures and energy management, including utilizing a combination of flight control inputs and maneuvering to prevent overshooting or undershooting the selected landing area from an entry altitude that permits safe recovery;

(ii) Autorotations at an entry altitude that permits safe maneuvering and recovery utilizing maximum glide configuration;

(iii) Engine rotor RPM control without the use of the governor; and

(iv) Low rotor RPM recognition and recovery.

(4) A person who does not hold a rotorcraft category and helicopter class rating must have logged at least 20 hours of flight training in a Robinson model R-44 helicopter from a flight instructor authorized under paragraph 2(b)(5)(iv) of this SFAR prior to operating it in solo flight. In addition, the person must obtain an endorsement from a flight instructor authorized under paragraph 2(b)(5)(iv) of this SFAR that training has been given in those maneuvers and procedures and the instructor has found the applicant proficient to solo a Robinson model R-44 helicopter. This endorsement is valid for a period of 90 days. The flight training must include at least the following abnormal and emergency procedures:

(i) Training in autorotation procedures and energy management, including utilizing a combination of flight control inputs and maneuvering to prevent overshooting or undershooting the selected landing area from an entry altitude that permits safe recovery;

(ii) Autorotations at an entry altitude that permits safe maneuvering and recovery utilizing minimum rate of descent configuration and maximum glide configuration;

(iii) Engine rotor RPM control without the use of the governor, and

(iv) Low rotor RPM recognition and recovery.

(5) No flight instructor may provide training or conduct a flight review in a Robinson R-22 or R-44 unless that instructor—

(i) Completes the ground training in paragraph 2(a) of this SFAR.

(ii) For the Robinson model R-22 helicopter, has logged at least 200 flight hours in helicopters, at least 50 flight hours of which were in the Robinson model R-22 helicopter, or for the Robinson model R-44 helicopter, logged at least 200 flight hours in helicopters, 50 flight hours of which were in Robinson helicopters. Up to 25 flight hours of Robinson model R-22 helicopter flight time may be credited toward the 50-hour requirement.

(iii) Has completed flight training in a Robinson model R-22 or R-44 helicopter, or both, on the following abnormal and emergency procedures—

(A) Training in autorotation procedures and energy management, including utilizing a combination of flight control inputs and maneuvering to prevent overshooting or undershooting the selected landing area from an entry altitude that permits safe recovery;

(B) For the Robinson model R-22 helicopter, autorotations at an entry altitude that permits safe maneuvering and recovery utilizing maximum glide configuration. For the Robinson model R-44 helicopter, autorotations at an entry altitude that permits safe maneuvering and recovery utilizing maximum glide configuration and minimum rate of descent configuration;

(C) Engine rotor RPM control without the use of the governor; and

(D) Low rotor RPM recognition and recovery.

(iv) Has been authorized by endorsement from an FAA aviation safety inspector or authorized designated examiner that the instructor has completed the appropriate training, meets the experience requirements, and has satisfactorily demonstrated an ability to provide training on the general subject areas of paragraph 2(a)(3) of this SFAR, and the flight training identified in paragraph 2(b)(5)(iii) of this SFAR.

(c) *Flight Review.*

(1) No flight review completed to satisfy §61.56 by an individual after becoming eligible to function as pilot in command in a Robinson model R-22 helicopter shall be valid for the operation of an R-22 unless that flight review was taken in an R-22.

(2) No flight review completed to satisfy §61.56 by an individual after becoming eligible to function as pilot in command in a Robinson model R-44 helicopter shall be valid for the operation of an R-44 unless that flight review was taken in the R-44.

(3) The flight review will include a review of the ground training subject areas of paragraph 2(a)(3) of this SFAR and flight training in abnormal and emergency procedures in the Robinson model R-22 or R-44 helicopter, as appropriate, identified in paragraph 2(b) of this SFAR.

(d) *Currency Requirements.* No person may act as pilot in command of a Robinson model R-22 or R-44 helicopter carrying passengers unless the pilot in command has met the recency of flight experience requirements of §61.57 in an R-22 or R-44, as appropriate.

3. *Expiration date.* This SFAR expires August 22, 2029, unless sooner revised or rescinded.

➨ ***Change Date:*** *October 1, 2024*
➨ ***Effective Date:*** *December 1, 2024*
➨ ***Source:*** *Amdt. 61–155, 89 FR 80049*

Remove Special Federal Aviation Regulation No. 100–2 from Part 61.

SPECIAL FEDERAL AVIATION REGULATION NO. 100–2 [REMOVED]

➨ ***Change Date:*** *October 2, 2024*
➨ ***Effective Date:*** *December 2, 2024*
➨ ***Source:*** *Amdt. 61–156, 89 FR 80339*

Amend §61.1 in paragraph (b) by adding the definition of "Passenger" in alphabetical order to read as follows:

§61.1 Applicability and definitions.

* * * * *

(b) * * *

Passenger means any person on board an aircraft other than a crewmember, FAA personnel, manufacturer personnel required for type certification, or a person receiving or providing flight training, checking, or testing as authorized by this part.

* * * * *

➧ ***Change Date:*** *October 1, 2024*
➧ ***Effective Date:*** *December 1, 2024*
➧ ***Source:*** *Amdt. 61–155, 89 FR 80049*

Amend §61.2 by revising paragraphs (b)(1) and (2) to read as follows:

61.2 Exercise of Privilege.

* * * * *

(b) * * *

(1) Exercise privileges of an airman certificate, rating, endorsement, or authorization issued under this part unless that person meets the appropriate airman recent experience and medical requirements of this part, specific to the operation or activity.

(2) Exercise privileges of a foreign pilot license within the United States to conduct an operation described in §61.3(b), unless that person meets the appropriate airman recent experience and medical requirements of the country that issued the license, specific to the operation.

Amend §61.19 by revising paragraphs (a)(2), (c)(1), (d) and (e) to read as follows:

§61.19 Duration of pilot and instructor certificates and privileges.

(a) * * *

(2) Except for a certificate issued with an expiration date, a certificate issued under this part is valid unless it is surrendered, suspended, or revoked.

* * * * *

(c) * * *

(1) A pilot certificate (including a student pilot certificate issued after April 1, 2016) issued under this part is issued without an expiration date.

(d) ***Flight instructor certificate.***

(1) A flight instructor certificate issued under this part on or after December 1, 2024, is issued without an expiration date.

(2) A flight instructor certificate issued before December 1, 2024, expires 24 calendar months from the month in which it was issued, renewed, or reinstated, as appropriate.

(e) ***Ground instructor certificate.*** A ground instructor certificate is issued without an expiration date.

* * * * *

Amend §61.39 by:

a. Revising paragraphs (a) introductory text, (b) introductory text, (b)(3), (c) introductory text, and (c)(2);
b. Redesignating paragraphs (e) through (g) as paragraphs (f) through (h); and
c. Adding new paragraph (e).

The revisions and addition read as follows:

§61.39 Prerequisites for practical tests.

(a) Except as provided in paragraphs (b), (c), (e), and (f) of this section, to be eligible for a practical test for a certificate or rating issued under this part, an applicant must:

* * * * *

(b) Except as provided in paragraph (e) of this section, an applicant for an airline transport pilot certificate with an airplane category multiengine class rating or an airline transport pilot certificate obtained concurrently with a multiengine airplane type rating may take the practical test with an expired knowledge test only if the applicant passed the knowledge test after July 31, 2014, and is employed:

* * * * *

(3) By the U.S. Armed Forces as a flightcrew member in U.S. military air transport operations at the time of the practical test and has satisfactorily completed the pilot in command aircraft qualification training program that is appropriate to the pilot certificate and rating sought.

(c) Except as provided in paragraph (e) of this section, an applicant for an airline transport pilot certificate with a rating other than those ratings set forth in paragraph (b) of this section may take the practical test for that certificate or rating with an expired knowledge test report, provided that the applicant is employed:

* * * * *

(2) By the U.S. Armed Forces as a flightcrew member in U.S. military air transport operations at the time of the practical test and has satisfactorily completed the pilot in command aircraft qualification training program that is appropriate to the pilot certificate and rating sought.

* * * * *

(e) An applicant for an airman certificate or rating issued under this part 61 may take a practical test with an expired knowledge test if the applicant meets the requirements specified in §61.40.

* * * * *

Add §61.40 to read as follows:

§61.40 Relief for U.S. Military and civilian personnel who are assigned outside the United States in support of U.S. Armed Forces operations.

(a) ***Relief.*** A person who satisfies the requirements of paragraph (b) of this section may use the following documents to demonstrate eligibility to renew a flight instructor certificate, establish recent flight instructor experience, take a practical test, or renew an inspection authorization, as appropriate:

(1) For flight instructor certificates issued before December 1, 2024, an expired flight instructor certificate to show eligibility for renewal of a flight instructor certificate under §61.197;

(2) Except as provided in paragraph (a)(3) of this section, for flight instructor certificates issued after December 1, 2024, a record demonstrating the last recent experience event accomplished under §61.197 to show eligibility to reestablish recent experience under §61.197;

(3) For persons who were issued a flight instructor certificate after December 1, 2024, and who served in a U.S. military or civilian capacity outside the United States in support of a U.S. Armed Forces operation for some period of time during the 24 calendar months following the issuance of the person's flight instructor certificate, a flight instructor certificate demonstrating the date of issuance to show eligibility to establish recent experience under §61.197;

(4) An expired written test report to show eligibility under this part to take a practical test;

(5) An expired written test report to show eligibility to take a practical test required under part 63 of this chapter; and

(6) An expired written test report to show eligibility to take a practical test required under part 65 of this chapter or an expired inspection authorization to show eligibility for renewal under §65.93.

(b) ***Eligibility.*** A person is eligible for the relief specified in paragraph (a) of this section if that person meets the following requirements:

(1) The person must have served in a U.S. military or civilian capacity outside the United States in support of a U.S. Armed Forces operation during some period of time beginning on or after September 11, 2001;

(2) One of the following occurred while the person served in an operation as set forth in paragraph (b)(1) of this section or within 6 calendar months after returning to the United States—

(i) The person's flight instructor certificate issued before December 1, 2024, airman written test report, or inspection authorization expired; or

(ii) For flight instructor certificates issued after December 1, 2024, the person has not met the flight instructor recent experience requirements within the preceding 24 calendar months in accordance with §61.197; and

(3) The person complies with §61.197 or §65.93 of this chapter, as appropriate, or completes the appropriate practical test within 6 calendar months after returning to the United States.

(c) ***Required documents.*** To exercise the relief specified in paragraph (a) of this section, a person must complete and sign an application appropriate to the relief sought and send the application to the appropriate Flight Standards office. The person must include with the application one of the following documents, which must show the date of assignment outside the United States and the date of return to the United States:

(1) An official U.S. Government notification of personnel action, or equivalent document, showing the person was a civilian on official duty for the U.S. Government outside the United States and was assigned to a U.S. Armed Forces operation some time on or after September 11, 2001;

(2) Military orders validating the person was assigned to duty outside the United States and was assigned to a U.S. Armed Forces operation some time on or after September 11, 2001; or

(3) A letter from the person's military commander or civilian supervisor providing the dates during which the person served outside the United States and was assigned to a U.S. Armed Forces operation some time on or after September 11, 2001.

Amend §61.51 by revising paragraph (h)(2)(ii) to read as follows:

§61.51 Pilot logbooks.

* * * * *

(h) * * *

(2) * * *

(ii) Include a description of the training given, the length of the training lesson, and the authorized instructor's signature, certificate number, and certificate expiration date or recent experience end date, consistent with the requirements of §61.197.

* * * * *

➧ ***Change Date:*** *October 1, 2024*
➧ ***Effective Date:*** *March 1, 2027*
➧ ***Source:*** *Amdt. 61–155, 89 FR 80050*

Effective March 1, 2027, amend §61.51 by revising paragraph (h)(2)(ii) to read as follows:

§61.51 Pilot logbooks.

* * * * *

(h) * * *

(2) * * *

(ii) Include a description of the training given, the length of the training lesson, and the authorized instructor's signature, certificate number, and recent experience end date.

* * * * *

➧ ***Change Date:*** *October 2, 2024*
➧ ***Effective Date:*** *December 2, 2024*
➧ ***Source:*** *Amdt. 61–156, 89 FR 80339*

Amend §61.51 by:

a. Revising paragraphs (f)(2) and (3);

b. Adding paragraph (f)(4); and

c. Revising paragraph (j)(4).

The revisions read as follows:

§61.51 Pilot logbooks.

* * * * *

(f) * * *

(2) Holds the appropriate category, class, and instrument rating (if a class or instrument rating is required for the flight) for the aircraft being flown, and more than one pilot is required under the type certification of the aircraft or the regulations under which the flight is being conducted;

(3) Serves as second-in-command in operations conducted in accordance with §135.99(c) of this chapter when a second pilot is not required under the type certification of the aircraft or the regulations under which the flight is being conducted, provided the requirements in §61.159(c) are satisfied; or

(4) Is designated by a government entity as second-in-command when operating in accordance with paragraph (j)(4) of this section, provided the aircraft used is a large aircraft or turbo-jet powered airplane or holds or originally held a type certificate that requires a second pilot provided that:

(i) Second-in-command time logged under this paragraph (f)(4) may not be used to meet the aeronautical experience requirements for the private or commercial pilot certificates or an instrument rating; and

(ii) An applicant for an airline transport pilot certificate who logs second in command time under this paragraph (f)(4) in an aircraft that is not type certificated for two pilots issued an airline transport pilot certificate with the limitation "Holder does not meet the pilot in command aeronautical experience requirements of ICAO," as prescribed under Article 39 of the Convention on International Civil Aviation if the applicant does not meet the ICAO requirements contained in Annex 1 "Personnel Licensing" to the Convention on International Civil Aviation. An applicant is entitled to an airline transport pilot certificate without the ICAO limitation specified under this paragraph (f)(4)(ii) when the applicant presents satisfactory evidence of having met the ICAO requirements and otherwise meets the aeronautical experience requirements of §61.159 or §61.161, as applicable.

* * * * *

(j) * * *

(4) An aircraft used to conduct a public aircraft operation under 49 U.S.C. 40102(a)(41) and 40125.

* * * * *

➧ ***Change Date:*** *October 1, 2024*
➧ ***Effective Date:*** *December 1, 2024*
➧ ***Source:*** *Amdt. 61–155, 89 FR 80050*

Amend §61.56 by revising paragraphs (d)(2), (e), and (f) to read as follows:

§61.56 Flight review.

* * * * *

(d) * * *

(2) A practical test conducted by an examiner for one of the following:

(i) The issuance of a flight instructor certificate,

(ii) An additional rating on a flight instructor certificate,

(iii) To meet the recent experience requirements for a flight instructor certificate in accordance with §61.197(b)(1); or

(iv) The reinstatement of flight instructor privileges in accordance with §61.199(b)(2).

(e) A person who has, within the period specified in paragraph (c) of this section, satisfactorily accomplished one or more phases of an FAA-sponsored pilot proficiency program need not accomplish the flight review required by this section.

(f) A person who holds a flight instructor certificate need not accomplish the one hour of ground training specified in paragraph (a) of this section if that person has, within the period specified in paragraph (c) of this section, met one of the following requirements—

(1) Satisfactorily completed the recent experience requirements for a flight instructor certificate under §61.197; or

(2) Reinstated the person's flight instructor privileges by satisfactorily completing an approved flight instructor refresher course in accordance with §61.199(a)(1).

* * * * *

➧ ***Change Date:*** *September 10, 2024*
➧ ***Effective Date:*** *September 10, 2024*
➧ ***Source:*** *Amdt. 61–153A, 89 FR 73272*

Amend §61.57 by removing paragraphs (d)(1)(i) through (vi).

➧ ***Change Date:*** *October 2, 2024*
➧ ***Effective Date:*** *December 2, 2024*
➧ ***Source:*** *Amdt. 61–156, 89 FR 80339*

Amend §61.57 by revising paragraphs (a)(1) introductory text and (b)(1) introductory text and adding paragraphs (e)(5) and (6) to read as follows:

§61.57 Recent flight experience: Pilot in command.

(a) * * *

(1) Except as provided in paragraph (e) of this section, no person may act as a pilot in command of an aircraft carrying persons or of an aircraft certificated for more than one pilot flight crewmember unless that person has made at least three takeoffs and three landings within the preceding 90 days, and—

* * * * *

(b) * * *

(1) Except as provided in paragraph (e) of this section, no person may act as pilot in command of an aircraft carrying persons during the period beginning 1 hour after sunset and ending 1 hour before sunrise, unless within the preceding 90 days that person has made at least three takeoffs and three landings to a full stop during the period beginning 1 hour after sunset and ending 1 hour before sunrise, and—

* * * * *

(e) * * *

(5) Paragraphs (a) and (b) of this section do not apply to a person receiving flight training from an authorized instructor, provided:

(i) The flight training is limited to the purpose of meeting the requirements of paragraphs (a) and (b) of this section;

(ii) Notwithstanding the provisions of paragraphs (a) and (b) of this section, the person receiving flight training meets all other requirements to act as pilot in command of the aircraft; and

(iii) The authorized instructor and the person receiving flight training are the sole occupants of the aircraft.

(6) Paragraphs (a) and (b) of this section do not apply to the examiner or the applicant during a practical test required by this part.

* * * * *

Amend §61.159 by revising paragraph (e) to read as follows:

§61.159 Aeronautical experience: Airplane category rating.

* * * * *

(e) An applicant who credits time under paragraphs (b) through (d) of this section and §61.51(f)(4) is issued an airline transport pilot certificate with the limitation "Holder does not meet the pilot in command aeronautical experience requirements of ICAO," as prescribed under Article 39 of the Convention on International Civil Aviation.

* * * * *

Amend §61.161 by revising paragraph (d) to read as follows:

§61.161 Aeronautical experience: Rotorcraft category and helicopter class rating.

* * * * *

(d) An applicant who credits time under paragraph (c) of this section and §61.51(f)(4) is issued an airline transport pilot certificate with the limitation "Holder does not meet the pilot in command aeronautical experience requirements of ICAO," as prescribed under Article 39 of the Convention on International Civil Aviation.

* * * * *

Amend §61.193 by revising paragraphs (a) introductory text and (a)(7) and adding paragraph (c) to read as follows:

§61.193 Flight instructor privileges.

(a) A person who holds a flight instructor certificate is authorized within the limitations of that person's flight instructor certificate and ratings to conduct ground training, flight training, certain checking events, and to issue endorsements related to:

* * * * *

(7) A flight review, operating privilege, or recency of experience requirement of this part, or training to maintain or improve the skills of a certificated pilot;

* * * * *

(c) The privileges authorized in this section do not permit a person who holds a flight instructor certificate to conduct operations that would otherwise require an air carrier or operating certificate or specific authorization from the Administrator.

➧ ***Change Date:*** *October 1, 2024*
➧ ***Effective Date:*** *December 1, 2024*
➧ ***Source:*** *Amdt. 61–155, 89 FR 80051*

Amend §61.195 by revising paragraph (h) to read as follows:

§61.195 Flight instructor limitations and qualifications.

* * * * *

(h) ***Qualifications to provide ground or flight training to initial flight instructor applicants***—

(1) *Ground training.* The ground training provided to an initial applicant for a flight instructor certificate must be given by an authorized instructor who—

(i) Holds a ground or flight instructor certificate with the appropriate rating, has held that certificate for at least 24 calendar months, and has given at least 40 hours of ground training; or

(ii) Holds a ground or flight instructor certificate with the appropriate rating, and has given at least 100 hours of ground training in an FAA-approved course.

(2) *Flight training.* A flight instructor who provides flight training to an initial applicant for a flight instructor certificate must meet the eligibility requirements prescribed in §61.183; hold the appropriate flight instructor certificate and rating; meet the requirements of the part under which the flight training is provided; and meet one of the following requirements—

(i) Have held a flight instructor certificate for at least 24 calendar months; and

(A) For training in preparation for an airplane, rotorcraft, or powered-lift rating, have given at least 200 hours of flight training as a flight instructor; or

(B) For training in preparation for a glider rating, have given at least 80 hours of flight training as a flight instructor;

(ii) Have trained and endorsed, during the preceding 24 calendar months, at least five applicants for a practical test for a pilot certificate or rating, and at least 80 percent of all applicants endorsed in that period passed that test on their first attempt; or

(iii) After completing the flight training requirements in paragraph (h)(2)(i)(A) or (B) of this section, as appropriate, have graduated from an FAA-approved flight instructor enhanced qualification training program that satisfies the requirements specified in paragraph (h)(3) of this section.

(3) *Flight instructor enhanced qualification training program.* A flight instructor enhanced qualification training program must be approved and conducted under part 141 or 142 of this chapter, and meet the following requirements—

(i) The ground training must include at least 25 hours of instruction that includes the following subjects:

(A) Flight instructor responsibilities, functions, lesson planning, and risk management, including how to instruct an initial flight instructor applicant on these subjects.

(B) Teaching methods, procedures, and techniques applicable to instructing an initial flight instructor applicant.

(C) Methods of proper evaluation of an initial flight instructor applicant to detect improper and insufficient transfer of instructional knowledge, training, and performance of the initial flight instructor applicant.

(D) Corrective action in the case of unsatisfactory training progress.

(ii) The flight training must include at least 10 hours of training that includes the following areas:

(A) Scenario-based training to develop the flight instructor's ability to instruct an initial flight instructor applicant how to satisfactorily perform the procedures and maneuvers while giving effective flight training.

(B) Instructional knowledge and proficiency to teach an initial flight instructor applicant in abnormal and emergency procedures, which must include stall awareness, spin entry, spins, and spin recovery procedures, if applicable to the category and class of aircraft used in the flight instructor enhanced qualification training program.

(C) Risk management and potential results of improper, untimely, or non-execution of safety measures critical to flight training.

(D) Methods of proper evaluation of an initial flight instructor applicant to detect improper and insufficient transfer of instructional knowledge, training, and performance of the initial flight instructor applicant.

(E) Corrective action in the case of unsatisfactory training progress.

(F) Methods to detect personal characteristics of an initial flight instructor applicant that could adversely affect safety.

(iii) Each flight instructor enrolled in the flight instructor enhanced qualification training program must satisfactorily complete an end-of-course written test specific to the ground training subjects in paragraph (h)(3)(i) of this section and an end-of-course instructional proficiency flight test specific to the flight training areas in paragraph (h)(3)(ii) of this section.

(iv) A full flight simulator or flight training device may be used to meet the flight training requirements of paragraph (h)(3)(ii) of this section. The FFS or FTD must be—

(A) Qualified and maintained in accordance with part 60 of this chapter, or a previously qualified device as permitted in accordance with §60.17 of this chapter;

(B) Approved by the Administrator pursuant to §61.4(a); and

(C) Used in accordance with the part under which the FAA-approved course is conducted.

(v) A maximum of 5 hours of training received in an advanced aviation training device may be used to meet the flight training requirements of paragraph (h)(3)(ii) of this section for part 141 flight instructor enhanced qualification training programs. The advanced aviation training device must be—

(A) Approved by the Administrator pursuant to §61.4(c); and

(B) Used in accordance with part 141 of this chapter.

(vi) No certificate holder may use a person, nor may any person serve, as an instructor of the flight instructor enhanced qualification training program unless the instructor holds a flight instructor certificate or ground instructor certificate and meets one of the following qualifications:

(A) Serves as a chief instructor or assistant chief instructor in a part 141 pilot school;

(B) Serves as a training center program manager or assistant training center program manager of a part 142 training center; or

(C) Meets the qualifications of an assistant chief instructor, pursuant to §141.36(d).

(vii) A part 141 pilot school or part 142 training center must issue a graduation certificate to each flight instructor who successfully completes the flight instructor enhanced qualification training program.

Revise §61.197 to read as follows:

§61.197 Recent experience requirements for flight instructor certification.

(a) A person may exercise the privileges of the person's flight instructor certificate only if, within the preceding 24 calendar months, that person has satisfied one of the recent experience requirements specified in paragraph (b) of this section. The 24 calendar

month period during which the flight instructor must establish recent experience shall start from one of the following—

(1) The month the FAA issued the flight instructor certificate;

(2) The month the recent experience requirements of paragraph (b) of this section are accomplished; or

(3) The last month of the flight instructor's current recent experience period provided the recent experience requirements of paragraph (b) of this section are accomplished within the 3 calendar months preceding the last month of the certificate holder's current recent experience period.

(b) A person who holds a flight instructor certificate may establish recent experience by satisfying one of the following requirements—

(1) Passing a practical test for—

(i) One of the ratings listed on the flight instructor certificate;

(ii) An additional flight instructor rating; or

(2) Satisfactorily completing one of the following recent experience requirements, and submitting documentation of such in a form and manner acceptable to the Administrator—

(i) During the preceding 24 calendar months, the flight instructor has endorsed at least 5 applicants for a practical test for a certificate or rating and at least 80 percent of all applicants endorsed passed that test on the first attempt.

(ii) Within the preceding 24 calendar months, the flight instructor has served as a company check pilot, chief flight instructor, company check airman, or flight instructor in a part 121 or 135 operation, or in a position involving the regular evaluation of pilots.

(iii) Within the preceding 3 calendar months, the person has successfully completed an approved flight instructor refresher course consisting of ground training or flight training, or a combination of both.

(iv) Within the preceding 24 calendar months from the month of application, the flight instructor passed an official U.S. Armed Forces military instructor pilot or pilot examiner proficiency check in an aircraft for which the military instructor already holds a rating or in an aircraft for an additional rating.

(v) Within the preceding 24 calendar months from the month of application, the flight instructor has served as a flight instructor in an FAA-sponsored pilot proficiency program, provided the flight instructor meets the following requirements—

(A) Holds a flight instructor certificate and meets the appropriate flight instructor recent experience requirements of this part;

(B) Has satisfactorily completed at least one phase of an FAA-sponsored pilot proficiency program in the preceding 12 calendar months; and

(C) Has conducted at least 15 flight activities recognized under the FAA-sponsored pilot proficiency program, during which the flight instructor evaluated at least 5 different pilots and has made the necessary endorsements in the logbooks of each pilot for each activity.

(c) Except as provided in paragraph (f) of this section, a person who fails to establish recent experience in accordance with paragraph (b) of this section during the 24 calendar month period specified in paragraph (a) of this section may not exercise flight instructor privileges until those privileges are reinstated in accordance with §61.199.

(d) The practical test required by paragraph (b)(1) of this section may be accomplished in a full flight simulator or flight training device if the test is accomplished pursuant to an approved course conducted by a training center certificated under part 142 of this chapter.

(e) A person who holds an unexpired flight instructor certificate issued before December 1, 2024, may renew that certificate by establishing recent experience in accordance with paragraph (b) of this section prior to the month of expiration on that person's flight instructor certificate. Except as provided in §61.40, if that person fails to establish recent experience prior to the expiration of that person's flight instructor certificate, that person may not exercise flight instructor privileges until those privileges are reinstated in accordance with §61.199.

(f) A person who qualifies for the relief prescribed in §61.40 may establish recent experience in accordance with paragraph (b) of this section, provided the requirements of §61.40 are met.

Amend §61.199 by revising the section heading and paragraph (a), and removing paragraphs (c) and (d). The revisions read as follows:

§61.199 Reinstatement of flight instructor privileges.

(a) ***Flight instructor privileges.*** The holder of a flight instructor certificate who has not complied with the flight instructor recent experience requirements of §61.197 may reinstate their flight instructor privileges by filing a completed and signed application with the FAA and satisfactorily completing one of the following reinstatement requirements:

(1) If 3 calendar months or less have passed since the last month of the flight instructor's recent experience period, the flight instructor may successfully complete an approved flight instructor refresher course consisting of ground training or flight training, or a combination of both, or satisfy one of the requirements specified in paragraph (a)(2) of this section.

(2) If more than 3 calendar months have passed since the last month of the flight instructor's recent experience period, the flight instructor must satisfactorily complete one of the following:

(i) A flight instructor certification practical test, as prescribed by §61.183(h), for one of the ratings held on the flight instructor certificate; or

(ii) A flight instructor certification practical test for an additional rating.

(3) For military instructor pilots and pilot examiners, provide a record showing that, within the preceding 6 calendar months from the date of application for reinstatement, the person—

(i) Passed a U.S. Armed Forces instructor pilot or pilot examiner proficiency check; or

(ii) Completed a U.S. Armed Forces instructor pilot or pilot examiner training course and received an additional aircraft qualification as a military instructor pilot or pilot examiner that is appropriate to the flight instructor rating sought.

* * * * *

Revise §61.215 by adding paragraph (e) to read as follows:

§61.215 Ground instructor privileges.

* * * * *

(e) Ground training provided to an initial applicant for a flight instructor certificate may only be provided by an authorized instructor in accordance with §61.195(h)(1).

➧ ***Change Date:*** *October 2, 2024*
➧ ***Effective Date:*** *December 2, 2024*
➧ ***Source:*** *Amdt. 61–156, 89 FR 80340*

Amend §61.413 by revising paragraphs (a) introductory text and (a)(6) and adding paragraph (c) to read as follows:

§61.413 What are the privileges of my flight instructor certificate with a sport pilot rating?

(a) If you hold a flight instructor certificate with a sport pilot rating, you are authorized, within the limits of your certificate and rating, to conduct ground training, flight training, certain checking events, and to issue endorsements related to:
* * * * *

(6) A flight review or operating privilege for a sport pilot, or training to maintain or improve the skills of a sport pilot;
* * * * *

(c) The privileges authorized in this section do not permit a person who holds a flight instructor certificate with a sport pilot rating to conduct operations that would otherwise require an air carrier or operating certificate or specific authorization from the Administrator.

➧ ***Change Date:*** *October 1, 2024*
➧ ***Effective Date:*** *December 1, 2024*
➧ ***Source:*** *Amdt. 61–155, 89 FR 80052*

Revise §61.425 to read as follows:

§61.425 How do I establish recent experience for my flight instructor certificate with a sport pilot rating?

(a) If you hold a flight instructor certificate with a sport pilot rating issued after December 1, 2024, you must establish recent experience in accordance with §61.197.

(b) If you hold an unexpired flight instructor certificate with a sport pilot rating issued before December 1, 2024, you must renew your certificate by establishing recent experience in accordance with §61.197 prior to the month of expiration on your flight instructor certificate. If you fail to establish recent experience prior to the expiration of your flight instructor certificate, you may not exercise flight instructor privileges until you reinstate those privileges in accordance with §61.427.

Revise §61.427 to read as follows:

§61.427 How do I reinstate my flight instructor privileges if I fail to establish recent experience for my flight instructor certificate with a sport pilot rating?

If you fail to establish recent experience for your flight instructor certificate with a sport pilot rating, you must reinstate your flight instructor privileges by satisfactorily completing one of the following reinstatement requirements:

(a) If 3 calendar months or less have passed since the last month of your recent experience period, you must successfully complete an approved flight instructor refresher course consisting of ground training or flight training, or a combination of both, or satisfy the requirements specified in paragraph (b) of this section.

(b) If more than 3 calendar months have passed since the last month of the flight instructor's recent experience period, you must pass a practical test as prescribed in §61.405(b) or §61.183(h) for one of the ratings listed on your flight instructor certificate with a sport pilot rating. The FAA will reinstate any privilege authorized by that flight instructor certificate with a sport pilot rating.

PART 71

DESIGNATION OF CLASS A, B, C, D, AND E AIRSPACE AREAS; AIR TRAFFIC SERVICE ROUTES; AND REPORTING POINTS

➧ ***Change Date:*** *August 26, 2024; September 30, 2024*
➧ ***Effective Date:*** *September 15, 2024, through September 15, 2025*
➧ ***Source:*** *Amdt. 71–56, 89 FR 68338 & 79429*

§71.1 is revised to read as follows:

§71.1 Applicability.

A listing for Class A, B, C, D, and E airspace areas; air traffic service routes; and reporting points can be found in FAA Order JO 7400.11J, Airspace Designations and Reporting Points, dated July 31, 2024. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552 (a) and 1 CFR part 51. The approval to incorporate by reference FAA Order JO 7400.11J is effective September 15, 2024, through September 15, 2025. During the incorporation by reference period, proposed changes to the listings of Class A, B, C, D, and E airspace areas; air traffic service routes; and reporting points will be published in full text as proposed rule documents in the **Federal Register**, unless there is good cause to forego notice and comment. Amendments to the listings of Class A, B, C, D, and E airspace areas; air traffic service routes; and reporting points will be published in full text as final rules in the **Federal Register**. Periodically, the final rule amendments will be integrated into a revised edition of the Order and submitted to the Director of the Federal Register for approval for incorporation by reference in this section. This incorporation by reference material is available for inspection at the Federal Aviation Administration (FAA) and at the National Archives and Records Administration (NARA). Contact the FAA at: Rules and Regulations Group, Federal Aviation Administration, 600 Independence Avenue SW, Washington, DC 20597; phone: (202) 267–8783. An electronic version of FAA Order JO 7400.11J is available on the FAA website at *www.faa.gov/air_traffic/publications*. A copy of FAA Order JO 7400.11J may be inspected in Docket No. FAA–2024–2061; Amendment No. 71–56, on *www.regulations.gov*. For information on the availability of this material at NARA, *email fr.inspection@nara.gov* or visit *www.archives.gov/federal-register/cfr/ibr-locations*.

§§71.5; 71.15; 71.31; 71.33(c); 71.41; 71.51; 71.61; 71.71(b), (c), (d), (e), and (f); and 71.901(a) are amended by removing the words "FAA Order 7400.11H" everywhere that they appear and adding, in their place, the words "FAA Order JO 7400.11J."

PART 91
GENERAL OPERATING AND FLIGHT RULES

➧ ***Change Date:*** *August 22, 2024*
➧ ***Effective Date:*** *October 21, 2024*
➧ ***Source:*** *Amdt. 91–376, 89 FR 67849*

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).

➧ ***Change Date:*** *August 22, 2024*
➧ ***Effective Date:*** *October 21, 2024*
➧ ***Source:*** *Amdt. 91–376, 89 FR 67849*

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;

* * * * *

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.

➨ ***Change Date:*** *October 2, 2024*
➨ ***Effective Date:*** *December 2, 2024*
➨ ***Source:*** *Amdt. 91–378, 89 FR 80340*

Revise §91.315 to read as follows:

§91.315 Limited category civil aircraft: Operating limitations.

Except as provided in §91.326, no person may operate a limited category civil aircraft carrying persons or property for compensation or hire in operations that:

(a) Require an air carrier or commercial operator certificate issued under part 119 of this chapter;

(b) Are listed in §119.1(e) of this chapter;

(c) Require management specifications for a fractional ownership program issued in accordance with subpart K of this part; or

(d) Are conducted under part 129, 133, or 137 of this chapter.

Amend §91.319 by:

a. Revising paragraphs (a) introductory text, (a)(2), (d)(3), (e), and (f); and

b. Removing and reserving paragraph (h).

The revisions read as follows:

§91.319 Aircraft having experimental certificates: Operating limitations.

(a) Except as provided in §91.326, no person may operate an aircraft that has an experimental certificate—

* * * * *

(2) Carrying persons or property for compensation or hire in operations that:

(i) Require an air carrier or commercial operator certificate issued under part 119 of this chapter;

(ii) Are listed in §119.1(e) of this chapter;

(iii) Require management specifications for a fractional ownership program issued in accordance with subpart K of this part; or

(iv) Are conducted under part 129, 133, or 137 of this chapter.

* * * * *

(d) * * *

(3) Notify air traffic control of the experimental nature of the aircraft when utilizing air traffic services.

(e) No person may operate a light-sport aircraft that is issued an experimental certificate under §21.191 of this chapter for compensation or hire, except:

(1) A person may operate an aircraft issued an experimental certificate under §21.191(i)(1) of this chapter to tow a glider that is a light-sport aircraft or unpowered ultralight vehicle in accordance with §91.309; or

(2) A person may operate a light-sport aircraft issued an experimental certificate under §21.191 of this chapter to conduct operations authorized under §91.326.

(f) No person may lease a light-sport aircraft that is issued an experimental certificate under §21.191 of this chapter, except—

(1) In accordance with paragraph (e)(1) of this section; or

(2) To conduct a solo flight in accordance with a training program included as part of the deviation authority specified under §91.326(b).
* * * * *

Revise §91.325 to read as follows:

§91.325 Primary category aircraft: Operating limitations.

(a) Unless provided for in this section, no person may operate a primary category aircraft carrying persons or property for compensation or hire in operations that:

(1) Require an air carrier or commercial operator certificate issued under part 119 of this chapter;

(2) Are listed in §119.1(e) of this chapter;

(3) Require management specifications for a fractional ownership program issued in accordance with subpart K of this part; or

(4) Are conducted under part 129, 133, or 137 of this chapter.

(b) Except as provided in §91.326(c), no person may operate a primary category aircraft that is maintained by the pilot-owner under an approved special inspection and maintenance program except—

(1) The pilot-owner; or

(2) A designee of the pilot-owner, provided that the pilot-owner does not receive compensation for the use of the aircraft.

(c) A primary category aircraft that is maintained by an appropriately rated mechanic or an authorized certificated repair station in accordance with the applicable provisions of part 43 of this chapter may be used to conduct flight training, checking, and testing for compensation or hire.

Add §91.326 to read as follows:

§91.326 Exception to operating certain aircraft for the purposes of flight training, flightcrew member checking, or flightcrew member testing.

(a) ***General.*** Notwithstanding the prohibitions in §§91.315, 91.319(a), and 91.325, a person may conduct flight training, checking, or testing in a limited category aircraft, experimental aircraft, or primary category aircraft under the provisions of this section.

(b) ***Operations requiring a letter of deviation authority.*** Except as provided in paragraphs (c) and (d) of this section, no person may conduct flight training, checking, or testing in a limited category or experimental aircraft without deviation authority issued under this paragraph (b).

(1) No person may operate under this section without a letter of deviation authority (LODA) issued by the Administrator.

(2) The FAA may deny an application for a letter of deviation authority if it determines the deviation would not be in the interest of safety or is unnecessary. The FAA may cancel or amend a letter of deviation authority if it determines that the deviation holder has failed to comply with the conditions and limitations or at any time if the Administrator determines that the deviation is no longer necessary or in the interest of safety.

(3) An applicant must submit a request for deviation authority in a form and manner acceptable to the Administrator at least 60 days before the date of intended operations. A request for deviation authority must contain a complete description of the proposed operation that establishes a level of safety equivalent to that provided under the regulations for the deviation requested, including:

(i) A letter identifying the name and address of the applicant;

(ii) The name and contact information of the individual with ultimate responsibility for operations authorized under the deviation authority;

(iii) Specific aircraft make(s), model(s), registration number(s), and serial number(s) to be used;

(iv) Copies of each aircraft's airworthiness certificate, including the FAA-issued operating limitations, if applicable;

(v) Ejection seat information, if applicable;

(vi) A detailed training program that demonstrates the proposed activities will meet the intended training objectives;

(vii) A description of the applicant's process to determine whether a trainee has a specific need for formation or aerobatic training, or training leading to the issuance of an endorsement, if those types of training are being requested; and

(viii) Any other information that the Administrator deems necessary to evaluate the application.

(4) The holder of a letter of deviation authority must comply with any conditions and limitations provided in that letter of deviation authority. Unless otherwise authorized by the Administrator, the deviation authority will include the following conditions and limitations:

(i) The operator must use the aircraft-specific flight and ground training program for the training authorized by the letter of deviation authority. Demonstration flights, discovery flights, experience flights, and other flights not related to the training program are not authorized.

(ii) As appropriate to the aircraft being flown, all trainees must hold category and class ratings; a type rating, Authorized Experimental Aircraft authorization, or temporary Letter of Authorization; and endorsements listed in §61.31 of this chapter, as appropriate, with the following exceptions:

(A) Persons receiving gyroplane training or training leading to the initial issuance of a sport pilot certificate or flight instructor certificate with a sport pilot rating in a low mass, high drag aircraft with an empty weight less than 650 pounds and a V_H ≤87 Knots Calibrated Airspeed (KCAS) are not required to hold category or class ratings. For training leading to an endorsement for additional sport pilot privileges, the pilot receiving the training must hold at least a sport pilot certificate with appropriate category and class ratings and endorsements issued under §61.31 of this chapter, as appropriate.

(B) Persons with a specific need to receive training toward the issuance of an endorsement are not required to hold the §61.31 of this chapter endorsement sought. Any endorsements being provided must be authorized in the LODA.

(C) Persons receiving jet unusual attitude and upset recovery training, limited category type rating training, or authorized experimental aircraft authorization training, if required for the type of aircraft being flown, are not required to hold the applicable type rating, authorized experimental authorization rating, or a temporary Letter of Authorization prior to the commencement of training.

(D) For ultralight-style training, the person receiving training is not required to meet category and class ratings or §61.31 of this chapter endorsement requirements. However, if the flight training includes a solo flight segment, this does not relieve the person receiving training from the requirements of part 61, subpart C, of this chapter. This training is limited to a low mass, high drag aircraft with an empty weight less than 650 pounds and a maximum speed in level flight with maximum continuous power less than 87 KCAS.

(iii) If the aircraft is equipped with ejection seats and systems, such systems must be rigged, maintained, and inspected in accordance with the manufacturer's recommendations. Before providing training in aircraft equipped with operable ejection systems, whether armed or not armed, all aircraft occupants must complete a course of ejection seat training.

(iv) When conducting spin and upset training, the operator must maintain a minimum recovery altitude of 6,000 feet above ground level unless the Administrator authorizes a lower altitude.

(v) A copy of the LODA must be carried on board the aircraft during flight training conducted under the LODA.

(vi) The LODA holder must keep a record of the training given for a period of 36 calendar months from the completion date of the training. The authorized instructor must sign the trainee's training record certifying that the flight training or ground training was given. The training record must include the following:

(A) The name and certificate number (if applicable) of the trainee;

(B) The name, signature, and certificate number of the instructor;

(C) The date trained;

(D) The training received;

(E) The trainee's specific need for training, if applicable.

(vii) Notwithstanding §43.1(b) of this chapter or §91.409(c)(1), all aircraft must:

(A) Except for turbine powered or large aircraft, within the preceding 100 hours of time in service, have received an annual, 100-hour, or condition inspection equivalent to the scope and detail of appendix D to part 43 of this chapter and been approved for return to service in accordance with part 43. The 100-hour limitation may be exceeded by not more than 10 hours while enroute to reach a place where the inspection can be done. The excess time used to reach a place where the inspection can be done must be included in computing the next 100 hours of time in service; or

(B) Except for turbine powered or large aircraft, be inspected in accordance with an FAA-approved inspection program that includes provisions for ensuring continued airworthiness and recording the current status on life-limited parts and in accordance with the manufacturer's instructions.

(C) For turbine-powered or large aircraft, be inspected in accordance with an FAA-approved inspection program that meets the scope and detail of the requirements of §91.409(e), (f)(4), and (g) for ensuring continued airworthiness and recording time remaining on life-limited parts in accordance with the manufacturer's instructions.

(viii) Notwithstanding any exception due to the experimental airworthiness certification of the aircraft, LODA holders with experimental aircraft must comply with FAA Airworthiness Directives applicable to any corresponding make or model aircraft holding a different type of airworthiness certificate or applicable to any article installed on the aircraft. The LODA holder must evaluate the aircraft and its articles to determine if compliance with the FAA Airworthiness Directive is necessary for the continued safe operation of the aircraft. LODA holders must keep a maintenance record entry of those FAA Airworthiness Directives evaluated. For those FAA Airworthiness Directives for which the LODA holder determined compliance was necessary for the continued safe operation of the aircraft, the record must also include the method of compliance, and if the FAA Airworthiness Directive requires recurring action, the time and date when the next action is required.

(5) Only the following persons may be on board the aircraft during operations conducted under the deviation authority:

(i) The authorized instructor, designated examiner, person receiving flight training or being checked or tested, or persons essential for the safe operation of the aircraft; and

(ii) Notwithstanding any operating limitation applicable under §91.9(a) that prohibits the carriage of passengers for compensation or hire, up to two persons enrolled in a LODA training course for the same aircraft may observe the flight training from a forward-most observer seat with an unobstructed view of the flight deck, provided carriage of those persons is not prohibited by any other regulation.

(6) The Administrator may limit the types of training, testing, and checking authorized under this deviation authority. Training, testing, and checking under this deviation authority must be conducted consistent with the training program submitted for FAA review.

(c) ***Operations not requiring a letter of deviation authority.*** The following operations may be conducted without a letter of deviation authority.

(1) An authorized instructor, registered owner, lessor, or lessee of an aircraft is not required to obtain a letter of deviation authority from the Administrator to allow, conduct, or receive flight training, checking, or testing in a limited category aircraft, experimental aircraft, or primary category aircraft if—

(i) The authorized instructor is not providing both the training and the aircraft;

(ii) No person advertises or broadly offers the aircraft as available for flight training, checking, or testing; and

(iii) No person receives compensation for the use of the aircraft for any flight during which flight training, checking, or testing was received, other than expenses for owning, operating, and maintaining the aircraft. Compensation for the use of the aircraft for profit is prohibited.

(2) A person may operate a limited category aircraft, experimental aircraft, or primary category aircraft to conduct flight training, checking, or testing without a letter of deviation authority if no person provides and no person receives compensation for the flight training, checking, or testing, or for the use of the aircraft.

(d) ***Previously issued letters of deviation authority.*** For deviation authority issued under §91.319 prior to December 2, 2024, the following requirements apply—

(1) The deviation holder may continue to operate under the letter of deviation authority until December 1, 2026;

(2) The deviation holder must continue to comply with the conditions and limitations in the letter of deviation authority when conducting an operation under the letter of deviation authority in accordance with paragraph (b)(1) of this section;

(3) The letter of deviation authority may be cancelled or amended at any time; and

(4) The letter of deviation authority terminates on December 1, 2026.

Amend §91.327 by revising paragraph (a)(2) to read as follows:

§91.327 Aircraft having a special airworthiness certificate in the light-sport category: Operating limitations.

(a) * * *

(2) To conduct flight training, checking, and testing.

* * * * *

➨ ***Change Date:*** *August 23, 2024*
➨ ***Effective Date:*** *October 22, 2024*
➨ ***Source:*** *Amdt. 91–377, 89 FR 68100*

Amend §91.517 by revising paragraph (a) to read as follows:

§91.517 Passenger information.

(a) Except as provided in paragraph (b) of this section, no person may operate an airplane carrying passengers unless it is equipped with signs that are visible to passengers and flight attendants to notify them when smoking is prohibited and when safety belts must be fastened.

(1) The signs that notify when safety belts must be fastened must be so constructed that the crew can turn them on and off.

(2) The signs that prohibit smoking and signs that notify when safety belts must be fastened must be illuminated during airplane movement on the surface, for each takeoff, for each landing, and when otherwise considered to be necessary by the pilot in command.

* * * * *

➧ ***Change Date:*** *June 10, 2021*
➧ ***Effective Date:*** *September 9, 2024*
➧ ***Source:*** *Amdt. 91–363, 86 FR 31060*

Effective September 9, 2024, §91.1051 is removed.

§91.1051 [Removed]

➧ ***Change Date:*** *June 18, 2024*
➧ ***Effective Date:*** *July 18, 2024*
➧ ***Source:*** *Amdt. 91–375, 89 FR 51424*

Amend §91.1063 by revising paragraphs (b)(2)(i) and (ii) to read as follows:

§91.1063 Testing and training: Applicability and terms used.

* * * * *

(b) * * *

(2) * * *

(i) Each program manager must include in upgrade ground training for pilots, instruction in at least the subjects identified in §121.419(a) of this chapter, as applicable to their assigned duties; and, for pilots serving in crews of two or more pilots, instruction and facilitated discussion in the subjects identified in §121.419(c) of this chapter.

(ii) Each program manager must include in upgrade flight training for pilots, flight training for the maneuvers and procedures required in §121.424(a), (c), (e), and (f) of this chapter; and, for pilots serving in crews of two or more pilots, the flight training required in §121.424(b) of this chapter.

➧ ***Change Date:*** *October 16, 2024*
➧ ***Effective Date:*** *October 16, 2024*
➧ ***Source:*** *Amdt. 91–353C, 89 FR 83427*

Amend §91.1605 by revising paragraph (e) to read as follows:

§91.1605 Special Federal Aviation Regulation No. 77—Prohibition Against Certain Flights in the Baghdad Flight Information Region (FIR) (ORBB).

* * * * *

(e) *Expiration.* This SFAR will remain in effect until October 26, 2027. The FAA may amend, rescind, or extend this SFAR, as necessary.

➧ ***Change Date:*** *October 3, 2024*
➧ ***Effective Date:*** *October 3, 2024*
➧ ***Source:*** *Amdt. 91-359B, 89 FR 80390*

Amend §91.1617 by revising paragraph (e) to read as follows:

§91.1617 Special Federal Aviation Regulation No. 117—Prohibition Against Certain Flights in the Tehran Flight Information Region (FIR) (OIIX).

* * * * *

(e) *Expiration.* This SFAR will remain in effect until October 31, 2027. The FAA may amend, rescind, or extend this SFAR as necessary.

➧ ***Change Date:*** *July 5, 2024*
➧ ***Effective Date:*** *July 5, 2024*
➧ ***Source:*** *Amdt. 91-369A, 89 FR 55507*

Amend §91.1619 by revising paragraph (c) to read as follows:

§91.1619 Special Federal Aviation Regulation No. 119—Prohibition Against Certain Flights in the Kabul Flight Information Region (FIR) (OAKX).

* * * * *

(c) *Permitted operations.* This section does not prohibit persons described in paragraph (a) of this section from conducting flight operations in the Kabul Flight Information Region (FIR) (OAKX) under the following circumstances:

(1) *Permitted operations that do not require an approval or exemption from the FAA.*

(i) Overflights of the Kabul Flight Information Region (FIR) (OAKX) may be conducted at altitudes at and above Flight Level (FL) 320, subject to the approval of, and in accordance with the conditions established by, the appropriate authorities of Afghanistan.

(ii) Transiting overflights of the Kabul Flight Information Region (FIR) (OAKX) may be conducted on jet routes P500–G500 at altitudes at and above FL300, subject to the approval of, and in accordance with the conditions established by, the appropriate authorities of Afghanistan.

(2) *Operations permitted under an approval or exemption issued by the FAA.* Flight operations may be conducted in the Kabul Flight Information Region (FIR) (OAKX) at altitudes below FL320, provided that such flight operations occur under a contract, grant, or cooperative agreement with a department, agency, or instrumentality of the U.S. Government (or under a subcontract between the prime contractor of the U.S. Government department, agency, or instrumentality and the person described in paragraph (a) of this section) with the approval of the FAA or under an exemption issued by the FAA. The FAA will consider requests for approval or exemption in a timely manner, with the order of preference being: first, for those operations in support of U.S. Government-sponsored activities; second, for those operations in support of government-sponsored activities of a foreign country with the support of a U.S. Government department, agency, or instrumentality; and third, for all other operations.

* * * * *

PART 136
COMMERCIAL AIR TOURS AND NATIONAL PARKS AIR TOUR MANAGEMENT

➧ ***Change Date:*** *August 22, 2024*
➧ ***Effective Date:*** *October 21, 2024*
➧ ***Source:*** *Amdt. 136–3, 89 FR 67850*

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.

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.

PART 141
PILOT SCHOOLS

➧ ***Change Date:*** *October 1, 2024*
➧ ***Effective Date:*** *December 1, 2024*
➧ ***Source:*** *Amdt. 141–25, 89 FR 80053*

The authority citation for part 141 is revised to read as follows:

Authority: 49 U.S.C. 106(f), 40113, 44701–44703, 44707, 44709, 44711, 45102–45103, 45301–45302.

Amend §141.11 by adding paragraph (b)(2)(ix) and paragraph (b)(4) to read as follows:

§141.11 Pilot school ratings.

* * * * *

(b) * * *

(2) * * *

(ix) Flight instructor enhanced qualification training program.

* * * * *

(4) *Combined Private Pilot Certification and Instrument Rating Course*. (Appendix M).

Amend appendix K to part 141 by:

a. Revising the paragraph heading of paragraph 4;
b. Revising paragraphs 4.(a) through (c); and
c. Adding paragraph 14.

The revisions and addition read as follows:

APPENDIX K TO PART 141

SPECIAL PREPARATION COURSES

* * * * *

4. *Use of full flight simulators, flight training devices, or aviation training devices.*

(a) The approved special preparation course may include training in a full flight simulator or flight training device, provided it is representative of the aircraft for which the course is approved, meets requirements of this paragraph, and the training is given by an authorized instructor. A flight instructor enhanced qualification training program may include training in an advanced aviation training device in accordance with paragraph 14 of this appendix and §61.195(h)(3)(v) of this chapter.

(b) Except for the airline transport pilot certification program in paragraph 13 of this appendix and the flight instructor enhanced qualification training program in paragraph 14 of this appendix, training in a full flight simulator that meets the requirements of §141.41(a) may be credited for a maximum of 10 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

(c) Except for the airline transport pilot certification program in paragraph 13 of this appendix and the flight instructor enhanced qualification training program in paragraph 14 of this appendix, training in a flight training device that meets the requirements of §141.41(a), may be credited for a maximum of 5 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.

* * * * *

14. *Flight instructor enhanced qualification training program.* An approved flight instructor enhanced qualification training program must include the ground and flight training specified in §61.195(h)(3) of this chapter. The FAA will not approve a course with fewer hours than those prescribed in §61.195(h)(3) of this chapter.

Aeronautical Information Manual
Explanation of Major Changes

Change 3 effective September 5, 2024 (to Basic Manual effective April 20, 2023).

1–2–4. Recognizing, Mitigating, and Adapting to GPS Interference (Jamming or Spoofing)

This change provides additional guidance and recommendations for jamming and/or spoofing of Global Positioning System (GPS) and reiterates the need for pilots' reporting of events.

3–5–2. Military Training Routes

This change adds explanatory material on Special Military Advisory Routes (SMARs).

4–4–12. Speed Adjustments

5–4–1. Standard Terminal Arrival Procedures

This change adds language to clarify that any published speed, including a chart note speed, is canceled when aircraft are vectored or deviate off of a procedure.

4–4–12. Speed Adjustments

This change is being made to align ICAO language with NAS orders and procedures by removing "turbojet" as the only aircraft that can be assigned a Mach number speed.

4–5–2. Air Traffic Control Radar Beacon System (ATCRBS)

Appendix 3. Abbreviations/Acronyms

This change removes the note in subparagraph 4-5-2c; Figure 4-5-3 and Figure 4-5-4 that illustrate the old systems; and references to Automated Radar Terminal System in Appendix 3, Abbreviations/Acronyms.

5–4–5. Instrument Approach Procedures (IAP) Charts

This change corrects the inconsistency between documents and charting to reflect the current method of procedure titling.

Editorial Changes

An editorial change to subparagraph 5-1-1d corrects the time frame for updating Section Charts from 6 months to 56 days.

Entire Publication

Additional editorial/format changes were made where necessary. Revision bars were not used because of the insignificant nature of these changes.

Aeronautical Information Manual (AIM)

Chapter 1

1–2–4 Recognizing, Mitigating, and Adapting to GPS Jamming and/or Spoofing

a. The low-strength data transmission signals from GPS satellites are vulnerable to various anomalies that can significantly reduce the reliability of the navigation signal. The GPS signal is vulnerable and has many uses in aviation (e.g., communication, navigation, surveillance, safety systems and automation); therefore, pilots must place additional emphasis on closely monitoring aircraft equipment performance for any anomalies and promptly inform Air Traffic Control (ATC) of any apparent GPS degradation. Pilots should also be prepared to operate without GPS navigation systems.

* * * * *

c. Manufacturers, operators, and air traffic controllers should be aware of the general impacts of GPS jamming and/or spoofing, which include, but are not limited to:

1. Inability to use GPS for navigation.

2. Inability to use hybrid GPS inertial systems for navigation.

3. Loss of, or degraded, performance-based navigation (PBN) capability (e.g., inability to fly required navigation performance (RNP) procedures).

4. Unreliable triggering of Terrain Awareness and Warning Systems (TAWS).

5. Inaccurate aircraft position on navigation display (e.g., moving map and electronic flight bag).

6. Loss of, or erroneous, Automatic Dependent Surveillance–Broadcast (ADS-B) outputs.

7. Unexpected effects when navigating with conventional NAVAIDS (e.g., if the aircraft is spoofed from the intended flight path, autotuning will not select the nearby NAVAID).

8. Unanticipated position-dependent flight management system effects (e.g., erroneous insufficient fuel indication).

9. Failure or degradation of Air Traffic Management (ATM) infrastructure and its associated systems reliant on GPS, resulting in potential airspace infringements and/or route deviations.

10. Failure of, or erroneous aircraft clocks (resulting in inability to log on to Controller-Pilot Data Link Communications CPDLC).

11. Erroneous wind and ground speed indications.

* * * * *

e. Prior to departure, the FAA recommends operators to:

1. Be aware of potential risk locations.

2. Check for any relevant Notices to Air Missions (NOTAMs).

3. Plan fuel contingencies.

4. Plan to use conventional NAVAIDs and appropriate arrival/approach procedures at the destination.

5. Follow the detailed guidance from the respective Original Equipment Manufacturer (OEM).

f. During flight, the FAA recommends operators do the following:

1. Be vigilant for any indication that the aircraft's GPS is disrupted by reviewing the manufacturer's guidance for that specific aircraft type and avionics equipage. Verify the aircraft position by means of conventional NAVAIDs, when available. Indications of jamming and/or spoofing may include:

(a) Changes in actual navigation performance.

(b) Aircraft clock changes (e.g., incorrect time).

(c) Incorrect Flight Management System (FMS) position.

(d) Large shift in displayed GPS position.

(e) Primary Flight Display (PFD)/Navigation Display (ND) warnings about position error.

(f) Other aircraft reporting clock issues, position errors, or requesting vectors.

2. Assess operational risks and limitations linked to the loss of GPS capability, including any on-board systems requiring inputs from a GPS signal.

3. Ensure NAVAIDs critical to the operation for the intended route/approach are available.

4. Remain prepared to revert to conventional instrument flight procedures.

5. Promptly notify ATC if they experience GPS anomalies. Pilots should not inform ATC of GPS jamming and/or spoofing when flying through known NOTAMed testing areas unless they require ATC assistance. (See paragraph 1-1-13)

g. Post flight, the FAA recommends operators to:

1. Document any GPS jamming and/or spoofing in the maintenance log to ensure all faults are cleared.

2. File a detailed report at the reporting site: *Report a GPS Anomaly Federal Aviation Administration*, www.faa.gov/air_traffic/nas/gps_reports.

Chapter 3

3–5–2 Military Training Routes

* * * * *

d. * * *

2. * * *

(b) VFR Sectional Aeronautical Charts. These charts will depict military training activities such as IR and VR information. Special Military Activity Routes (SMARs) may also be charted on the VFR Sectional Chart, showing the extent of the airspace allocated to the associated IFR Military Training Routes within which the Department of Defense conducts periodic operations involving Unmanned Aircraft Systems. These aircraft may be accompanied by military or other aircraft that provide the pilots of the Unmanned Aircraft Systems visual observation information about other aircraft operations near them. Further information on SMAR charting can be found on the border of the printed VFR Sectional Chart and in the FAA Aeronautical Chart Users' Guide available online at: https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/aero_guide/.

* * * * *

g. Nonparticipating aircraft are not prohibited from flying within an MTR or SMAR; however, extreme vigilance should be exercised when conducting flight through or near these routes. Pilots, while inflight, should contact the FSS within 100 NM of a particular MTR to obtain current information or route usage in their vicinity. Information available includes times of scheduled activity, altitudes in use on each route segment, and actual route width. Route width varies for each MTR and can extend several miles on either side of the charted MTR centerline. Route width information for IFR Military Training Route (IR) and VFR Military Training Route (VR) MTRs is also available in the FLIP AP/1B along with additional MTR (slow routes/air refueling routes) information. When requesting MTR information, pilots should give the FSS the MTR designation of interest, their position, route of flight, and destination in order to reduce frequency congestion and permit the FSS specialist to identify the MTR or SMAR that could be a factor.

Chapter 4

4–4–12 Speed Adjustments

a. ATC will issue speed adjustments to pilots of radar controlled aircraft to achieve or maintain appropriate spacing. If necessary, ATC will assign a speed when approving deviations or radar vectoring off procedures that include published speed restrictions or a chart note used to transition from Mach to IAS. If no speed is assigned, speed becomes pilot's discretion. However, when the aircraft reaches the end of the STAR, the last published speed on the STAR must be maintained until ATC deletes it, assigns a new speed, issues a vector, assigns a direct route, or issues an approach clearance.

Note: *A chart note identifying a speed to maintain after transitioning from Mach to IAS may be published in lieu of or in addition to other published speed restrictions on a STAR.*

Reference: *AIM, ¶5-4-1, Standard Terminal Arrival (STAR) Procedures.*

b. ATC will express all speed adjustments in terms of knots based on indicated airspeed (IAS) in 5 or 10 knot increments except that at or above FL 240 speeds may be expressed in terms of Mach numbers in 0.01 increments. The use of Mach numbers is restricted to aircraft with Mach meters.

* * * * *

4–5–2 Air Traffic Control Radar Beacon System (ATCRBS)

* * * * *

c. A part of the ATCRBS ground equipment is the decoder. This equipment enables a controller to assign discrete transponder codes to each aircraft under his/her control. Normally only one code will be assigned for the entire flight. Assignments are made by the ARTCC computer on the basis of the National Beacon Code Allocation Plan. The equipment is also designed to receive Mode C altitude information from the aircraft.

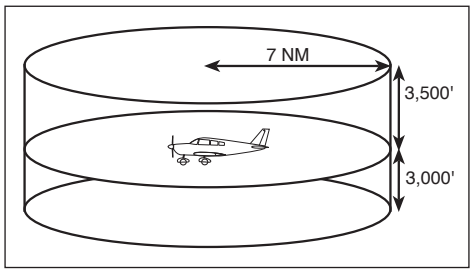
d. It should be emphasized that aircraft transponders greatly improve the effectiveness of radar systems.

Reference: *AIM, ¶4-1-20, Transponder and ADS-B Out Operation.*

4–5–6 Traffic Information Service (TIS)

a. Introduction. The Traffic Information Service (TIS) provides information to the cockpit via data link, that is similar to VFR radar traffic advisories normally received over voice radio. Among the first FAA-provided data services, TIS is intended to improve the safety and efficiency of "see and avoid" flight through an automatic display that informs the pilot of nearby traffic and potential conflict situations. This traffic display is intended to assist the pilot in visual acquisition of these aircraft. TIS employs an enhanced capability of the terminal Mode S radar system, which contains the surveillance data, as well as the data link required to "uplink" this information to suitably-equipped aircraft (known as a TIS "client"). TIS provides estimated position, altitude, altitude trend, and ground track information for up to 8 intruder aircraft within 7 NM horizontally, +3,500 and –3,000 feet vertically of the client aircraft (see Figure 4-5-3, TIS Proximity Coverage Volume). The range of a target reported at a distance greater than 7 NM only indicates that this target will be a threat within 34 seconds and does not display a precise distance. TIS will alert the pilot to aircraft (under surveillance of the Mode S radar) that are estimated to be within 34 seconds of potential collision, regardless of distance or altitude. TIS surveillance data is derived from the same radar used by ATC; this data is uplinked to the client aircraft on each radar scan (nominally every 5 seconds).

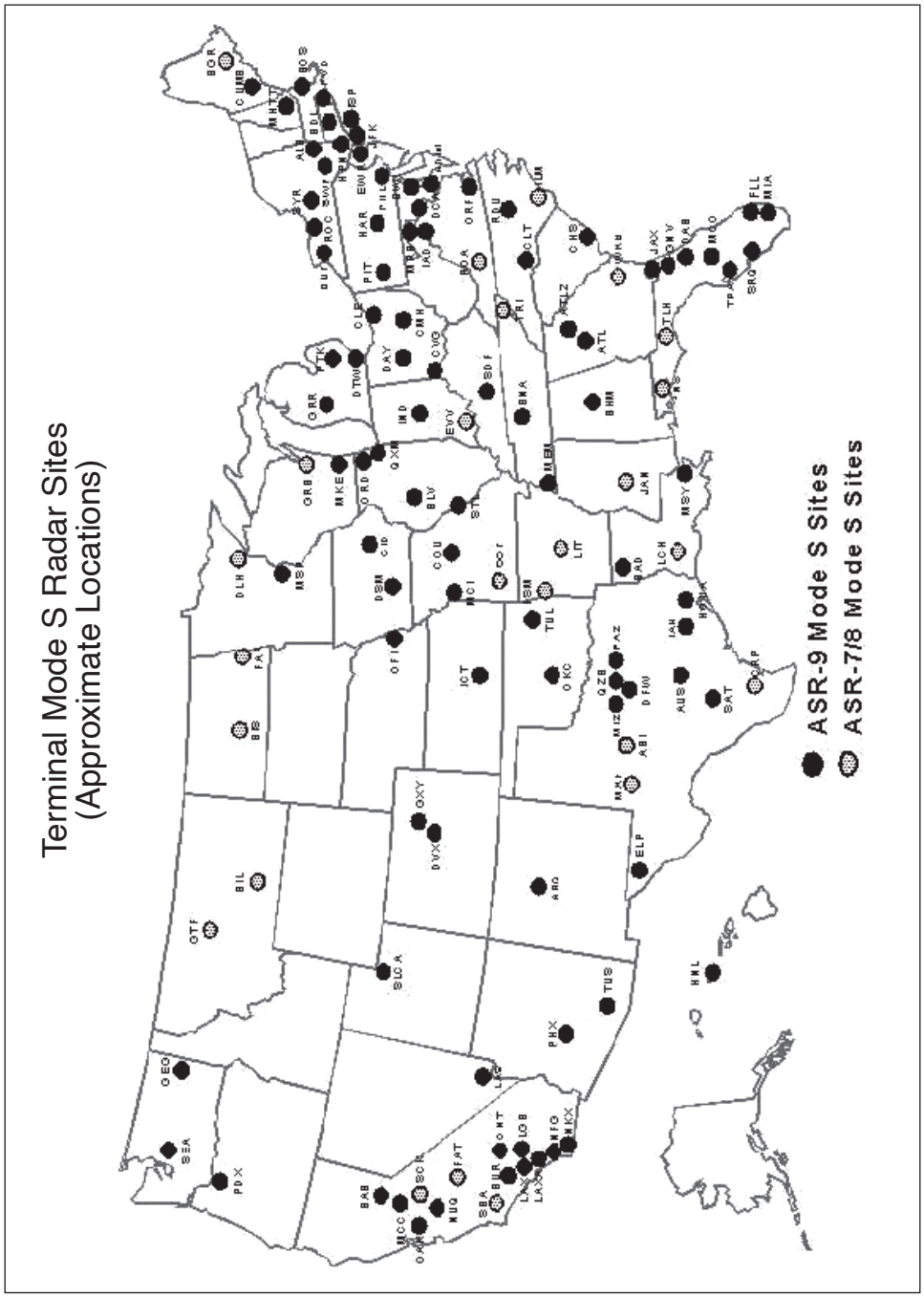
FIGURE 4–5–3
TIS Proximity Coverage Volume



b. * * *

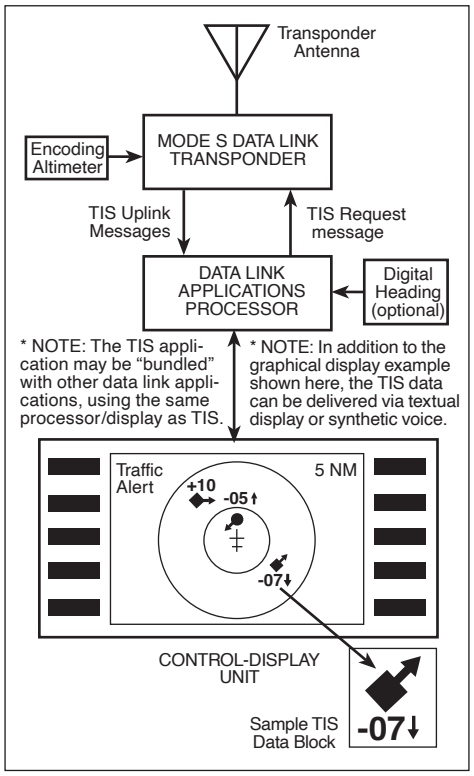
1. In order to use TIS, the client and any intruder aircraft must be equipped with the appropriate cockpit equipment and fly within the radar coverage of a Mode S radar capable of providing TIS. Typically, this will be within 55 NM of the sites depicted in Figure 4-5-4, Terminal Mode S Radar Sites. ATC communication is not a requirement to receive TIS, although it may be required by the particular airspace or flight operations in which TIS is being used.

FIGURE 4–5–4
Terminal Mode S Radar Sites



2. The cockpit equipment functionality required by a TIS client aircraft to receive the service consists of the following (refer to Figure 4-5-5):

FIGURE 4–5–5
Traffic Information Service (TIS)
Avionics Block Diagram



* * * * *

4. TIS will initially be provided by the terminal Mode S systems that are paired with ASR-9 digital primary radars. These systems are in locations with the greatest traffic densities, thus will provide the greatest initial benefit. The remaining terminal Mode S sensors, which are paired with ASR-7 or ASR-8 analog primary radars, will provide TIS pending modification or relocation of these sites. See Figure 4-5-4, Terminal Mode S Radar Sites, for site locations. There is no mechanism in place, such as NOTAMs, to provide status update on individual radar sites since TIS is a nonessential, supplemental information service.

The FAA also operates en route Mode S radars (not illustrated) that rotate once every 12 seconds. These sites will require additional development of TIS before any possible implementation. There are no plans to implement TIS in the en route Mode S radars at the present time.

* * * * *

c. * * *

5. Depending on avionics system design, TIS may be presented to the pilot in a variety of different displays, including text and/or graphics. Voice annunciation may also be used, either alone or in combination with a visual display. Figure 4-5-5, Traffic Information Service (TIS), Avionics Block Diagram, shows an example of a TIS display using symbology similar to the Traffic Alert and Collision Avoidance System (TCAS) installed on most passenger air carrier/commuter aircraft in the U.S. The small symbol in the center represents the client aircraft and the display is oriented "track up," with the 12 o'clock position at the top. The range rings indicate 2 and 5 NM. Each intruder is depicted by a symbol positioned at the approximate relative bearing and range from the client aircraft. The circular symbol near the center indicates an "alert" intruder and the diamond symbols indicate "proximate" intruders.

6. The inset in the lower right corner of Figure 4-5-5, Traffic Information Service (TIS), Avionics Block Diagram, shows a possible TIS data block display. The following information is contained in this data block:

* * *

d. * * *

2. * * *

(b) TIS Client Altitude Reporting Requirement. Altitude reporting is required by the TIS client aircraft in order to receive TIS. If the altitude encoder is inoperative or disabled, TIS will be unavailable, as TIS requests will not be honored by the ground system. As such, TIS requires altitude reporting to determine the Proximity Coverage Volume as indicated in Figure 4-5-3. TIS users must be alert to altitude encoder malfunctions, as TIS has no mechanism to determine if client altitude reporting is correct. A failure of this nature will cause erroneous and possibly unpredictable TIS operation. If this malfunction is suspected, confirmation of altitude reporting with ATC is suggested.

* * * * *

(d) * * *

(1) TIS will typically be provided within 55 NM of the radars depicted in Figure 4-5-4, Terminal Mode S Radar Sites. This maximum range can vary by radar site and is always subject to "line of sight" limitations; the radar and data link signals will be blocked by obstructions, terrain, and curvature of the earth.

* * * * *

e. * * *

1. * * *

Note: *TIS operates at only those terminal Mode S radar sites depicted in Figure 4-5-4. Though similar in some ways, TIS is not related to TIS-B (Traffic Information Service–Broadcast).*

4–5–7 Automatic Dependent Surveillance–Broadcast (ADS-B) Services

a. * * *

1. Automatic Dependent Surveillance–Broadcast (ADS-B) is a surveillance technology deployed throughout the NAS (see Figure 4-5-6). The ADS-B system is composed of aircraft avionics and a ground infrastructure. Onboard avionics determine the position of the aircraft by using the GNSS and transmit its position along with additional information about the aircraft to ground stations for use by ATC and other ADS-B services. This information is transmitted at a rate of approximately once per second. (See Figure 4-5-7 and Figure 4-5-8.)

FIGURE 4–5–6
ADS-B, TIS-B, and FIS-B: Broadcast Services Architecture

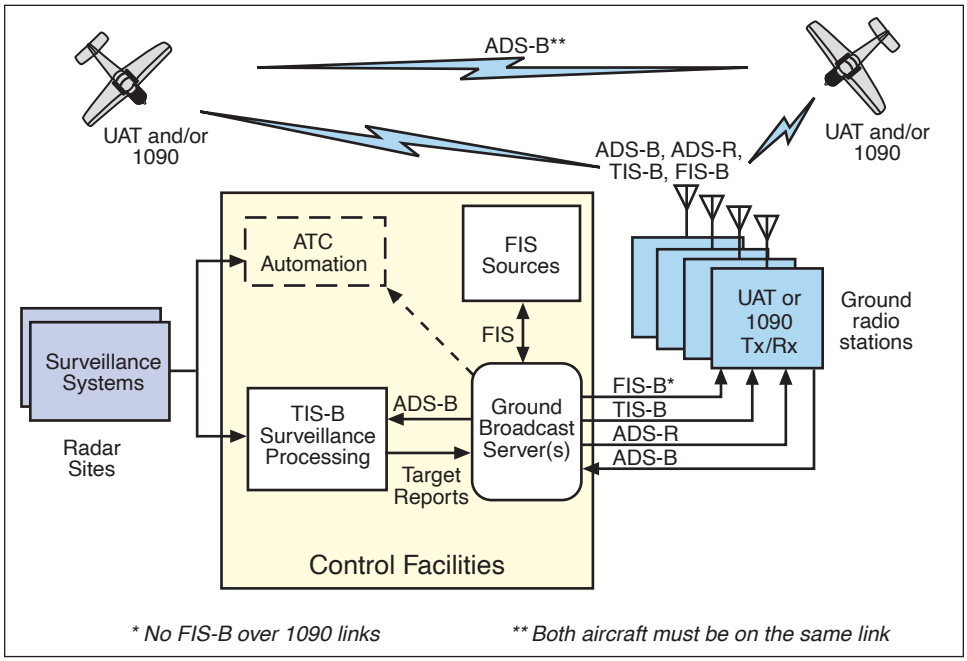


FIGURE 4–5–7
En Route – ADS-B/ADS-R/ TIS-B/FIS-B Service Ceilings/Floors

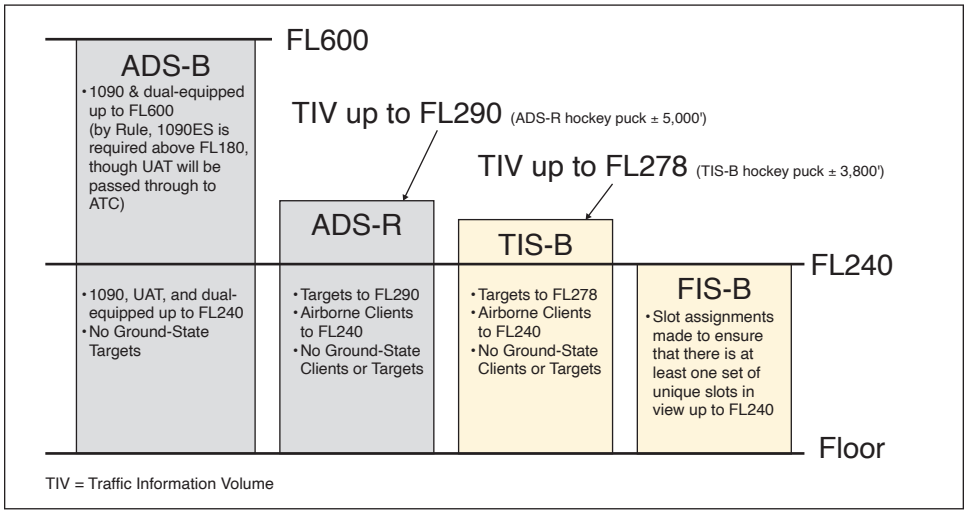
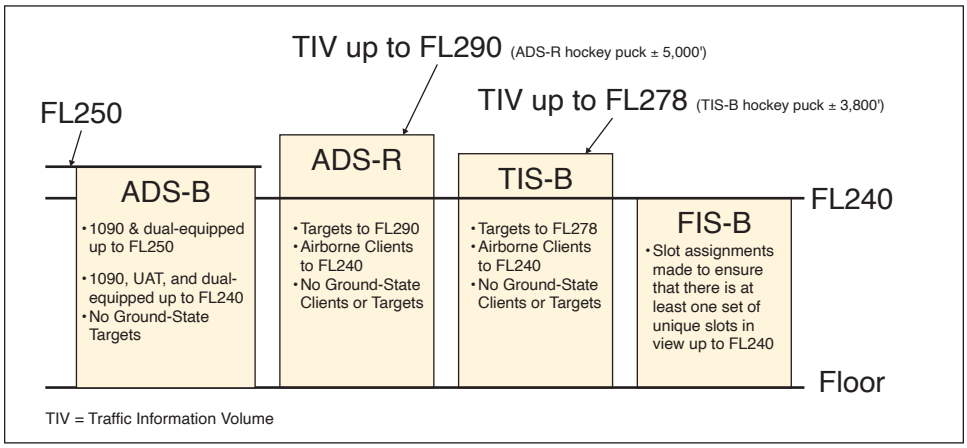


FIGURE 4–5–8
Terminal – ADS-B/ADS-R/ TIS-B/FIS-B Service Ceilings/Floors



* * * * *

4–5–8 Traffic Information Service–Broadcast (TIS-B)

a. Introduction.

TIS-B is the broadcast of ATC derived traffic information to ADS-B equipped (1090ES or UAT) aircraft from ground radio stations. The source of this traffic information is derived from ground-based air traffic surveillance sensors. TIS-B service will be available throughout the NAS where there are both adequate surveillance coverage from ground sensors and adequate broadcast coverage from ADS-B ground radio stations. The quality level of traffic information provided by TIS-B is dependent upon the number and type of ground sensors available as TIS-B sources and the timeliness of the reported data. (See Figure 4-5-7 and Figure 4-5-8.)

* * * * *

4–5–9 Flight Information Service–Broadcast (FIS-B)

a. Introduction.

FIS-B is a ground broadcast service provided through the ADS-B Services network over the 978 MHz UAT data link. The FAA FIS-B system provides pilots and flight crews of properly equipped aircraft with a cockpit display of certain aviation weather and aeronautical information. FIS-B reception is line-of-sight within the service volume of the ground infrastructure. (See Figure 4-5-7 and Figure 4-5-8.)

* * * * *

4–5–10 Automatic Dependent Surveillance–Rebroadcast (ADS-R)

a. Introduction

ADS-R is a datalink translation function of the ADS-B ground system required to accommodate the two separate operating frequencies (978 MHz and 1090 ES). The ADS-B system receives the ADS-B messages transmitted on one frequency and ADS-R translates and reformats the information for rebroadcast and use on the other frequency. This allows ADS-B In equipped aircraft to see nearby ADS-B Out traffic regardless of the operating link of the other aircraft. Aircraft operating on the same ADS-B frequency exchange information directly and do not require the ADS-R translation function. (See Figure 4-5-7 and Figure 4-5-8.)

* * * * *

Chapter 5

5–4–1 Standard Terminal Arrival (STAR) Procedures

a. * * *

1. STAR procedures may have mandatory speeds and/or crossing altitudes published. Other STARs may have planning information depicted to inform pilots what clearances or restrictions to "expect." "Expect" altitudes/speeds are not considered STAR procedures crossing restrictions unless verbally issued by ATC. Published speed restrictions are independent of altitude restrictions and are mandatory unless modified by ATC. Pilots should plan to cross waypoints with a published speed restriction, at the published speed, and should not exceed this speed past the associated waypoint unless authorized by ATC or a published note to do so. STAR procedures may have mandatory speeds and/or crossing altitudes published. Other STARs may have planning information depicted to inform pilots what clearances or restrictions to "expect." "Expect" altitudes/speeds are not considered STAR procedures crossing restrictions unless verbally issued by ATC. Published speed restrictions are independent of altitude restrictions and are mandatory unless modified by ATC. Pilots should plan to cross waypoints with a published speed restriction, at the published speed, and should not exceed this speed past the associated waypoint unless authorized by ATC or a published note to do so. A chart note used to transition from Mach to IAS may also be published. Pilots should maintain their cruise Mach number during the descent until reaching the published transition speed in knots, then continue the descent at that speed until the next published speed restriction on the STAR, or until it is necessary to comply with the speed limits published in 14 CFR §91.117.

* * * * *

2. When an IFR cleared route includes a STAR, pilots must maintain the last assigned altitude until receiving authorization to descend so as to comply with all published/issued altitude restrictions. This authorization may contain the phraseology "DESCEND VIA." If vectored or cleared to deviate off a STAR, pilots must consider the STAR canceled. If the STAR contains published altitude restrictions, speed restrictions, or a chart note used to transition from Mach to IAS, those restrictions are also canceled and pilots will receive an altitude to maintain and, if necessary, a speed. If ATC intends to clear the aircraft back onto the STAR, controllers will advise pilots where to expect to resume the procedure. Pilots

should then be prepared to rejoin the STAR at the subsequent fix or procedure leg.
* * * * *

5–4–5 Instrument Approach Procedure (IAP) Charts

a. * * *

3. * * *

(a) * * *

Note: *This procedure identification method has changed and these procedures will be revised in the course of the normal procedure amendment process. The slash and equipment (e.g., /DME) information will be removed with future amendments. Pilots should review the procedure's notes, planview annotations, and PBN/equipment requirements boxes to determine the capability needed to accomplish the procedure.*

Appendix 3. Abbreviations/Acronyms

* * * * *

C/A	Coarse Acquisition
CAT	Clear Air Turbulence

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