2027

# FAR/AIM

Federal Aviation Regulations / Aeronautical Information Manual

U.S. Department of Transportation

**Rules and Procedures for Aviators**
From Titles 14 and 49 of the Code of Federal Regulations

# 2027

# FAR/AIM

Federal Aviation Regulations
Aeronautical Information Manual

**U.S. Department of Transportation**

Rules and Procedures for Aviators
From Titles 14 and 49 of the Code of Federal Regulations

SAMPLE

AVIATION SUPPLIES & ACADEMICS, INC.
KALAMAZOO, MICHIGAN

*FAR/AIM*
*Federal Aviation Regulations and Aeronautical Information Manual*
2027 Edition

Aviation Supplies & Academics, Inc.
817 Walbridge Street
Kalamazoo, Michigan 49007
asa@asa2fly.com | 425-235-1500 | asa2fly.com

Copyright © 2026 Aviation Supplies & Academics, Inc.
First edition published 1945. 2027 edition published 2026.

This publication contains current regulations as of May 5, 2026.
The *Aeronautical Information Manual* is current through January 22, 2026.

Visit the FAA's website to review changes to the regulations:
**www.faa.gov/regulations_policies/faa_regulations/**

Visit **asa2fly.com/farupdate** for regulation and *AIM* changes released after this printing date and to sign up for ASA's free FAR/AIM Update notification service.

Access this book's online Reader Resources for additional relevant information:
**asa2fly.com/faraim-book**

All rights reserved.
None of the material in this publication supersedes any documents, procedures, or regulations issued by the Federal Aviation Administration or Department of Transportation.

ASA does not claim copyright on any material published herein that was taken from United States government sources. The *Aeronautical Information Manual* is prepared referencing from the public government sources without revision.

Front cover photo: Courtesy AOPA / Photographer Chris Rose (photo of Maule M-9).

**ASA-27-FR-AM-PD**
ISBN 978-1-64425-562-9

**Additional formats available:**
Print Book ISBN 978-1-64425-560-5
eBook EPUB ISBN 978-1-64425-561-2

SAMPLE

Stay informed with ASA online resources.

**Website**
asa2fly.com

**Updates**
asa2fly.com/farupdate

**Follow, like, share.**
instagram.com/asa2fly
facebook.com/asa2fly
youtube.com/asa2fly
linkedin.com/company/asa2fly

# 2027

# FAR/AIM

Federal Aviation Regulations
Aeronautical Information Manual

SAMPLE

## Contents

Introduction: ASA 2027 FAR/AIM Series ..... v

Identifying Regulation Changes Since Last Year ..... vi

Summary of Major FAR Changes Since 2026 Book Was Published ..... vii

Pilot's Bill of Rights ..... viii

FAR Parts Listed in Titles 14 and 49 of the Code of Federal Regulations ..... xv

Suggested Study List by Certificate ..... xviii

**Federal Aviation Regulations (FAR) ..... 1**

**Aeronautical Information Manual (AIM) ..... 473**

NASA Aviation Safety Reporting System—General Form ..... 1098

FAR/AIM Index ..... 1101

© Aviation Supplies & Academics, Inc.

**Stay Informed About Regulation Changes Throughout the Year**

Stay current on all regulation changes that affect this book with ASA's free Update service: **asa2fly.com/farupdate**

SAMPLE

# Introduction

## ASA 2027 FAR/AIM Series
## FAR/AIM • FAR for Flight Crew • FAR for AMT

ASA has been supplying the standard reference of the industry, the FAR/AIM series, for more than 80 years. The 2027 series continues to provide the Federal Aviation Regulations and the *Aeronautical Information Manual* along with these important features:

- All changes since the last edition are clearly identified.
- Includes suggested study list of FAR sections and *AIM* paragraphs pertinent to specific pilot certificates and ratings.
- Detailed index with both FAR and *AIM* terms provides an alphabetized listing of subject matter for quick look-up.
- *AIM* produced with full-color graphics.

Each regulation Part is preceded by a table of contents. Changes since last year's printing are identified on page vii and in the table of contents for each regulation Part (in bold and marked with an asterisk), as well as within the text for quick reference (changed text is indicated with a bold line in the margin). In the *AIM*, changes are explained in a list at the beginning and with bold lines in the margins. It is recommended that you familiarize yourself with all the changes to identify those that affect your aviation activities.

Changes affecting the regulations can take place daily; the *AIM* changes every 6 months. ASA tracks all changes and offers you two options for free **Updates** at **asa2fly.com/farupdate**:

- You can download the latest Updates from the ASA website anytime.
- You may sign up for ASA's free service to have Update notices automatically emailed to you.

Visit the Federal Aviation Administration (FAA) website at www.faa.gov to review Advisory Circulars (AC), Notices of Proposed Rulemaking (NPRM), current regulations, FSDO contact details, and FAA Orders and publications. Pilots operating internationally should be familiar with Customs and Border Protection regulations, which can be found at cbp.gov.

Although ASA is not a government agency, and we do not write the regulations or the *AIM*, we do work closely with the FAA. Questions or concerns can be forwarded to our attention, and we will in turn pass the comments on to the responsible office within the agency. The FAA is interested in user feedback, and your comments could foster improvements in the regulations that affect the entire industry.

**FAR/AIM Comments**

Aviation Supplies & Academics, Inc.
817 Walbridge Street
Kalamazoo, Michigan 49007

**Website** asa2fly.com
**Email** asa@asa2fly.com

SAMPLE

# Identifying Regulation Changes Since Last Year

**Changes since last year's printing** of the book are noted in the table of contents of each Part with an asterisk and bold title:

*Example:*

***61.5 Certificates and ratings issued under this part.**

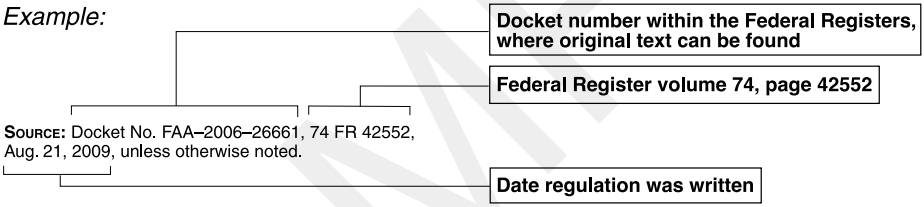
**The updated text** within the context of the regulation is indicated by a bold line in the margin:

> **(a)** The following certificates are issued under this part to an applicant who satisfactorily accomplishes the training and certification requirements for the certificate sought:
> (1) Pilot certificates—
> (i) Student pilot.
> (ii) Sport pilot.
> (iii) Recreational pilot.
> (iv) Private pilot.
> (v) Commercial pilot.
> (vi) Airline transport pilot.
> (2) Flight instructor certificates.
> (3) Ground instructor certificates.

## How to Identify the Currency of the Regulations

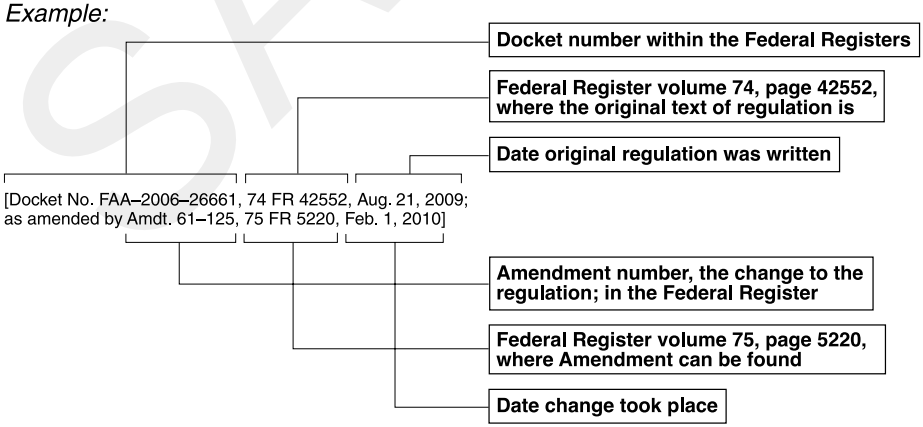
**Following the table of contents at the beginning of each Part is a Source,** which gives the date of origin for that regulation.

*Example:*




**If a change has taken place since the original regulation was written,** it is noted at the end of the regulation.

*Example:*




SAMPLE


© Aviation Supplies & Academics, Inc.

# Summary of Major FAR Changes Since 2026 Book Was Published

**All changes are identified in the table of contents of each Part with bold Section titles and asterisks and in the regulation text with bold lines in the margins. These regulation changes from the *Federal Register* affect this book as follows:**

## 14 CFR

**Parts 1, 43, 61, 91, 119**

- Amends rules for the manufacture, certification, operation, maintenance, and alteration of light-sport aircraft. The amendments remove the prescriptive "light-sport aircraft" definition from 14 CFR §1.1, eliminating legacy weight-based limits and enabling a shift to a performance-based framework. This change separates aircraft certification from sport pilot privileges, allowing a broader range of aircraft to qualify under the light-sport category while maintaining distinct operational limits for sport pilots.

**Parts 43, 61, 67, 89, 107, 142**

- Amends, restructures, and consolidates the falsification regulations presently located throughout 14 CFR. Regarding 14 CFR Chapter I, this rule eliminates inconsistencies among the various falsification regulations and associated sanctions; consolidates all existing falsification regulations into Part 3, Subpart D, to standardize them; and ensures that falsification-related conduct not addressed by pertinent current regulations is covered.

**Part 71**

- Amends regulations relating to airspace designations to reflect the incorporation by reference of FAA Order JO 7400.11K, Airspace Designations and Reporting Points. This action also explains the procedures the FAA will use to amend the listings of Class A, B, C, D, and E airspace areas; air traffic service routes; and reporting points incorporated by reference.

**Part 91**

- Extends the prohibition against certain flight operations in the Kabul Flight Information Region (FIR) (OAKX) from July 25, 2025, to July 25, 2028.
- Increases the recording time of cockpit voice recorders (CVRs) from the currently mandated 2 hours to 25 hours for all affected future manufactured aircraft. This action provides accident investigators, aircraft operators, and civil aviation authorities with substantially more CVR data to help determine the probable causes of incidents and accidents and prevent future incidents and accidents, and it aligns the FAA regulations more closely with existing international requirements.

## 49 CFR

**Part 1552**

- Makes nomenclature changes to sections of the Code of Federal Regulations (CFR) administered by the Transportation Security Administration (TSA) to conform TSA regulations with statutory terminology used in the Immigration and Nationality Act.

The ***Aeronautical Information Manual*** printed in this book is current through January 22, 2026. The major changes are summarized in the *AIM* introductory text.

**Note:** Changes affecting the regulations can take place daily. ASA tracks all changes and posts them on the ASA website so you always have the most current information. To view the rules currently in effect and to have Update notices automatically emailed to you, visit **asa2fly.com/farupdate**.

SAMPLE

## Regs on the go!

Keep the FAA regulations in your pocket with ASA's FAR/AIM app, available for Apple and Android devices.

Includes regulations, *AIM*, and Advisory Circulars from the complete ASA FAR/AIM Series: *FAR/AIM, FAR for Flight Crew,* and *FAR for Aviation Maintenance Technicians!*

SAMPLE


© Aviation Supplies & Academics, Inc.

# FAR Contents

**Federal Aviation Regulations (from Titles 14 and 49 Code of Federal Regulations)**


| | | |
|---|---|---|
| **Part 1** | Definitions and Abbreviations | 3 |
| **Part 5** | Safety Management Systems | 17 |
| **Part 43** | Maintenance, Preventive Maintenance, Rebuilding, and Alteration | 25 |
| **Part 48** | Registration and Marking Requirements for Small Unmanned Aircraft | 41 |
| **Part 61** | Certification: Pilots, Flight Instructors, and Ground Instructors | 45 |
| **Part 67** | Medical Standards and Certification | 163 |
| **Part 68** | Operating Certain Small Aircraft Without a Medical Certificate | 175 |
| **Part 71** | Airspace, Air Traffic Service Routes, and Reporting Points | 179 |
| **Part 73** | Special Use Airspace | 183 |
| **Part 89** | Remote Identification of Unmanned Aircraft | 185 |
| **Part 91** | General Operating and Flight Rules | 197 |
| **Part 97** | Standard Instrument Procedures | 339 |
| **Part 103** | Ultralight Vehicles | 343 |
| **Part 105** | Parachute Operations | 345 |
| **Part 107** | Small Unmanned Aircraft Systems | 351 |
| **Part 110** | General Requirements | 365 |
| **Part 119** | Certification: Air Carriers and Commercial Operators | 369 |
| **Part 136** | Commercial Air Tours and National Parks Air Tour Management | 385 |
| **Part 137** | Agricultural Aircraft Operations | 393 |
| **Part 141** | Pilot Schools | 401 |
| **Part 142** | Training Centers | 449 |
| **49 CFR** | NTSB 830 Accident Reporting • TSA 1552 Flight Training Security Program | 461 |





SAMPLE

# PART 61

## CERTIFICATION: PILOTS, FLIGHT INSTRUCTORS, AND GROUND INSTRUCTORS

SPECIAL FEDERAL AVIATION REGULATIONS SFAR No. 73

### Subpart A—General


Sec.
***61.1 Applicability and definitions.**
61.2 Exercise of Privilege.
***61.3 Requirement for certificates, ratings, privileges, and authorizations.**
61.4 Qualification and approval of flight simulators and flight training devices.
61.5 Certificates and ratings issued under this part.
61.7 Obsolete certificates and ratings.
61.8 Inapplicability of unmanned aircraft operations.
***61.9 Inapplicability of simplified flight controls aircraft experience credit.**
61.11 Expired pilot certificates and reissuance.
61.13 Issuance of airman certificates, ratings, and authorizations.
***61.14 Incorporation by Reference.**
61.15 Offenses involving alcohol or drugs.
61.16 Refusal to submit to an alcohol test or to furnish test results.
61.17 Temporary certificate.
61.18 [Reserved]
61.19 Duration of pilot and instructor certificates and privileges.
61.21 Duration of a Category II and a Category III pilot authorization (for other than Part 121 and Part 135 use).
***61.23 Medical certificates: Requirement and duration.**
61.25 Change of name.
61.27 Voluntary surrender or exchange of certificate.
61.29 Replacement of a lost or destroyed airman or medical certificate or knowledge test report.
***61.31 Type rating requirements, additional training, and authorization requirements.**
61.33 Tests: General procedure.
61.35 Knowledge test: Prerequisites and passing grades.
61.37 Knowledge tests: Cheating or other unauthorized conduct.
61.39 Prerequisites for practical tests.
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.
61.41 Flight training received from flight instructors not certificated by the FAA.
61.43 Practical tests: General procedures.
***61.45 Practical tests: Required aircraft and equipment.**
61.47 Status and responsibilities of an examiner who is authorized by the Administrator to conduct practical tests.
61.49 Retesting after failure.
61.51 Pilot logbooks.
61.52 Use of aeronautical experience obtained in ultralight vehicles.
61.53 Prohibition on operations during medical deficiency.
61.55 Second-in-command qualifications.
61.56 Flight review.
61.57 Recent flight experience: Pilot in command.
61.58 Pilot-in-command proficiency check: Operation of an aircraft that requires more than one pilot flight crewmember or is turbojet-powered.
***61.59 [Reserved]**
61.60 Change of address.


### Subpart B—Aircraft Ratings and Pilot Authorizations


61.61 Applicability.
61.63 Additional aircraft ratings (other than for ratings at the airline transport pilot certification level).
61.64 Use of a flight simulator and flight training device.
61.65 Instrument rating requirements.
61.66 Enhanced flight vision system pilot requirements.
61.67 Category II pilot authorization requirements.
61.68 Category III pilot authorization requirements.
61.69 Glider and unpowered ultralight vehicle towing: Experience and training requirements.
61.71 Graduates of an approved training program other than under this part: Special rules.
61.73 Military pilots or former military pilots: Special rules.
61.75 Private pilot certificate issued on the basis of a foreign pilot license.
61.77 Special purpose pilot authorization: Operation of a civil aircraft of the United States and leased by a non-U.S. citizen.




SAMPLE

**Subpart C—Student Pilots**

61.81 Applicability.
61.83 Eligibility requirements for student pilots.
61.85 Application.
61.87 Solo requirements for student pilots.
***61.89 General limitations.**
61.91 [Reserved]
61.93 Solo cross-country flight requirements.
61.94 Student pilot seeking a sport pilot certificate or a recreational pilot certificate: Operations at airports within, and in airspace located within, Class B, C, and D airspace, or at airports with an operational control tower in other airspace.
61.95 Operations in Class B airspace and at airports located within Class B airspace.

**Subpart D—Recreational Pilots**

61.96 Applicability and eligibility requirements: General.
61.97 Aeronautical knowledge.
61.98 Flight proficiency.
61.99 Aeronautical experience.
61.100 Pilots based on small islands.
61.101 Recreational pilot privileges and limitations.

**Subpart E—Private Pilots**

61.102 Applicability.
61.103 Eligibility requirements: General.
61.105 Aeronautical knowledge.
61.107 Flight proficiency.
61.109 Aeronautical experience.
61.110 Night flying exceptions.
61.111 Cross-country flights: Pilots based on small islands.
***61.113 Private pilot privileges and limitations: Pilot in command.**
61.115 Balloon rating: Limitations.
61.117 Private pilot privileges and limitations: Second in command of aircraft requiring more than one pilot.
61.118 – 61.120 [Reserved]

**Subpart F—Commercial Pilots**

61.121 Applicability.
61.123 Eligibility requirements: General.
61.125 Aeronautical knowledge.
61.127 Flight proficiency.
61.129 Aeronautical experience.
61.131 Exceptions to the night flying requirements.
61.133 Commercial pilot privileges and limitations.
61.135 – 61.141 [Reserved]

**Subpart G—Airline Transport Pilots**

61.151 Applicability.
61.153 Eligibility requirements: General.
61.155 Aeronautical knowledge.
61.156 Training requirements: Airplane category—multiengine class or multiengine airplane type rating concurrently with an airline transport pilot certificate.
61.157 Flight proficiency.
61.158 [Reserved]
61.159 Aeronautical experience: Airplane category rating.
61.160 Aeronautical experience—airplane category restricted privileges.
61.161 Aeronautical experience: Rotorcraft category and helicopter class rating.
61.163 Aeronautical experience: Powered-lift category rating.
61.165 Additional aircraft category and class ratings.
61.167 Airline transport pilot privileges and limitations.
61.169 Letters of authorization for institutions of higher education.
61.170 – 61.171 [Reserved]

**Subpart H—Flight Instructors Other than Flight Instructors With a Sport Pilot Rating**

61.181 Applicability.
61.183 Eligibility requirements.
61.185 Aeronautical knowledge.
61.187 Flight proficiency.
61.189 Flight instructor records.
61.191 Additional flight instructor ratings.
61.193 Flight instructor privileges.
***61.195 Flight instructor limitations and qualifications.**
61.197 Recent experience requirements for flight instructor certification.
61.199 Reinstatement of flight instructor privileges.
61.201 [Reserved]

**Subpart I—Ground Instructors**

61.211 Applicability.
61.213 Eligibility requirements.
61.215 Ground instructor privileges.
61.217 Recent experience requirements.

**Subpart J—Sport Pilots**

61.301 What is the purpose of this subpart and to whom does it apply?
***61.303 If I want to operate an aircraft that satisfies the limitations identified in §61.316, what operating limits and endorsement requirements in this subpart must I comply with?**


SAMPLE

 © Aviation Supplies & Academics, Inc.

***61.305 What are the age and language requirements for a sport pilot certificate?**
***61.307 What tests do I have to take to obtain a sport pilot certificate?**
61.309 What aeronautical knowledge must I have to apply for a sport pilot certificate?
***61.311 What flight proficiency requirements must I meet to apply for a sport pilot certificate?**
***61.313 What aeronautical experience must I have to apply for a sport pilot certificate?**
***61.315 What are the privileges and limits of my sport pilot certificate?**
***61.316 What are the performance limits and design requirements for the aircraft that a sport pilot may operate?**
***61.317 Is my sport pilot certificate issued with aircraft category and class ratings?**
61.319 [Reserved]
***61.321 How do I obtain privileges to operate an additional category or class of aircraft?**
61.323 [Reserved]
***61.325 How do I obtain privileges to operate an aircraft at an airport within, or in airspace within, Class B, C, and D airspace, or in other airspace with an airport having an operational control tower?**
***61.327 Are there specific endorsement requirements to operate an aircraft based on $V_H$?**
***61.329 How do I obtain privileges to operate an aircraft at night?**
***61.331 How do I obtain privileges to operate an aircraft with retractable landing gear or an airplane with a manual controllable pitch propeller?**

**Subpart K—**
**Flight Instructors With a Sport Pilot Rating**

61.401 What is the purpose of this subpart?
***61.403 What are the age, language, and pilot certificate requirements for a flight instructor certificate with a sport pilot rating?**
61.405 What tests do I have to take to obtain a flight instructor certificate with a sport pilot rating?
61.407 What aeronautical knowledge must I have to apply for a flight instructor certificate with a sport pilot rating?
***61.409 What flight proficiency requirements must I meet to apply for a flight instructor certificate with a sport pilot rating?**
***61.411 What aeronautical experience must I have to apply for a flight instructor certificate with a sport pilot rating?**
***61.412 Do I need additional training to provide instruction on control and maneuvering an airplane solely by reference to the instruments in an aircraft based on $V_H$?**
***61.413 What are the privileges of my flight instructor certificate with a sport pilot rating?**
***61.415 What are the limits of a flight instructor certificate with a sport pilot rating?**
***61.417 Will my flight instructor certificate with a sport pilot rating list aircraft category and class ratings?**
***61.419 How do I obtain privileges to provide training in an additional category or class of aircraft?**
61.421 May I give myself an endorsement?
***61.423 What are the recordkeeping requirements for a flight instructor with a sport pilot rating?**
61.425 How do I establish recent experience for my flight instructor certificate with a sport pilot rating?
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?
***61.429 May I exercise the privileges of a flight instructor certificate with a sport pilot rating if I hold a flight instructor certificate with another rating?**

APPENDICES TO PART 61

***Appendix A—Airman Certification Standards and Practical Test Standards**

**Authority:** 49 U.S.C. 106(f), 40113, 44701–44703, 44707, 44709–44711, 44729, 44903, 45102–45103, 45301–45302.

**Source:** Docket No. 25910, 62 FR 16298, April 4, 1997, unless otherwise noted.



SAMPLE

SPECIAL FEDERAL AVIATION REGULATIONS

## SFAR No. 73

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

*Sections*

1. Applicability.
2. Required training, aeronautical experience, endorsements, and flight review.
3. Expiration date.

**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

 © Aviation Supplies & Academics, Inc.

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;



© Aviation Supplies & Academics, Inc.

(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.

[Docket No. 25910, 62 FR 16298, April 4, 1997, as amended by SFAR 73–1, 63 FR 666, Jan. 7, 1998; 68 FR 43, Jan. 2, 2003; Amdt. 61–120, 73 FR 17246, April 1, 2008; Amdt. SFAR 73–2, 74 FR 25650, May 29, 2009; Amdt. 61–154, 89 FR 59608, July 23, 2024]

# Subpart A—General

## §61.1 Applicability and definitions.

**(a)** Except as provided in parts 107 and 194 of this chapter, this part prescribes:

(1) The requirements for issuing pilot, flight instructor, and ground instructor certificates and ratings; the conditions under which those certificates and ratings are necessary; and the privileges and limitations of those certificates and ratings.

(2) The requirements for issuing pilot, flight instructor, and ground instructor authorizations; the conditions under which those authorizations are necessary; and the privileges and limitations of those authorizations.

(3) The requirements for issuing pilot, flight instructor, and ground instructor certificates and ratings for persons who have taken courses approved by the Administrator under other parts of this chapter.

**(b)** For the purpose of this part:

*Accredited* has the same meaning as defined by the Department of Education in 34 CFR 600.2.

*Aeronautical experience* means pilot time obtained in an aircraft, flight simulator, or flight training device for meeting the appropriate training and flight time requirements for an airman certificate, rating, flight review, or recency of flight experience requirements of this part.

*Authorized instructor* means—

(i) A person who holds a ground instructor certificate issued under part 61 of this chapter and is in compliance with §61.217, when conducting ground training in accordance with the privileges and limitations of his or her ground instructor certificate;

(ii) A person who holds a flight instructor certificate issued under part 61 of this chapter and is in compliance with §61.197, when conducting ground training or flight training in accordance with the privileges and limitations of his or her flight instructor certificate; or

(iii) A person authorized by the Administrator to provide ground training or flight training under part 61, 121, 135, or 142 of this chapter when conducting ground training or flight training in accordance with that authority.

*Aviation training device* means a training device, other than a full flight simulator or flight training device, that has been evaluated, qualified, and approved by the Administrator.

*Complex airplane* means an airplane that has a retractable landing gear, flaps, and a controllable pitch propeller, including airplanes equipped with an engine control system consisting of a digital computer and associated accessories for controlling the engine and propeller, such as a full authority digital engine control; or, in the case of a seaplane, flaps and a controllable pitch propeller, including seaplanes equipped with an engine control system consisting of a digital computer and associated accessories for controlling the engine and propeller, such as a full authority digital engine control.

*Cross-country time* means—

(i) Except as provided in paragraphs (ii) through (vii) of this definition, time acquired during flight—

(A) Conducted by a person who holds a pilot certificate;

(B) Conducted in an aircraft;

(C) That includes a landing at a point other than the point of departure; and


© Aviation Supplies & Academics, Inc.

(D) That involves the use of dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems to navigate to the landing point.

(ii) For the purpose of meeting the aeronautical experience requirements (except for a rotorcraft category rating), for a private pilot certificate (except for a powered parachute category rating), a commercial pilot certificate, or an instrument rating, or for the purpose of exercising recreational pilot privileges (except in a rotorcraft) under §61.101(c), time acquired during a flight—

(A) Conducted in an appropriate aircraft;

(B) That includes a point of landing that was at least a straight-line distance of more than 50 nautical miles from the original point of departure; and

(C) That involves the use of dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems to navigate to the landing point.

(iii) For the purpose of meeting the aeronautical experience requirements for a sport pilot certificate (except for powered parachute privileges), time acquired during a flight conducted in an appropriate aircraft that—

(A) Includes a point of landing at least a straight line distance of more than 25 nautical miles from the original point of departure; and

(B) Involves, as applicable, the use of dead reckoning; pilotage; electronic navigation aids; radio aids; or other navigation systems to navigate to the landing point.

(iv) For the purpose of meeting the aeronautical experience requirements for a sport pilot certificate with powered parachute privileges or a private pilot certificate with a powered parachute category rating, time acquired during a flight conducted in an appropriate aircraft that—

(A) Includes a point of landing at least a straight line distance of more than 15 nautical miles from the original point of departure; and

(B) Involves, as applicable, the use of dead reckoning; pilotage; electronic navigation aids; radio aids; or other navigation systems to navigate to the landing point.

(v) For the purpose of meeting the aeronautical experience requirements for any pilot certificate with a rotorcraft category rating or an instrument-helicopter rating, or for the purpose of exercising recreational pilot privileges, in a rotorcraft, under §61.101(c), time acquired during a flight—

(A) Conducted in an appropriate aircraft;

(B) That includes a point of landing that was at least a straight-line distance of more than 25 nautical miles from the original point of departure; and

(C) That involves the use of dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems to navigate to the landing point.

(vi) For the purpose of meeting the aeronautical experience requirements for an airline transport pilot certificate (except with a rotorcraft category rating), time acquired during a flight—

(A) Conducted in an appropriate aircraft;

(B) That is at least a straight-line distance of more than 50 nautical miles from the original point of departure; and

(C) That involves the use of dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems.

(vii) For a military pilot who qualifies for a commercial pilot certificate (except with a rotorcraft category rating) under §61.73 of this part, time acquired during a flight—

(A) Conducted in an appropriate aircraft;

(B) That is at least a straight-line distance of more than 50 nautical miles from the original point of departure; and

(C) That involves the use of dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems.

*Examiner* means any person who is authorized by the Administrator to conduct a pilot proficiency test or a practical test for an airman certificate or rating issued under this part, or a person who is authorized to conduct a knowledge test under this part.

*Flight training* means that training, other than ground training, received from an authorized instructor in flight in an aircraft.

*Ground training* means that training, other than flight training, received from an authorized instructor.

*Institution of higher education* has the same meaning as defined by the Department of Education in 34 CFR 600.4.

*Instrument approach* means an approach procedure defined in part 97 of this chapter.

*Instrument training* means that time in which instrument training is received from an authorized instructor under actual or simulated instrument conditions.

*Knowledge test* means a test on the aeronautical knowledge areas required for an airman certificate or rating that can be administered in written form or by a computer.

*Nationally recognized accrediting agency* has the same meaning as defined by the Department of Education in 34 CFR 600.2.

*Night vision goggles* means an appliance worn by a pilot that enhances the pilot's ability to maintain visual surface reference at night.

*Night vision goggle operation* means the portion of a flight that occurs during the time period from 1 hour after sunset to 1 hour before sunrise where the pilot maintains visual surface reference using night vision goggles in an aircraft that is approved for such an operation.



© Aviation Supplies & Academics, Inc.

*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.

*Pilot time* means that time in which a person—

(i) Serves as a required pilot flight crewmember;

(ii) Receives training from an authorized instructor in an aircraft, full flight simulator, flight training device, or aviation training device;

(iii) Gives training as an authorized instructor in an aircraft, full flight simulator, flight training device, or aviation training device; or

(iv) 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.

*Practical test* means a test on the areas of operations for an airman certificate, rating, or authorization that is conducted by having the applicant respond to questions and demonstrate maneuvers in flight, in a flight simulator, or in a flight training device.

*Set of aircraft* means aircraft that share similar performance characteristics, such as similar airspeed and altitude operating envelopes, similar handling characteristics, and the same number and type of propulsion systems.

*Student pilot seeking a sport pilot certificate* means a person who has received an endorsement—

(i) To exercise student pilot privileges from a certificated flight instructor with a sport pilot rating; or

(ii) That includes a limitation for the operation of an aircraft specified in §61.89(c) issued by a certificated flight instructor with other than a sport pilot rating.

*Technically advanced airplane (TAA)* means an airplane equipped with an electronically advanced avionics system.

*Training time* means training received—

(i) In flight from an authorized instructor;

(ii) On the ground from an authorized instructor; or

(iii) In a flight simulator or flight training device from an authorized instructor.

[Docket No. 25910, 62 FR 16298, April 4, 1997; Amdt. 61–103, 62 FR 40893, July 30, 1997 as amended by Amdt. 61–110, 69 FR 44864, July 27, 2004; Amdt. 61–124, 74 FR 42546, Aug. 21, 2009; Amdt. 61–128, 76 FR 54105, Aug. 31, 2011; Amdt. 61–130, 78 FR 42372, July 15, 2013; Amdt. 61–137, 81 FR 42208, June 28, 2016; Amdt. 61–142, 83 FR 30276, June 27, 2018; Amdt. 61–156, 89 FR 80339, Oct. 2, 2024; Amdt. 61–157, 89 FR 92483, Nov. 21, 2024; Docket No. FAA–2023–1377, Amdt. 61–159, 90 FR 35218, July 24, 2025]

## §61.2 Exercise of Privilege.

**(a)** ***Validity.*** No person may:

(1) Exercise privileges of a certificate, rating, endorsement, or authorization issued under this part if the certificate, rating or authorization is surrendered, suspended, revoked or expired.

(2) Exercise privileges of a flight instructor certificate if that flight instructor certificate is surrendered, suspended, revoked or expired.

(3) Exercise privileges of a foreign pilot certificate to operate an aircraft of foreign registry under §61.3(b) if the certificate is surrendered, suspended, revoked or expired.

(4) Exercise privileges of a pilot certificate issued under §61.75, or an authorization issued under §61.77, if the foreign pilot certificate relied upon for the issuance of the U.S. pilot certificate or authorization is surrendered, suspended, revoked or expired.

(5) Exercise privileges of a medical certificate issued under part 67 to meet any requirements of part 61 if the medical certificate is surrendered, suspended, revoked or expired according to the duration standards set forth in §61.23(d).

(6) Use an official government issued driver's license to meet any requirements of part 61 related to holding that driver's license, if the driver's license is surrendered, suspended, revoked or expired.

**(b)** ***Currency.*** No person may:

(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.

[Docket No. FAA–2006–26661, 74 FR 42546, Aug. 21, 2009; Amdt. 61–155, 89 FR 80049, Oct. 1, 2024]

## §61.3 Requirement for certificates, ratings, privileges, and authorizations.

**(a)** ***Required pilot certificate for operating a civil aircraft of the United States.*** No person may serve as a required pilot flight crewmember of a civil aircraft of the United States, unless that person:

(1) Has in the person's physical possession or readily accessible in the aircraft when exercising the privileges of that pilot certificate or authorization—

(i) A pilot certificate issued under this part and in accordance with §61.19;


© Aviation Supplies & Academics, Inc.

# AIM Contents

**Aeronautical Information Manual**
**Official Guide to Basic Flight Information and ATC Procedures**
U.S. Department of Transportation • Federal Aviation Administration


General Information ..... 474
Explanation of Major Changes ..... 477
Detailed AIM Table of Contents ..... 479

**Chapter 1** Air Navigation ..... 489

**Chapter 2** Aeronautical Lighting and Other Airport Visual Aids ..... 531

**Chapter 3** Airspace ..... 569

**Chapter 4** Air Traffic Control ..... 593

**Chapter 5** Air Traffic Procedures ..... 681

**Chapter 6** Emergency Procedures ..... 813

**Chapter 7** Safety of Flight ..... 835

**Chapter 8** Medical Facts for Pilots ..... 929

**Chapter 9** Aeronautical Charts and Related Publications ..... 937

**Chapter 10** Helicopter Operations ..... 949

**Chapter 11** Unmanned Aircraft Systems (UAS) ..... 971

**Appendices** ..... 995
- Appendix 1: Bird/Other Wildlife Strike Report ..... 995
- Appendix 2: Volcanic Activity Reporting Form (VAR) ..... 996
- Appendix 3: Abbreviations/Acronyms ..... 997
- Appendix 4: FAA Form 7233-4—International Flight Plan ..... 1003
- Appendix 5: FAA Form 7233-1—Flight Plan ..... 1021

**Pilot/Controller Glossary** ..... 1023




SAMPLE

## Federal Aviation Administration (FAA)

The Federal Aviation Administration is responsible for ensuring the safe, efficient, and secure use of the Nation's airspace, by military as well as civil aviation, for promoting safety in air commerce, for encouraging and developing civil aeronautics, including new aviation technology, and for supporting the requirements of national defense.

The activities required to carry out these responsibilities include: safety regulations; airspace management and the establishment, operation, and maintenance of a civil–military common system of air traffic control (ATC) and navigation facilities; research and development in support of the fostering of a national system of airports, promulgation of standards and specifications for civil airports, and administration of Federal grants-in-aid for developing public airports; various joint and cooperative activities with the Department of Defense; and technical assistance (under State Department auspices) to other countries.

## Aeronautical Information Manual (AIM)

## Basic Flight Information and ATC Procedures

This manual is designed to provide the aviation community with basic flight information and ATC procedures for use in the National Airspace System (NAS) of the United States. An international version called the Aeronautical Information Publication contains parallel information, as well as specific information on the international airports for use by the international community.

This manual contains the fundamentals required in order to fly in the United States NAS. It also contains items of interest to pilots concerning health and medical facts, factors affecting flight safety, a pilot/controller glossary of terms used in the ATC System, and information on safety, accident, and hazard reporting.

This manual is complemented by other operational publications which are available via separate subscriptions. These publications are:

The Chart Supplement U.S., the Chart Supplement Alaska, and the Chart Supplement Pacific—These publications contain information on airports, communications, navigation aids, instrument landing systems, VOR receiver check points, preferred routes, Flight Service Station/Weather Service telephone numbers, Air Route Traffic Control Center (ARTCC) frequencies, part-time surface areas, and various other pertinent special notices essential to air navigation. These publications are available through a network of FAA approved print providers. A listing of products, dates of latest editions, and print providers is available on the Aeronautical Information Services (AIS) website at: http://www.faa.gov/air_traffic/flight_info/aeronav/print_providers/.

| Publication Schedule | | |
|---|---|---|
| **Basic or Change** | **Cutoff Date for Completion** | **Effective Date of Publication** |
| Basic Manual | 9/5/24 | 2/20/25 |
| Change 1 | 2/20/25 | 8/7/25 |
| Change 2 | 8/7/25 | 1/22/26 |
| Change 3 | 1/22/26 | 7/9/26 |
| Basic Manual | 7/9/26 | 12/24/26 |
| Change 1 | 12/24/26 | 6/10/27 |
| Change 2 | 6/10/27 | 11/25/27 |
| Change 3 | 11/25/27 | 5/11/28 |

## Flight Information Publication Policy

The following is in essence, the statement issued by the FAA Administrator and published in the December 10, 1964, issue of the Federal Register, concerning the FAA policy as pertaining to the type of information that will be published as NOTAMs and in the *Aeronautical Information Manual*.

**a.** It is a pilot's inherent responsibility to be alert at all times for and in anticipation of all circumstances, situations, and conditions affecting the safe operation of the aircraft. For example, a pilot should expect to find air traffic at any time or place. At or near both civil and military airports and in the vicinity of known training areas, a pilot should expect concentrated air traffic and realize concentrations of air traffic are not limited to these places.

**b.** It is the general practice of the agency to advertise by NOTAM or other flight information publications such information it may deem appropriate; information which the agency may from time to time make available to pilots is solely for the purpose of assisting them in executing their regulatory responsibilities. Such information serves the aviation community as a whole and not pilots individually.

**c.** The fact that the agency under one particular situation or another may or may not furnish information does not serve as a precedent of the agency's responsibility to the aviation community; neither does it give assurance that other information of the same or similar nature will be advertised, nor, does it guarantee that any and all information known to the agency will be advertised.

**d.** This publication, while not regulatory, provides information which reflects examples of operating techniques and procedures which may be requirements in other federal publications or regulations. It is made available solely to assist pilots in executing their responsibilities required by other publications.


© Aviation Supplies & Academics, Inc.

Consistent with the foregoing, it is the policy of the Federal Aviation Administration to furnish information only when, in the opinion of the agency, a unique situation should be advertised and not to furnish routine information such as concentrations of air traffic, either civil or military. The *Aeronautical Information Manual* will not contain informative items concerning everyday circumstances that pilots should, either by good practices or regulation, expect to encounter or avoid.

## Aeronautical Information Manual (AIM)

## Code of Federal Regulations and Advisory Circulars

Code of Federal Regulations—The FAA publishes the Code of Federal Regulations (CFRs) to make readily available to the aviation community the regulatory requirements placed upon them. These regulations are sold as individual parts by the Superintendent of Documents.

The more frequently amended parts are sold on subscription service with subscribers receiving changes automatically as issued. Less active parts are sold on a single-sale basis. Changes to single-sale parts will be sold separately as issued. Information concerning these changes will be furnished by the FAA through its Status of Federal Aviation Regulations, AC 00-44.

Advisory Circulars—The FAA issues Advisory Circulars (ACs) to inform the aviation public in a systematic way of nonregulatory material. Unless incorporated into a regulation by reference, the contents of an advisory circular are not binding on the public. Advisory Circulars are issued in a numbered subject system corresponding to the subject areas of the Code of Federal Regulations (CFRs) (Title 14, Chapter 1, FAA).

***Note:*** *Current AC information can be found at: https://www.faa.gov/regulations_policies/advisory_circulars/.*

External References—All references to Advisory Circulars and other FAA publications in the *Aeronautical Information Manual* include the FAA Advisory Circular or Order identification numbers (when available). However, due to varied publication dates, the basic publication letter is not included.

***Example***
*FAA Order JO 7110.65X, Air Traffic Control, is referenced as FAA Order JO 7110.65.*

SAMPLE

## Subscription Information

This manual is available by its effective date on the FAA's Air Traffic Plans and Publications website at https://www.faa.gov/air_traffic/publications/.

This manual is distributed electronically to all who subscribe to receive email notifications through the FAA's website. All organizations are responsible for viewing, downloading, and subscribing to receive email notifications when changes occur to this manual. Subscriptions to air traffic directives can be made through the Air Traffic Plans and Publications website at https://www.faa.gov/air_traffic/publications/ or directly via the following link: https://public.govdelivery.com/accounts/USAFAA/subscriber/new?topic_id=USAFAA_39.

---

## Comments/Corrections

The office of primary responsibility (OPR) for this manual is:

FAA Headquarters, Mission Support Services
Policy Directorate (AJV-P)
600 Independence Avenue SW
Washington, DC 20597

Proposed changes must be submitted electronically, using the following format, to the Policy Directorate Correspondence Mailbox at 9-AJV-P-HQ-Correspondence@faa.gov.

**Notice to Editor**

The following comments/corrections are submitted concerning the information contained in:

Paragraph number _____

Title _____

Page _____

Dated _____

Name _____

Street _____

City _____ State _____ Zip _____

SAMPLE


© Aviation Supplies & Academics, Inc.

# Explanation of Major Changes

*Change 1 effective August 7, 2025 and Change 2 effective January 22, 2026 (to Basic Manual effective February 20, 2025).*

**2–3–10. Direction Signs**
**2–3–11. Destination Signs**
This change revises paragraph 2-3-11, Destination Signs. This change coincides with an update of AC 150/5340-18 thus establishing an authorized source that supports FAA adding standardized chart labels for parking areas to airport diagrams. The rewrite of paragraph 2-3-11 separates content for inbound destination signs from content for outbound destination. This DCP also revises and recaptions Figure 2-3-38 to depict more examples of inbound destination sign legends, and recaptions Figure 2-3-39 to reflect an outbound destination sign example, and moves them to paragraph 2-3-11.

**3–5–5. Published VFR Routes**
This change adds a link to the VFR Helicopter route website.

**4–1–21. Airport Reservation Operations and Special Traffic Management Programs**
This change adds guidance regarding Prior Permission Required (PPR) when conditions exist that may affect operations at an airport.

**4–3–2. Airports With an Operating Control Tower**
This change realigns the AIM definition and graphic depiction of upwind leg at towered airports with current ATC use and expectation. ATC usage of upwind leg is an extension of departure. The AIM's current definition of upwind has led to confusion among pilots and controllers. The new proposed graphic depiction of upwind in Figure 4-3-1 as well as the definition in 4-3-2c aligns with common usage at towered airports. Additionally, the order of traffic pattern component definitions was reconfigured to align their definitions in a more logical sequence beginning with departure.

**4–7–1. Introduction and General Policies**
**4-7-2. Accomodating Non-RNP 10 Aircraft**
**4-7-5. Flight Plan Requirements**
Editorial changes were made to update Flight Information Region/Upper Control Area (FIR/UTA) and Control Area (CTA), to CTA/FIR.

**5–1–1. Preflight Preparation**
**7–1–2. FAA Weather Services**
This change adds a new contact telephone number for flight service stations in Alaska: 1-833-AK-BRIEF.

**5–2–9. Instrument Departure Procedures (DP)—Obstacle Departure Procedures (ODP), Standard Instrument Departures (SID), and Diverse Vector Areas (DVA)**
This change incorporates changes to instrument departure criteria for minimums and obstacle notes. Language is added to identify the changes to departure charts and pilot/controller responsibilities.

**5–3–1. ARTCC Communications**
This change adds new uplink and downlink messages sets in Chapter 5 of the AIM.

**5–3–1. ARTCC Communications**
**Appendix 3. Abbreviations/Acronyms**
This change updates references to "Initial Services" in the body of the paragraph and updates the message set tables to reflect the currently available CPDLC messages in the domestic operation. Tables 5-3-1 through 5-3-19 was added to and updated to extend to Table 5-3-23. New abbreviations were added to Appendix 3.

**5–4–5. Instrument Approach Procedure (IAP) Charts**
This change updates information regarding instrument approach altimeter setting sources to include references to airport identifiers.

**5–4–6. Approach Clearance**
**5–4–7. Instrument Approach Procedures**
This change realigns cleared approach procedures, which was inadvertently added to paragraph 5-4-7, to paragraph 5-4-6. It also addresses arrival to approach connectivity procedures to assure pilots recognize and implement the connection of arrivals (STARs) with an instrument approach procedure at the initial approach fix where they exist.

**5–4–13. Simultaneous Approaches to Parallel Runways**
This change addresses curved and angled paths that may be used to intercept the final approach course and emphasizes the importance of adhering to the approach procedure. Also, a correction is being made to the figure that corresponds to the textual description.

**5–4–14. Simultaneous Dependent Approaches**
**5–4–16. Simultaneous Close Parallel PRM Approaches and Simultaneous Offset Instrument Approaches (SOIA)**
This change removes erroneous notes stating KSFO uses SOIA procedures.

© Aviation Supplies & Academics, Inc.

**5–4–20. Approach and Landing Minimums**
This change clarifies pilot guidance to reinforce compliance with 14 CFR 91.126, consistent with Office of Chief Counsel interpretations.

**5–4–22. Use of Enhanced Flight Vision Systems (EFVS) on Instrument Aproaches**
This updates the EFVS section of the AIM to note this change, as well as, to call attention to the AFS 410 EFVS website where each LED ALS is noted by runway end.

**7–1–1. National Weather Service Aviation Weather Service Program**
**7–1–3. Use of Aviation Weather Products**
**7–1–9. Flight Information Services (FIS)**
This change removes references to Advisory Circular 00-45, Aviation Weather Services, and replaces with FAA-H-8083-28, Aviation Weather Handbook. Making these changes will correct the AIM and bring it in alignment with other FAA documents and publications.

**7–1–7. Categorical Outlooks**
This change amends the paragraph to include reported weather data as to how the categorical ceiling and visibility terms are used.

**7–2–3. Altimeter Errors**
This change assigns the waiver authority for 14 CFR §91.144 to Air Traffic Organization (ATO) Service Center Directors in their areas of jurisdiction, since AFS waiver procedures were incompatible with the short life of a high barometric pressure NOTAM.

**7–4–9. Air Traffic Wake Turbulence Separations**
**7–4–10. Development and New Capabilities**
This change aligns the Aeronautical Information Manual (AIM) with the FAA effort to recategorize the existing fleet of aircraft and modify the associated wake turbulence separation minima. All prior references to Wake RECAT are removed due to this effort.

**7–6–18. Automatic Landing Operations**
This change adds guidance advising operators conducting automatic landing operations to first determine that the flight control guidance system being used is compatible with the instrument approach procedure and runway being used.

**7–7–4. Unidentified Flying Object (UFO) Reports**
This change retitles 7-7-4 to "Unidentified Anomalous Phenomena (UAP) Reports," deletes the reference to non-governmental UFO data collection entities, and adds a link to the AARO website for reporting UAP activity.

**9–1–3. Safety Alerts, Charting Notices and Data Product Notices**
This change adds descriptions of FAA published Safety Alerts (SA), Charting Notices (CN), and Data Product Notices (DPN), and provides a hyperlink to the FAA website containing these notices.

**11–4–6. Airspace Restrictions to Flight**
This change updates and clarifies the proper balance between state, local and federal (FAA) jurisdiction to regulate aviation. This change also clarifies information related to Temporary Flight Restrictions (TFRs) and provides updated language regarding "No Drone Zones."

**Editorial Changes**
Editorial changes include relocating some subparagraphs in paragraph 5-3-1 to match the corresponding formatting in the Aeronautical Information Publication (AIP); correcting the title of paragraph 7-6-1 to Accident Causal Factors; a universal change replacing all prior references to the term Gulf of Mexico with the term Gulf of America in accordance with Executive Order 14172; a universal change updating the term Notice to Air Missions (NOTAM) to Notice to Airmen (NOTAM); several minor corrections throughout Chapter 7, Section 6; the addition of the word "known" when describing identifying obstacles associated with the Digital Obstacle File (DOF) in paragraph 9-1-4; a universal editorial change to ensure FAA Order JO 7340.2 references are accurate; a universal editorial change to update terms from the National Aeronautical Charting office to FAA's Aeronautical Information Services (AIS) and updating National Flight Data Center (NFDC) for its replacement AIS, the term AeroNav Products is removed for the term AIS; and a correction to verbiage in paragraph 1-1-17.

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

SAMPLE


© Aviation Supplies & Academics, Inc.

## Chapter 1. Air Navigation

**Section 1. Navigation Aids ..... 489**
1–1–1 General
1–1–2 Nondirectional Radio Beacon (NDB)
1–1–3 VHF Omni-Directional Range (VOR)
1–1–4 VOR Receiver Check
1–1–5 Tactical Air Navigation (TACAN)
1–1–6 VHF Omni-Directional Range/Tactical Air Navigation (VORTAC)
1–1–7 Distance Measuring Equipment (DME)
1–1–8 NAVAID Service Volumes
1–1–9 Instrument Landing System (ILS)
1–1–10 Simplified Directional Facility (SDF)
1–1–11 NAVAID Identifier Removal During Maintenance
1–1–12 NAVAIDs with Voice
1–1–13 User Reports Requested on NAVAID Outages
1–1–14 LORAN
1–1–15 Inertial Reference Unit (IRU), Inertial Navigation System (INS), and Attitude Heading Reference System (AHRS)
1–1–16 Doppler Radar
1–1–17 Global Positioning System (GPS)
1–1–18 Wide Area Augmentation System (WAAS)
1–1–19 Ground Based Augmentation System (GBAS) Landing System (GLS)
1–1–20 Precision Approach Systems other than ILS and GLS

**Section 2. Performance-Based Navigation (PBN) and Area Navigation (RNAV) ..... 522**
1–2–1 General
1–2–2 Required Navigation Performance (RNP)
1–2–3 Use of Suitable Area Navigation (RNAV) Systems on Conventional Procedures and Routes
1–2–4 Recognizing, Mitigating, and Adapting to GPS Jamming and/or Spoofing

## Chapter 2. Aeronautical Lighting and Other Airport Visual Aids

**Section 1. Airport Lighting Aids ..... 531**
2–1–1 Approach Light Systems (ALS)
2–1–2 Visual Glideslope Indicators
2–1–3 Runway End Identifier Lights (REIL)
2–1–4 Runway Edge Light Systems
2–1–5 In-Runway Lighting
2–1–6 Runway Status Light (RWSL) System
2–1–7 Control of Lighting Systems
2–1–8 Pilot Control of Airport Lighting
2–1–9 Airport/Heliport Beacons
2–1–10 Taxiway Lights

**Section 2. Air Navigation and Obstruction Lighting ..... 543**
2–2–1 Aeronautical Light Beacons
2–2–2 Code Beacons and Course Lights
2–2–3 Obstruction Lights
2–2–4 LED Lighting Systems

**Section 3. Airport Marking Aids and Signs ..... 545**
2–3–1 General
2–3–2 Airport Pavement Markings
2–3–3 Runway Markings
2–3–4 Taxiway Markings

SAMPLE

2–3–5 Holding Position Markings
2–3–6 Other Markings
2–3–7 Airport Signs
2–3–8 Mandatory Instruction Signs
2–3–9 Location Signs
2–3–10 Direction Signs
2–3–11 Destination Signs
2–3–12 Information Signs
2–3–13 Runway Distance Remaining Signs
2–3–14 Aircraft Arresting Systems
2–3–15 Security Identification Display Area (SIDA)

## Chapter 3. Airspace

**Section 1. General** ..... **569**
3–1–1 General
3–1–2 General Dimensions of Airspace Segments
3–1–3 Hierarchy of Overlapping Airspace Designations
3–1–4 Basic VFR Weather Minimums
3–1–5 VFR Cruising Altitudes and Flight Levels

**Section 2. Controlled Airspace** ..... **571**
3–2–1 General
3–2–2 Class A Airspace
3–2–3 Class B Airspace
3–2–4 Class C Airspace
3–2–5 Class D Airspace
3–2–6 Class E Airspace

**Section 3. Class G Airspace** ..... **580**
3–3–1 General
3–3–2 VFR Requirements
3–3–3 IFR Requirements

**Section 4. Special Use Airspace** ..... **581**
3–4–1 General
3–4–2 Prohibited Areas
3–4–3 Restricted Areas
3–4–4 Warning Areas
3–4–5 Military Operations Areas
3–4–6 Alert Areas
3–4–7 Controlled Firing Areas
3–4–8 National Security Areas
3–4–9 Obtaining Special Use Airspace Status

**Section 5. Other Airspace Areas** ..... **583**
3–5–1 Airport Advisory/Information Services
3–5–2 Military Training Routes
3–5–3 Temporary Flight Restrictions
3–5–4 Parachute Jump Aircraft Operations
3–5–5 Published VFR Routes
3–5–6 Terminal Radar Service Area (TRSA)
3–5–7 Special Air Traffic Rules (SATR) and Special Flight Rules Area (SFRA)
3–5–8 Washington, DC, Special Flight Rules Area (SFRA) including the Flight Restricted Zone (FRZ)
3–5–9 Weather Reconnaissance Area (WRA)
3–5–10 Other Non-Charted Airspace Areas

SAMPLE

 © Aviation Supplies & Academics, Inc.

## Chapter 4. Air Traffic Control

**Section 1. Services Available to Pilots ..... 593**
4–1–1 Air Route Traffic Control Centers
4–1–2 Control Towers
4–1–3 Flight Service Stations
4–1–4 Recording and Monitoring
4–1–5 Communications Release of IFR Aircraft Landing at an Airport Without an Operating Control Tower
4–1–6 Pilot Visits to Air Traffic Facilities
4–1–7 Operation Rain Check
4–1–8 Approach Control Service for VFR Arriving Aircraft
4–1–9 Traffic Advisory Practices at Airports Without Operating Control Towers
4–1–10 IFR Approaches/Ground Vehicle Operations
4–1–11 Designated UNICOM/MULTICOM Frequencies
4–1–12 Use of UNICOM for ATC Purposes
4–1–13 Automatic Terminal Information Service (ATIS)
4–1–14 Automatic Flight Information Service (AFIS)—Alaska FSSs Only
4–1–15 Radar Traffic Information Service
4–1–16 Safety Alert
4–1–17 Radar Assistance to VFR Aircraft
4–1–18 Terminal Radar Services for VFR Aircraft
4–1–19 Tower En Route Control (TEC)
4–1–20 Transponder and ADS-B Out Operation
4–1–21 Airport Reservation Operations and Special Traffic Management Programs
4–1–22 Requests for Waivers and Authorizations from Title 14, Code of Federal Regulations (14 CFR)
4–1–23 Weather Systems Processor

**Section 2. Radio Communications Phraseology and Techniques ..... 610**
4–2–1 General
4–2–2 Radio Technique
4–2–3 Contact Procedures
4–2–4 Aircraft Call Signs
4–2–5 Description of Interchange or Leased Aircraft
4–2–6 Ground Station Call Signs
4–2–7 Phonetic Alphabet
4–2–8 Figures
4–2–9 Altitudes and Flight Levels
4–2–10 Directions
4–2–11 Speeds
4–2–12 Time
4–2–13 Communications with Tower when Aircraft Transmitter or Receiver or Both are Inoperative
4–2–14 Communications for VFR Flights

**Section 3. Airport Operations ..... 617**
4–3–1 General
4–3–2 Airports with an Operating Control Tower
4–3–3 Traffic Patterns
4–3–4 Visual Indicators at Airports Without an Operating Control Tower
4–3–5 Unexpected Maneuvers in the Airport Traffic Pattern
4–3–6 Use of Runways/Declared Distances
4–3–7 Low Level Wind Shear/Microburst Detection Systems
4–3–8 Braking Action Reports and Advisories
4–3–9 Runway Condition Reports
4–3–10 Intersection Takeoffs
4–3–11 Pilot Responsibilities When Conducting Land and Hold Short Operations (LAHSO)
4–3–12 Low Approach
4–3–13 Traffic Control Light Signals

SAMPLE

4–3–14 Communications
4–3–15 Gate Holding Due to Departure Delays
4–3–16 VFR Flights in Terminal Areas
4–3–17 VFR Helicopter Operations at Controlled Airports
4–3–18 Taxiing
4–3–19 Taxi During Low Visibility
4–3–20 Standard Taxi Routes
4–3–21 Exiting the Runway After Landing
4–3–22 Practice Instrument Approaches
4–3–23 Option Approach
4–3–24 Use of Aircraft Lights
4–3–25 Flight Inspection/"Flight Check" Aircraft in Terminal Areas
4–3–26 Hand Signals
4–3–27 Operations at Uncontrolled Airports With Automated Surface Observing System (ASOS)/Automated Weather Observing System (AWOS)

**Section 4. ATC Clearances and Aircraft Separation .....644**
4–4–1 Clearance
4–4–2 Clearance Prefix
4–4–3 Clearance Items
4–4–4 Amended Clearances
4–4–5 Coded Departure Route (CDR)
4–4–6 Special VFR Clearances
4–4–7 Pilot Responsibility upon Clearance Issuance
4–4–8 IFR Clearance VFR-on-Top
4–4–9 VFR/IFR Flights
4–4–10 Adherence to Clearance
4–4–11 IFR Separation Standards
4–4–12 Speed Adjustments
4–4–13 Runway Separation
4–4–14 Visual Separation
4–4–15 Use of Visual Clearing Procedures and Scanning Techniques
4–4–16 Traffic Alert and Collision Avoidance System (TCAS I & II)
4–4–17 Traffic Information Service (TIS)

**Section 5. Surveillance Systems .....655**
4–5–1 Radar
4–5–2 Air Traffic Control Radar Beacon System (ATCRBS)
4–5–3 Surveillance Radar
4–5–4 Precision Approach Radar (PAR)
4–5–5 Airport Surface Detection Equipment (ASDE-X)/Airport Surface Surveillance Capability (ASSC)
4–5–6 Traffic Information Service (TIS)
4–5–7 Automatic Dependent Surveillance–Broadcast (ADS-B) Services
4–5–8 Traffic Information Service–Broadcast (TIS-B)
4–5–9 Flight Information Service–Broadcast (FIS-B)
4–5–10 Automatic Dependent Surveillance–Rebroadcast (ADS-R)

**Section 6. Operational Policy/Procedures for Reduced Vertical Separation Minimum (RVSM) in the Domestic U.S., Alaska, Offshore Airspace and the San Juan FIR.....670**
4–6–1 Applicability and RVSM Mandate (Date/Time and Area)
4–6–2 Flight Level Orientation Scheme
4–6–3 Aircraft and Operator Approval Policy/Procedures, RVSM Monitoring and Databases for Aircraft and Operator Approval
4–6–4 Flight Planning into RVSM Airspace
4–6–5 Pilot RVSM Operating Practices and Procedures
4–6–6 Guidance on Severe Turbulence and Mountain Wave Activity (MWA)
4–6–7 Guidance on Wake Turbulence

SAMPLE

 © Aviation Supplies & Academics, Inc.

4–6–8 Pilot/Controller Phraseology
4–6–9 Contingency Actions: Weather Encounters and Aircraft System Failures that Occur After Entry into RVSM Airspace
4–6–10 Procedures for Accommodation of Non-RVSM Aircraft
4–6–11 Non-RVSM Aircraft Requesting Climb to and Descent from Flight Levels Above RVSM Airspace Without Intermediate Level Off

**Section 7. Operational Policy/Procedures for the Gulf of America 50 NM Lateral Separation Initiative.....678**
4–7–1 Introduction and General Policies
4–7–2 Accommodating Non-RNP 10 Aircraft
4–7–3 Obtaining RNP 10 or RNP 4 Operational Authorization
4–7–4 Authority for Operations with a Single Long-Range Navigation System
4–7–5 Flight Plan Requirements
4–7–6 Contingency Procedures

## Chapter 5. Air Traffic Procedures

**Section 1. Preflight.....681**
5–1–1 Preflight Preparation
5–1–2 Follow IFR Procedures Even When Operating VFR
5–1–3 Notice to Airmen (NOTAM) System
5–1–4 Operational Information System (OIS)
5–1–5 Flight Plan—VFR Flights
5–1–6 Flight Plan—IFR Flights
5–1–7 Flight Plans For Military/DoD Use Only
5–1–8 Flight Plan—Defense VFR (DVFR) Flights
5–1–9 Single Flights Conducted With Both VFR and IFR Flight Plans
5–1–10 IFR Operations to High Altitude Destinations
5–1–11 Flights Outside U.S. Territorial Airspace
5–1–12 Change in Flight Plan
5–1–13 Change in Proposed Departure Time
5–1–14 Closing VFR/DVFR Flight Plans
5–1–15 Canceling IFR Flight Plan
5–1–16 RNAV and RNP Operations
5–1–17 Cold Temperature Operations

**Section 2. Departure Procedures.....697**
5–2–1 Pre-Taxi Clearance Procedures
5–2–2 Automated Pre-Departure Clearance Procedures
5–2–3 IFR Clearances Off Uncontrolled Airports
5–2–4 Taxi Clearance
5–2–5 Line Up and Wait (LUAW)
5–2–6 Abbreviated IFR Departure Clearance (Cleared…as Filed) Procedures
5–2–7 Departure Restrictions, Clearance Void Times, Hold for Release, and Release Times
5–2–8 Departure Control
5–2–9 Instrument Departure Procedures (DP)—Obstacle Departure Procedures (ODP), Standard Instrument Departures (SID), and Diverse Vector Areas (DVA)

**Section 3. En Route Procedures .....709**
5–3–1 ARTCC Communications
5–3–2 Position Reporting
5–3–3 Additional Reports
5–3–4 Airways and Route Systems
5–3–5 Airway or Route Course Changes
5–3–6 Changeover Points (COPs)
5–3–7 Minimum Turning Altitude (MTA)
5–3–8 Holding

SAMPLE

**Section 4. Arrival Procedures** ..... **735**
5–4–1 Standard Terminal Arrival (STAR) Procedures
5–4–2 Local Flow Traffic Management Program
5–4–3 Approach Control
5–4–4 Advance Information on Instrument Approach
5–4–5 Instrument Approach Procedure (IAP) Charts
5–4–6 Approach Clearance
5–4–7 Instrument Approach Procedures
5–4–8 Special Instrument Approach Procedures
5–4–9 Procedure Turn and Hold-in-lieu of Procedure Turn
5–4–10 Timed Approaches from a Holding Fix
5–4–11 Radar Approaches
5–4–12 Radar Monitoring of Instrument Approaches
5–4–13 Simultaneous Approaches to Parallel Runways
5–4–14 Simultaneous Dependent Approaches
5–4–15 Simultaneous Independent ILS/RNAV/GLS Approaches
5–4–16 Simultaneous Close Parallel PRM Approaches and Simultaneous Offset Instrument Approaches (SOIA)
5–4–17 Simultaneous Converging Instrument Approaches
5–4–18 RNP AR (Authorization Required) Instrument Procedures
5–4–19 Side-Step Maneuver
5–4–20 Approach and Landing Minimums
5–4–21 Missed Approach
5–4–22 Use of Enhanced Flight Vision Systems (EFVS) on Instrument Approaches
5–4–23 Visual Approach
5–4–24 Charted Visual Flight Procedure (CVFP)
5–4–25 Contact Approach
5–4–26 Landing Priority
5–4–27 Overhead Approach Maneuver

**Section 5. Pilot/Controller Roles and Responsibilities** ..... **794**
5–5–1 General
5–5–2 Air Traffic Clearance
5–5–3 Contact Approach
5–5–4 Instrument Approach
5–5–5 Missed Approach
5–5–6 Vectors
5–5–7 Safety Alert
5–5–8 See and Avoid
5–5–9 Speed Adjustments
5–5–10 Traffic Advisories (Traffic Information)
5–5–11 Visual Approach
5–5–12 Visual Separation
5–5–13 VFR-on-Top
5–5–14 Instrument Departures
5–5–15 Minimum Fuel Advisory
5–5–16 RNAV and RNP Operations

**Section 6. National Security and Interception Procedures** ..... **801**
5–6–1 National Security
5–6–2 National Security Requirements
5–6–3 Definitions
5–6–4 ADIZ Requirements
5–6–5 Civil Aircraft Operations To or From U.S. Territorial Airspace
5–6–6 Civil Aircraft Operations Within U.S. Territorial Airspace
5–6–7 Civil Aircraft Operations Transiting U.S. Territorial Airspace
5–6–8 Foreign State Aircraft Operations
5–6–9 FAA/TSA Airspace Waivers
5–6–10 TSA Aviation Security Programs

SAMPLE


© Aviation Supplies & Academics, Inc.

5–6–11 FAA Flight Routing Authorizations
5–6–12 Emergency Security Control of Air Traffic (ESCAT)
5–6–13 Interception Procedures
5–6–14 Interception Signals
5–6–15 ADIZ Boundaries and Designated Mountainous Areas
5–6–16 Visual Warning System (VWS)

## Chapter 6. Emergency Procedures

**Section 1. General ..... 813**
6–1–1 Pilot Responsibility and Authority
6–1–2 Emergency Condition—Request Assistance Immediately

**Section 2. Emergency Services Available to Pilots ..... 814**
6–2–1 Radar Service for VFR Aircraft in Difficulty
6–2–2 Transponder Emergency Operation
6–2–3 Intercept and Escort
6–2–4 Emergency Locator Transmitter (ELT)
6–2–5 FAA K-9 Explosives Detection Team Program
6–2–6 Search and Rescue

**Section 3. Distress and Urgency Procedures ..... 824**
6–3–1 Distress and Urgency Communications
6–3–2 Obtaining Emergency Assistance
6–3–3 Ditching Procedures
6–3–4 Special Emergency (Air Piracy)
6–3–5 Fuel Dumping

**Section 4. Two-Way Radio Communications Failure ..... 830**
6–4–1 Two-Way Radio Communications Failure
6–4–2 Transponder Operation During Two-Way Communications Failure
6–4–3 Reestablishing Radio Contact

**Section 5. Aircraft Rescue and Fire Fighting Communications ..... 832**
6–5–1 Discrete Emergency Frequency
6–5–2 Radio Call Signs
6–5–3 ARFF Emergency Hand Signals

## Chapter 7. Safety of Flight

**Section 1. Meteorology ..... 835**
7–1–1 National Weather Service Aviation Weather Service Program
7–1–2 FAA Weather Services
7–1–3 Use of Aviation Weather Products
7–1–4 Graphical Forecasts for Aviation (GFA)
7–1–5 Preflight Briefing
7–1–6 Inflight Aviation Weather Advisories
7–1–7 Categorical Ceiling and Visibility Conditions
7–1–8 Inflight Weather Advisory Broadcasts
7–1–9 Flight Information Services (FIS)
7–1–10 Weather Observing Programs
7–1–11 Weather Radar Services
7–1–12 ATC Inflight Weather Avoidance Assistance
7–1–13 Runway Visual Range (RVR)
7–1–14 Reporting of Cloud Heights
7–1–15 Reporting Prevailing Visibility
7–1–16 Estimating Intensity of Rain and Ice Pellets
7–1–17 Estimating Intensity of Snow or Drizzle (Based on Visibility)
7–1–18 Pilot Weather Reports (PIREPs)
7–1–19 PIREPs Relating to Airframe Icing

SAMPLE

7–1–20 Definitions of Inflight Icing Terms
7–1–21 PIREPs Relating to Turbulence
7–1–22 Wind Shear PIREPs
7–1–23 Clear Air Turbulence (CAT) PIREPs
7–1–24 Microbursts
7–1–25 PIREPs Relating to Volcanic Ash Activity
7–1–26 Thunderstorms
7–1–27 Thunderstorm Flying
7–1–28 Key to Aerodrome Forecast (TAF) and Aviation Routine Weather Report (METAR)
7–1–29 International Civil Aviation Organization (ICAO) Weather Formats

**Section 2. Barometric Altimeter Errors and Setting Procedures .....894**
7–2–1 General
7–2–2 Barometric Pressure Altimeter Errors
7–2–3 Altimeter Errors

**Section 3. Cold Temperature Barometric Altimeter Errors, Setting Procedures and Cold Temperature Airports (CTA).....896**
7–3–1 Effect of Cold Temperature on Barometric Altimeters
7–3–2 Pre-Flight Planning for Cold Temperature Altimeter Errors
7–3–3 Effects of Cold Temperature on Baro-Vertical Navigation (VNAV) Vertical Guidance
7–3–4 Cold Temperature Airports (CTA)
7–3–5 Cold Temperature Airport Procedures
7–3–6 Examples for Calculating Altitude Corrections on CTAs

**Section 4. Wake Turbulence.....902**
7–4–1 General
7–4–2 Vortex Generation
7–4–3 Vortex Strength
7–4–4 Vortex Behavior
7–4–5 Operations Problem Areas
7–4–6 Vortex Avoidance Procedures
7–4–7 Helicopters
7–4–8 Pilot Responsibility
7–4–9 Air Traffic Wake Turbulence Separations

**Section 5. Bird Hazards and Flight Over National Refuges, Parks, and Forests.....909**
7–5–1 Migratory Bird Activity
7–5–2 Reducing Bird Strike Risks
7–5–3 Reporting Bird Strikes
7–5–4 Reporting Bird and Other Wildlife Activities
7–5–5 Pilot Advisories on Bird and Other Wildlife Hazards
7–5–6 Flights Over Charted U.S. Wildlife Refuges, Parks, and Forest Service Areas

**Section 6. Potential Flight Hazards..... 911**
7–6–1 Accident Causal Factors
7–6–2 Reporting Radio/Radar Altimeter Anomalies
7–6–3 VFR in Congested Areas
7–6–4 Obstructions To Flight
7–6–5 Avoid Flight Beneath Unmanned Balloons
7–6–6 Unmanned Aircraft Systems
7–6–7 Mountain Flying
7–6–8 Use of Runway Half-Way Signs at Unimproved Airports
7–6–9 Seaplane Safety
7–6–10 Flight Operations in Volcanic Ash
7–6–11 Emergency Airborne Inspection of Other Aircraft
7–6–12 Precipitation Static
7–6–13 Light Amplification by Stimulated Emission of Radiation (Laser) Operations and Reporting Illumination of Aircraft

SAMPLE

 © Aviation Supplies & Academics, Inc.

7–6–14 Flying in Flat Light, Brown Out Conditions, and White Out Conditions
7–6–15 Operations in Ground Icing Conditions
7–6–16 Avoid Flight in the Vicinity of Exhaust Plumes (Smoke Stacks and Cooling Towers)
7–6–17 Space Launch and Reentry Area
7–6–18 Automatic Landing Operations

**Section 7. Safety, Accident, and Hazard Reports.....925**
7–7–1 Aviation Safety Reporting Program
7–7–2 Aircraft Accident and Incident Reporting
7–7–3 Near Midair Collision Reporting
7–7–4 Unidentified Anomalous Phenomena (UAP) Reports
7–7–5 Safety Alerts For Operators (SAFO) and Information For Operators (InFO)

## Chapter 8. Medical Facts for Pilots

**Section 1. Fitness for Flight.....929**
8–1–1 Fitness For Flight
8–1–2 Effects of Altitude
8–1–3 Hyperventilation in Flight
8–1–4 Carbon Monoxide Poisoning in Flight
8–1–5 Illusions in Flight
8–1–6 Vision in Flight
8–1–7 Aerobatic Flight
8–1–8 Judgment Aspects of Collision Avoidance

## Chapter 9. Aeronautical Charts and Related Publications

**Section 1. Types of Charts Available .....937**
9–1–1 General
9–1–2 Obtaining Aeronautical Charts
9–1–3 Safety Alerts, Charting Notices, and Data Product Notices
9–1–4 Selected Charts and Products Available
9–1–5 General Description of Each Chart Series
9–1–6 Where and How to Get Charts of Foreign Areas

## Chapter 10. Helicopter Operations

**Section 1. Helicopter IFR Operations .....949**
10–1–1 Helicopter Flight Control Systems
10–1–2 Helicopter Instrument Approaches
10–1–3 Helicopter Approach Procedures to VFR Heliports
10–1–4 The Gulf of America Grid System
10–1–5 Departure Procedures

**Section 2. Special Operations .....955**
10–2–1 Offshore Helicopter Operations
10–2–2 Helicopter Night VFR Operations
10–2–3 Landing Zone Safety
10–2–4 Emergency Medical Service (EMS) Multiple Helicopter Operations

## Chapter 11. Unmanned Aircraft Systems (UAS)

**Section 1. General.....971**
11–1–1 General
11–1–2 Access to the National Airspace System (NAS) for UAS Operators

**Section 2. Small Unmanned Aircraft System (sUAS).....973**
11–2–1 Part 107 sUAS and Recreational Flyers
11–2–2 Registration Requirements

SAMPLE

**Section 3. Large UAS (MGOW 55 Pounds or More)** ..... **975**
11–3–1 Large Public UAS Operations
11–3–2 Exemptions Under 49 USC 44807, Special Authority for Certain Unmanned Systems
11–3–3 Emerging Large UAS Civil Operations

**Section 4. Airspace Access for UAS** ..... **979**
11–4–1 Recreational Flyers
11–4–2 14 CFR Part 107 and Waivers to 14 CFR Part 107
11–4–3 Airspace Access for Public Aircraft Operations (PAOs)
11–4–4 14 CFR Part 89 Remote Identification and FAA-Recognized Identification Areas (FRIAs)
11–4–5 Airspace Access for 14 CFR Part 135 and 14 CFR Part 137
11–4–6 Airspace Restrictions To Flight
11–4–7 UAS Traffic Management (UTM)

**Section 5. UAS Pilot Testing, Certification and Responsibilities** ..... **987**
11–5–1 UAS Pilot Certification and Requirements for Part 107 and Recreational Flyers
11–5–2 Pilot Certification and Requirements for Public Aircraft Operations (PAOs)
11–5–3 Pilot Certification for 14 CFR Part 135, Part 137, and Large Civil UAS
11–5–4 Foreign Pilot Certification

**Section 6. Advanced Air Mobility** ..... **989**
11–6–1 General

**Section 7. UAS Operations on Airports** ..... **990**
11–7–1 UAS Operations on Airports

**Section 8. Other Information and Best Practices** ..... **991**
11–8–1 Best Practices for UAS Operations
11–8–2 UAS Operations and Air Traffic Control (ATC)
11–8–3 Precautions: Flight Over or Near People, Vehicles, Manned Aircraft, and Night Operations
11–8–4 Accidents and Incidents: UAS Operator Responsibilities
11–8–5 Emergency UAS Authorizations Through Special Government Interest (SGI) Airspace Waivers
11–8–6 Environmental Best Practices
11–8–7 Resources for UAS Operators

**Appendix 1 Bird/Other Wildlife Strike Report** ..... 995
**Appendix 2 Volcanic Activity Reporting Form (VAR)** ..... 996
**Appendix 3 Abbreviations/Acronyms** ..... 997
**Appendix 4 FAA Form 7233-4—International Flight Plan** ..... 1003
**Appendix 5 FAA Form 7233-1—Flight Plan** ..... 1021
**Pilot/Controller Glossary** ..... 1023

SAMPLE


© Aviation Supplies & Academics, Inc.

# Chapter 2
# Aeronautical Lighting and Other Airport Visual Aids

## *Section 1. Airport Lighting Aids*

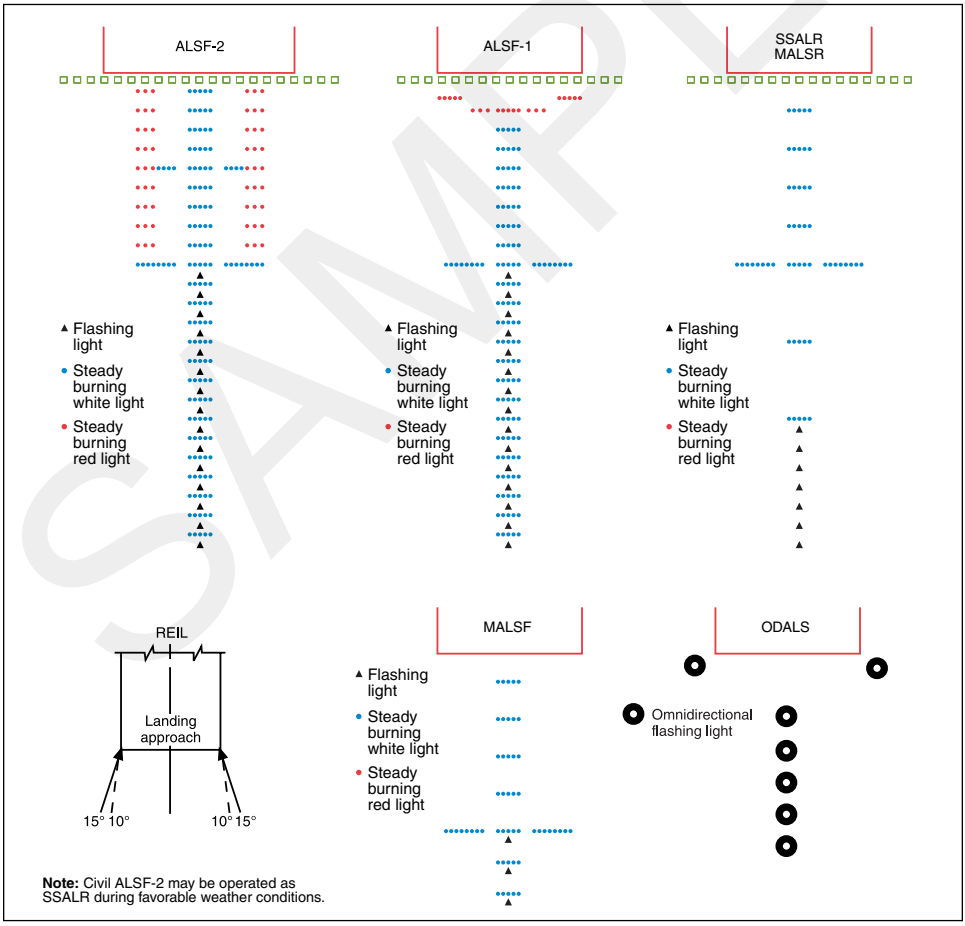
### 2–1–1 Approach Light Systems (ALS)

**a.** ALS provide the basic means to transition from instrument flight to visual flight for landing. Operational requirements dictate the sophistication and configuration of the approach light system for a particular runway.

**b.** ALS are a configuration of signal lights starting at the landing threshold and extending into the approach area a distance of 2,400–3,000 feet for precision instrument runways and 1,400–1,500 feet for nonprecision instrument runways. Some systems include sequenced flashing lights which appear to the pilot as a ball of light traveling towards the runway at high speed (twice a second). (See Figure 2-1-1.)



***FIGURE 2–1–1***
**Precision and Nonprecision Configurations**




SAMPLE

## 2–1–2 Visual Glideslope Indicators

**a. Visual Approach Slope Indicator (VASI)**

**1.** VASI installations may consist of either 2, 4, 6, 12, or 16 light units arranged in bars referred to as near, middle, and far bars. Most VASI installations consist of 2 bars, near and far, and may consist of 2, 4, or 12 light units. Some VASIs consist of three bars, near, middle, and far, which provide an additional visual glide path to accommodate high cockpit aircraft. This installation may consist of either 6 or 16 light units. VASI installations consisting of 2, 4, or 6 light units are located on one side of the runway, usually the left. Where the installation consists of 12 or 16 light units, the units are located on both sides of the runway.

**2.** Two-bar VASI installations provide one visual glide path which is normally set at 3 degrees. Three-bar VASI installations provide two visual glide paths. The lower glide path is provided by the near and middle bars and is normally set at 3 degrees while the upper glide path, provided by the middle and far bars, is normally 1/4 degree higher. This higher glide path is intended for use only by high cockpit aircraft to provide a sufficient threshold crossing height. Although normal glide path angles are three degrees, angles at some locations may be as high as 4.5 degrees to give proper obstacle clearance. Pilots of high performance aircraft are cautioned that use of VASI angles in excess of 3.5 degrees may cause an increase in runway length required for landing and rollout.

**3.** The basic principle of the VASI is that of color differentiation between red and white. Each light unit projects a beam of light having a white segment in the upper part of the beam and red segment in the lower part of the beam. The light units are arranged so that the pilot using the VASIs during an approach will see the combination of lights shown below.

**4.** The VASI is a system of lights so arranged to provide visual descent guidance information during the approach to a runway. These lights are visible from 3–5 miles during the day and up to 20 miles or more at night. The visual glide path of the VASI provides safe obstruction clearance within plus or minus 10 degrees of the extended runway centerline and to 4 NM from the runway threshold. Descent, using the VASI, should not be initiated until the aircraft is visually aligned with the runway. Lateral course guidance is provided by the runway or runway lights. In certain circumstances, the safe obstruction clearance area may be reduced by narrowing the beam width or shortening the usable distance due to local limitations, or the VASI may be offset from the extended runway centerline. This will be noted in the Chart Supplement and/or applicable Notices to Airmen (NOTAMs).

**5.** For 2-bar VASI (4 light units) see Figure 2-1-2.

**6.** For 3-bar VASI (6 light units) see Figure 2-1-3.

**7.** For other VASI configurations see Figure 2-1-4.

**b. Precision Approach Path Indicator (PAPI).** The precision approach path indicator (PAPI) uses light units similar to the VASI but are installed in a single row of either two or four light units. These lights are visible from about 5 miles during the day and up to 20 miles at night. The visual glide path of the PAPI typically provides safe obstruction clearance within plus or minus 10 degrees of the extended runway centerline and to 3.4 NM from the runway threshold. Descent, using the PAPI, should not be initiated until the aircraft is visually aligned with the runway. The row of light units is normally installed on the left side of the runway and the glide path indications are as depicted. Lateral course guidance is provided by the runway or runway lights. In certain circumstances, the safe obstruction clearance area may be reduced by narrowing the beam width or shortening the usable distance due to local limitations, or the PAPI may be offset from the extended runway centerline. This will be noted in the Chart Supplement and/or applicable NOTAMs. (See Figure 2-1-5.)

**c. Tri-color Systems.** Tri-color visual approach slope indicators normally consist of a single light unit projecting a three-color visual approach path into the final approach area of the runway upon which the indicator is installed. The below glide path indication is red, the above glide path indication is amber, and the on glide path indication is green. These types of indicators have a useful range of approximately one-half to one mile during the day and up to five miles at night depending upon the visibility conditions. (See Figure 2-1-6.)

**d. Pulsating Systems.** Pulsating visual approach slope indicators normally consist of a single light unit projecting a two-color visual approach path into the final approach area of the runway upon which the indicator is installed. The on glide path indication may be a steady white light or alternating RED and WHITE light. The slightly below glide path indication is a steady red light. If the aircraft descends further below the glide path, the red light starts to pulsate. The above glide path indication is a pulsating white light. The pulsating rate increases as the aircraft gets further above or below the desired glide slope. The useful range of the system is about four miles during the day and up to ten miles at night. (See Figure 2-1-7.)

**e. Alignment of Elements Systems.** Alignment of elements systems are installed on some small general aviation airports and are a low-cost system consisting of painted plywood panels, normally black and white or fluorescent orange. Some


© Aviation Supplies & Academics, Inc.

of these systems are lighted for night use. The useful range of these systems is approximately three-quarter miles. To use the system the pilot positions the aircraft so the elements are in alignment. The glide path indications are shown in Figure 2-1-8.

*FIGURE 2–1–2*
**2-Bar VASI**

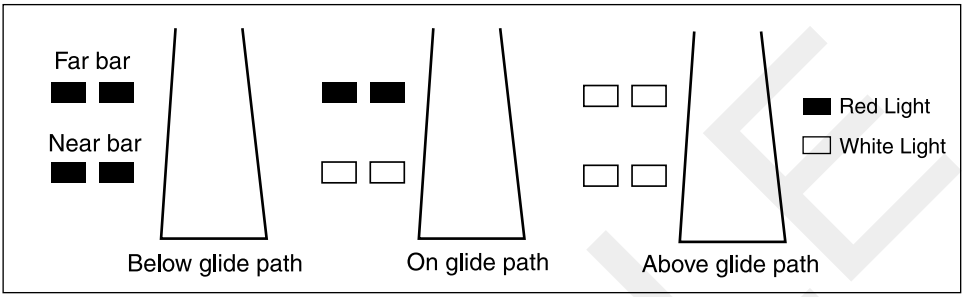



*FIGURE 2–1–3*
**3-Bar VASI**

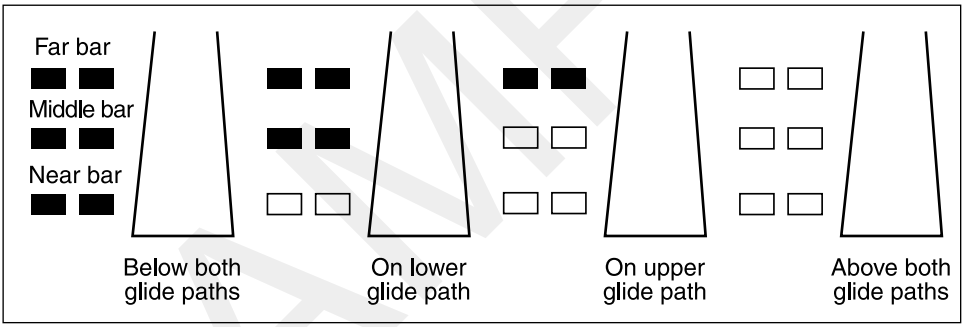
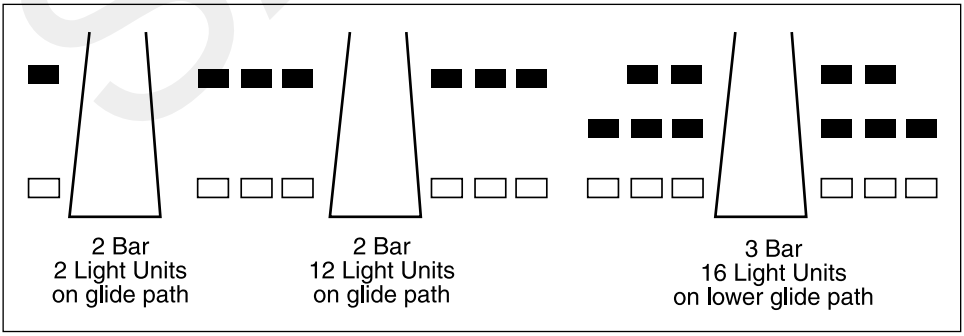



*FIGURE 2–1–4*
**VASI Variations**




SAMPLE

*FIGURE 2–1–5*
**Precision Approach Path Indicator (PAPI)**

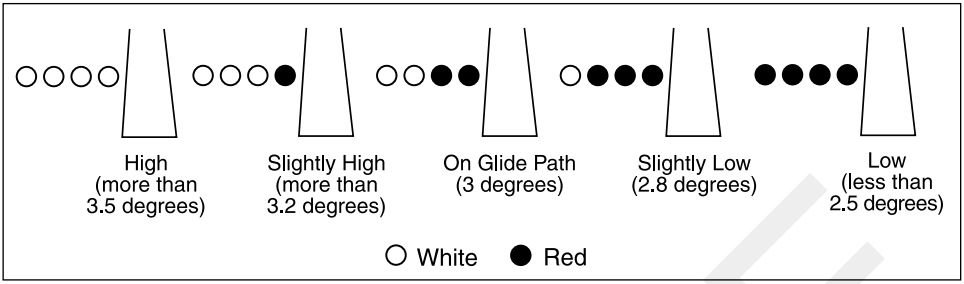
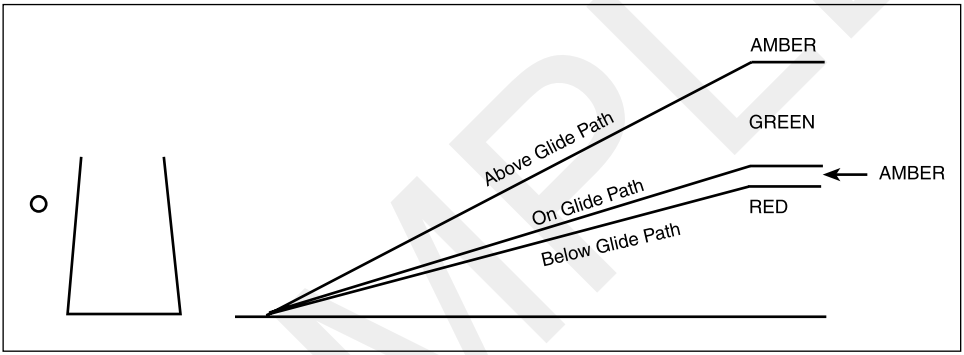



*FIGURE 2–1–6*
**Tri-Color Visual Approach Slope Indicator**




***Notes:***
***1.*** *Since the tri-color VASI consists of a single light source which could possibly be confused with other light sources, pilots should exercise care to properly locate and identify the light signal.*
***2.*** *When the aircraft descends from green to red, the pilot may see a dark amber color during the transition from green to red.*

SAMPLE

 © Aviation Supplies & Academics, Inc.

# 2027

# FAR/AIM

**Federal Aviation Regulations**
**Aeronautical Information Manual**

Rules and Procedures for Aviators

- Regulations pertinent to pilots, drone operators, and instructors, including Title 14 Parts 1, 5, 43, 48, 61, 67, 68, 71, 73, 89, 91, 97, 103, 105, 107, 110, 119, 136, 137, 141, and 142; Title 49 NTSB 830 and TSA 1552.
- Unabridged *Aeronautical Information Manual (AIM)*, including full-color graphics.
- Pilot/Controller Glossary.
- Pilot's Bill of Rights.
- A suggested study list of regulations and *AIM* paragraphs for each certificate and rating.
- Comprehensive *FAR/AIM* index to find topics faster.
- Tabs printed in page margins for quick access to specific sections.
- All changes since the last edition clearly identified.
- A summary of major FAR changes since the previous edition was published.
- **Free updates** available online and via email subscription for instant access to regulation and procedural changes.

UAS DRONE
Rules Included

Aviation Supplies & Academics, Inc.
817 Walbridge Street
Kalamazoo, Michigan 49007 USA
425-235-1500 | asa2fly.com

ASA-27-FR-AM-BK

OTHER BOOKS AVAILABLE IN ASA'S FAR/AIM SERIES:

**FAR for Aviation Maintenance Technicians** (ASA-27-FAR-AMT)

Title 14 Parts 1, 3, 5, 13, 21, 22, 23, 26, 27, 33, 34, 35, 38, 39, 43, 45, 47, 48, 65, 91, 110, 119, 121 (J, L, Z, AA, DD), 125, 135, 145, 147, and 183; Advisory Circulars 20-62E, 20-109B, 21-12D, 39-7D, 43-9D, 43.9-1G

**FAR for Flight Crew** (ASA-27-FAR-FC)

Title 14 Parts 1, 5, 63, 65, 91 Subpart K, 110, 111, 117, 119, 120, 121, and 135; Title 49 Hazmat 175 and TSA 1544

**ASA's FAR/AIM Series**
Books, eBooks, Updates
**asa2fly.com/faraim**

Fit the FAR/AIM Series in your pocket.
**Get the app!**

TRANSPORTATION USD $29.95
ISBN 978-1-64425-560-5
52995 >
9 781644 255605