

Built from the FAA's own documents, checked on faa.gov and ecfr.gov on 15 September 2026.
FAA-S-ACS-6C · FAA-H-8083-25C · FAA-H-8083-3C · FAA-H-8083-2A · FAA-H-8083-28B · FAA-H-8083-15B · FAA-H-8083-1B · AIM Change 3 · 14 CFR · 49 CFR part 830 · POH/AFM

Student Instructor

How to use this plan

► study advice from RunupLab, not FAA text

Work task by task. Each ACS lists the ACS's own reference line and RunupLab's pointers for where to start reading.

Read the chapters marked Core first and skim the ones marked Skim. Chapters marked Skip for ASEL are, in RunupLab's judgment, not needed for an airplane single-engine land private pilot.

Tick a box when you can explain the item to your instructor without notes.

FAA documents change. This plan names the edition it was built from; check faa.gov for a newer one before you rely on it.

Text marked with the advice glyph is RunupLab study advice. Titles, headings, quotations and ACS elements are copied from the FAA documents named beside them.

In this edition each task also lists its knowledge, risk management and skill elements with a box to tick.

Core

Read it, and be ready to be asked about it.

Skim

Read it for familiarity.

Skip for ASEL

In RunupLab's judgment, not needed for this certificate and class.

How you're tested 1

Your library 2

Reading plan 4

Regulations checklist 12

ACS checklist 14

Instructor sign-off 31

Where this plan's facts come from 32

1 · How you're tested

FAA-S-ACS-6C Appendix 1 · FAA-G-ACS-2

FAA GUIDANCE

► What the ACS says about the knowledge test and the practical test, quoted.

The knowledge test

"For an initial Private Pilot Certificate, applicants must pass the knowledge test listed in the table below as a prerequisite for the practical test."

FAA-S-ACS-6C, Appendix 1, p. 66

Test Code	Test Name	Number of Questions	Age	Allotted Time	Passing Score
PAR	Private Pilot Airplane	60	15	2.5	70

"In accordance with 14 CFR part 61, section 61.39, the applicant must pass the airman knowledge test before taking the practical test, if applicable to the certificate or rating sought."

FAA-S-ACS-6C, Appendix 1, p. 66

"Knowledge and risk management elements are primarily evaluated during the knowledge testing phase of the airman certification process."

FAA-S-ACS-6C, Appendix 1, p. 67

"The Airman Knowledge Test Report (AKTR) lists ACS codes that correlate to a specific Task element for a given Area of Operation for any incorrect responses on the knowledge test."

FAA-S-ACS-6C, Appendix 1, p. 66

The practical test

"There is no requirement for an evaluator to test every knowledge and risk management element in a Task; rather the evaluator has discretion to sample as needed to ensure the applicant's mastery of that Task. The required minimum elements to be tested from each applicable Task include:

- any elements in which the applicant was shown to be deficient on the knowledge test, as applicable;
- at least one knowledge element;
- at least one risk management element; and
- all skill elements unless otherwise noted."

FAA-S-ACS-6C, Appendix 1, p. 66

"Unless otherwise noted in the Task, the evaluator must test each item in the skills section by observing the applicant perform each one."

FAA-S-ACS-6C, Appendix 1, p. 67

"The applicant must pass the ground portion of the practical test before beginning the flight portion."

FAA-S-ACS-6C, Appendix 1, p. 67

What you can be asked about

"The References for each Task indicate the source material for Task elements. For example, in the Task element "Acceptable weather products and resources required for preflight planning, current and forecast weather for departure, en route, and arrival phases of flight such as:" (PA.I.C.K2), the applicant should be prepared for questions on any weather product presented in the references for that Task."

FAA-S-ACS-6C, Appendix 1, p. 67

ACS Companion Guide for Pilots (FAA-G-ACS-2)

ACS Companion Guide for Pilots (FAA-G-ACS-2, with Changes 1 & 2). Change 1 (September 19, 2024); Change 2 (December 26, 2024).

- ☐ Core

Section 1: Knowledge Test Eligibility, Description, and Registration
- ☐ Core

Section 2: Airman Knowledge Test Report
- ☐ Core

Section 3: ACS Risk Management
- ☐ Skip for ASEL

Section 4: Flight Instructor Applicant Considerations
- For flight instructor applicants.
- ☐ Skim

Section 5: References
- ☐ Skim

Section 6: Abbreviations and Acronyms
- ☐ Core

Section 7: Practical Test Checklist (Applicant)
- ☐ Skim

Section 8: Knowledge Test Reports and Archived ACS Codes

p. 2

p. 5

p. 7

p. 9

p. 10

p. 14

p. 19

p. 20

► These documents are free online. Your airplane's POH or AFM comes from its owner or manufacturer.

Cited by the ACS

Document	Edition checked	ASEL tasks citing it	Use it for
Private Pilot for Airplane Category Airman Certification Standards https://www.faa.gov/training_testing/testing/acs	FAA-S-ACS-6C · November 2023 · Effective May 31, 2024	—	► The standard you are tested against: tasks, knowledge, risk management and skill elements, and tolerances.
Pilot's Handbook of Aeronautical Knowledge https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/phak	FAA-H-8083-25C · 2023 · addendum October 2025	45 of 45	► The main knowledge text: aerodynamics, systems, instruments, weather, airports, airspace, navigation, aeromedical factors and decision-making.
Airplane Flying Handbook https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/airplane_handbook	FAA-H-8083-3C · 2021 · addendum October 2025	45 of 45	► How to fly the maneuvers and procedures in the ACS, from preflight through emergencies.
Risk Management Handbook https://www.faa.gov/regulations_policies/handbooks_manuals/risk-management-handbook-faa-h-8083-2a	FAA-H-8083-2A · 2022	45 of 45	► Identifying, assessing and mitigating risk; supports the risk management elements of each task.
Pilot's Operating Handbook / Airplane Flight Manual	► The one for the airplane you fly.	27 of 45	► Your airplane's limitations, procedures, performance, weight and balance, and systems.
Aeronautical Information Manual https://www.faa.gov/air_traffic/publications/atpubs/aim_html/	Change 3 · effective 7/9/2026	19 of 45	► Procedures: navigation aids, airport lighting and markings, airspace, ATC, emergencies, weather services, medical facts and charts.
Aviation Weather Handbook https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/aa-h-8083-28b-aviation-weather-handbook	FAA-H-8083-28B · 04/02/2026	2 of 45	► Weather theory, weather hazards, and the weather products you brief from.
Instrument Flying Handbook https://www.faa.gov/regulations_policies/handbooks_manuals/aviation	FAA-H-8083-15B · 2012 · errata 12/21/2012, 10/10/2014 · addenda 4/10/2015, 11/5/2019	6 of 45	► Attitude instrument flying for the Basic Instrument Maneuvers tasks.
Weight & Balance Handbook https://www.faa.gov/regulations_policies/handbooks_manuals/aviation	FAA-H-8083-1B · 2016 · addendum October 2025	1 of 45	► Weight and balance theory and computations.
Title 14 CFR — the regulations https://www.ecfr.gov/current/title-14	eCFR, structure as of 2026-09-11	9 of 45	► The regulations. Work through the Regulations checklist.
AC 61-67C — Stall and Spin Awareness Training with Change 1 & 2 https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentNumber/61-67C	Active · issued 2000-09-25	3 of 45	► Stall and spin awareness.
AC 68-1A — BasicMed https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentNumber/68-1A	Active · issued 2017-05-03	1 of 45	► BasicMed.
AC 91-73B — Parts 91 and 135 Single Pilot, Flight School Procedures During Taxi Operations https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentNumber/91-73B	Active · issued 2012-07-30	1 of 45	► Single-pilot taxi procedures.
AC 91-78A — Use of Electronic Flight Bags https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentNumber/91-78A	Active · issued 2024-02-23	1 of 45	► Using an electronic flight bag.
AC 91-92 — Pilot's Guide to a Preflight Briefing https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentNumber/91-92	Active · issued 2021-03-15	1 of 45	► Getting and using a preflight briefing.
AC 120-71B — Standard Operating Procedures and Pilot Monitoring Duties for Flight Deck Crewmembers https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentNumber/120-71B	Active · issued 2017-01-10	1 of 45	► Standard operating procedures and pilot monitoring; the ACS cites it for flight deck management.
VFR navigation charts https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/vfr/	VFR Raster Charts	5 of 45	► Sectional and terminal area charts for where you fly.
Chart Supplements https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/dafd/	Digital - Chart Supplement (d-CS)	2 of 45	► Airport and facility information for your airports.
NOTAMS	AIM 5-1-3 · Notice to Airmen (NOTAM) System	1 of 45	► Notices that can affect your flight; the AIM paragraph listed here explains the system.
FAA-H-8083-23 (as the ACS cites it)	No edition checked	6 of 45	► Seaplane operations. The ACS lists it on tasks shared by land and sea classes; a land airplane applicant can skip it.

Also useful — not on an ACS reference line

Document	Edition checked	ASEL tasks citing it	Use it for
ACS Companion Guide for Pilots https://www.faa.gov/training_testing/testing/acs/acs_companion_guide_pilots.pdf	FAA-G-ACS-2, with Changes 1 & 2	—	► Knowledge test registration and procedures, what your test report codes mean, and the practical test applicant checklist.
14 CFR part 1 — Definitions and Abbreviations https://www.ecfr.gov/current/title-14/part-1	eCFR, structure as of 2026-09-11	—	► Definitions and abbreviations used across the regulations.

14 CFR part 67 — Medical Standards and Certification https://www.ecfr.gov/current/title-14/part-67	eCFR, structure as of 2026-09-11	—	► Medical certificate standards.
49 CFR part 830 — Notification and Reporting of Aircraft Accidents or Incidents and Overdue Aircraft, and Preservation of Aircraft Wreckage, Mail, Cargo, and Records https://www.ecfr.gov/current/title-49/part-830	eCFR, structure as of 2026-09-11	—	► NTSB accident and incident notification, an ACS knowledge element in Task III.A.
AC 61-65K — Certification: Pilots and Flight and Ground Instructors https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentNumber/61-65K	Active · issued 2025-11-14	—	► Sample endorsements, including the ones a student pilot receives.
AC 90-66C — Non-Towered Airport Flight Operations https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentNumber/90-66C	Active · issued 2023-06-06	—	► Operations at airports without an operating control tower.
AC 91-67A — Minimum Equipment Requirements for General Aviation Operations Under 14 CFR Part 91, § 91.213 https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentNumber/91-67A	Active · issued 2023-10-16	—	► Flying with inoperative equipment.
Aeronautical Chart Users' Guide https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/aero_guide/	faa.gov lists Effective Date 9 July 2026; the page's introduction still reads 22 January 2026	—	► The chart legend: what the symbols on FAA charts mean.

Cancelled — do not study from these

Document	Edition checked	ASEL tasks citing it	Use it for
AC 00-6B — Aviation Weather	issued 2016-08-23 · cancelled 2022-12-22	—	► Replaced by the Aviation Weather Handbook.
AC 00-45H — Aviation Weather Services - Change 2	issued 2016-11-14 · cancelled 2022-12-22	—	► Replaced by the Aviation Weather Handbook.

"ASEL tasks citing it" is counted from each task's References line in FAA-S-ACS-6C, across the tasks that apply to an airplane single-engine land applicant.

► Chapter by chapter, with the main headings and the ACS tasks each chapter supports.

Pilot's Handbook of Aeronautical Knowledge

FAA-H-8083-25C (2023) with its October 2025 addendum · page numbers from its table of contents

“Until the revision of FAA-H-8083-25 is published, this addendum is considered part of the current edition of the handbook and should be used as a reference.”

PHAK addendum (MOSAIC rule published July 18, 2025, effective October 22, 2025)

- ☐ **Core PHAK ch 1 Introduction To Flying** p. 1-1
 - Supports I.A
 - History of Flight · History of the Federal Aviation Administration (FAA) (Transcontinental Air Mail Route, Federal Certification of Pilots and Mechanics, The Federal Aviation Act of 1958, Department of Transportation (DOT), ATC Automation, The Professional Air Traffic Controllers Organization (PATCO) Strike, The Airline Deregulation Act of 1978) · The Role of the FAA (The Code of Federal Regulations (CFR), Primary Locations of the FAA, Aviation Safety Inspector (ASI), FAA Safety Team (FAASafetyTeam), Obtaining Assistance from the FAA, Pilot and Aeronautical Information) · Aircraft Classifications and Ultralight Vehicles · Pilot Certifications (Recreational Pilot, Private Pilot, Commercial Pilot, Airline Transport Pilot) · Selecting a Flight School (How To Find a Reputable Flight Program, How To Choose a Certificated Flight Instructor (CFI)) · The Student Pilot (Basic Requirements) · Becoming a Pilot · Knowledge and Skill Tests (Knowledge Tests, Practical Test, Role of the Certificated Flight Instructor, Role of the Designated Pilot Examiner)
- ☐ **Core PHAK ch 2 Aeronautical Decision-Making** p. 2-1
 - Supports I.H II.A
 - History of ADM · Risk Management · Crew Resource Management (CRM) and Single-Pilot Resource Management · Hazard and Risk (Hazardous Attitudes and Antidotes, Risk, The PAVE Checklist) · Human Factors · Human Behavior · The Decision-Making Process (Single-Pilot Resource Management (SRM), The 5 Ps Check, Perceive, Process, Perform (3P) Model) · Decision-Making in a Dynamic Environment (Automatic Decision-Making, Stress Management, Use of Resources) · Situational Awareness (Obstacles to Maintaining Situational Awareness) · Automation (Results of the Study, Equipment Use, Managing Aircraft Automation, Enhanced Situational Awareness, Automation Management, Risk Management)
- ☐ **Skim PHAK ch 3 Aircraft Construction** p. 3-1
 - Supports I.B
 - Aircraft Design, Certification, and Airworthiness (A Note About Light Sport Aircraft) · Lift and Basic Aerodynamics · Major Components (Fuselage, Wings, Empennage, Landing Gear, The Powerplant) · Subcomponents · Types of Aircraft Construction (Truss Structure, Semimonocoque, Composite Construction) · Instrumentation: Moving into the Future (Control Instruments, Navigation Instruments) · Global Positioning System (GPS)
- ☐ **Core PHAK ch 4 Principles of Flight** p. 4-1
 - Supports I.F
 - Structure of the Atmosphere (Air is a Fluid, Atmospheric Pressure, Pressure Altitude, Density Altitude) · Theories in the Production of Lift (Newton's Basic Laws of Motion, Bernoulli's Principle of Differential Pressure) · Airfoil Design (Low Pressure Above, High Pressure Below, Pressure Distribution, Airfoil Behavior) · A Third Dimension
- ☐ **Core PHAK ch 5 Aerodynamics of Flight** p. 5-1
 - Supports I.F IV.C V.A V.B VII.A VII.B VII.C VII.D
 - Forces Acting on the Aircraft (Thrust, Lift, Drag, Weight) · Wingtip Vortices (Formation of Vortices, Avoiding Wake Turbulence) · Ground Effect · Axes of an Aircraft · Moment and Moment Arm · Aircraft Design Characteristics (Stability, Free Directional Oscillations (Dutch Roll), Spiral Instability) · Effect of Wing Planform · Aerodynamic Forces in Flight Maneuvers (Forces in Turns, Forces in Climbs, Forces in Descents) · Stalls · Angle of Attack Indicators · Basic Propeller Principles (Torque and P-Factor, Torque Reaction, Corkscrew Effect, Gyroscopic Action, Asymmetric Loading (P-Factor)) · Load Factors (Load Factors in Aircraft Design, Load Factors in Steep Turns, Load Factors and Stalling Speeds, Load Factors and Flight Maneuvers, Vg Diagram, Rate of Turn, Radius of Turn) · Weight and Balance (Effect of Weight on Flight Performance, Effect of Weight on Aircraft Structure, Effect of Weight on Stability and Controllability, Effect of Load Distribution) · High Speed Flight (Subsonic Versus Supersonic Flow, Speed Ranges, Mach Number Versus Airspeed, Boundary Layer, Shock Waves, Sweepback, Mach Buffet Boundaries, High Speed Flight Controls)
- ☐ **Core PHAK ch 6 Flight Controls** p. 6-1
 - Supports I.G
 - Flight Control Systems (Flight Controls, Primary Flight Controls, Secondary Flight Controls) · Autopilot
- ☐ **Core PHAK ch 7 Aircraft Systems** p. 7-1
 - Supports I.G II.C II.F IX.C
 - Powerplant (Reciprocating Engines, Propeller, Induction Systems, Carburetor Systems, Outside Air Temperature Gauge, Fuel Injection Systems) · Superchargers and Turbosuperchargers (Superchargers, Turbosuperchargers) · Ignition System · Oil Systems · Engine Cooling Systems · Exhaust Systems · Starting System · Combustion · Full Authority Digital Engine Control (FADEC) · Turbine Engines (Types of Turbine Engines, Turbine Engine Instruments, Turbine Engine Operational Considerations, Performance Comparison) · Airframe Systems · Fuel Systems (Gravity-Feed System, Fuel-Pump System, Fuel Primer, Fuel Tanks, Fuel Gauges, Fuel Selectors, Fuel Strainers, Sumps, and Drains, Fuel Grades, Fuel Contamination, Fuel System Icing) · Refueling Procedures · Heating System (Fuel Fired Heaters, Exhaust Heating Systems, Combustion Heater Systems, Bleed Air Heating Systems) · Electrical System · Hydraulic Systems (Landing Gear, Brakes) · Pressurized Aircraft · Oxygen Systems (Oxygen Masks, Cannula, Pressure-Demand Oxygen Systems, Continuous-Flow Oxygen System, Electrical Pulse-Demand Oxygen System, Pulse Oximeters, Servicing of Oxygen Systems) · Anti-Ice and Deice Systems (Airfoil Anti-Ice and Deice, Windscreen Anti-Ice, Propeller Anti-Ice, Other Anti-Ice and Deice Systems)
- ☐ **Core PHAK ch 8 Flight Instruments** p. 8-1
 - Supports I.G VI.A VIII.A VIII.B VIII.C VIII.D IX.C
 - Pitot-Static Flight Instruments (Impact Pressure Chamber and Lines, Static Pressure Chamber and Lines, Altimeter, Vertical Speed Indicator (VSI), Airspeed Indicator (ASI), Blockage of the Pitot-Static System) · Electronic Flight Display (EFD) (Airspeed Tape, Attitude Indicator, Altimeter, Vertical Speed Indicator (VSI), Heading Indicator, Turn Indicator, Tachometer, Slip/Skid Indicator, Turn Rate Indicator, Air Data Computer (ADC), Trend Vectors) · Gyroscopic Flight Instruments (Gyroscopic Principles, Sources of Power, Turn Indicators, Inclinator, Attitude Indicator, Heading Indicator, Attitude and Heading Reference System (AHRS), The Flux Gate Compass System, Remote Indicating Compass) · Angle of Attack Indicators · Compass Systems (Magnetic Compass, The Vertical Card Magnetic Compass) · Outside Air Temperature (OAT) Gauge
- ☐ **Core PHAK ch 9 Flight Manuals and Other Documents** p. 9-1
 - Supports I.B
 - Preliminary Pages (General (Section 1), Limitations (Section 2), Emergency Procedures (Section 3), Normal Procedures (Section 4), Performance (Section 5), Weight and Balance/Equipment List (Section 6), Systems Description (Section 7), Handling, Service, and Maintenance (Section 8), Supplements (Section 9), Safety Tips (Section 10)) · Aircraft Documents (Certificate of Aircraft Registration, Airworthiness Certificate, Aircraft Maintenance) · Aircraft Inspections (Annual Inspection, 100-Hour Inspection, Other Inspection Programs) · Minimum Equipment Lists (MEL) and Operations With Inoperative Equipment · Preventive Maintenance (Repairs and Alterations, Special Flight Permits) · Airworthiness Directives (ADs) · Aircraft Owner/Operator Responsibilities
- ☐ **Core PHAK ch 10 Weight and Balance** p. 10-1
 - Supports I.F
 - Weight Control (Effects of Weight, Weight Changes) · Balance, Stability, and Center of Gravity (Effects of Adverse Balance, Management of Weight and Balance Control, Terms and Definitions, Principles of Weight and Balance Computations, Weight and Balance Restrictions) · Determining Loaded Weight and CG (Computational Method, Graph Method, Table Method, Computations With a Negative Arm, Computations With Zero Fuel Weight, Shifting, Adding, and Removing Weight)
- ☐ **Core PHAK ch 11 Aircraft Performance** p. 11-1
 - Supports I.F IV.A IV.E IV.F
 - Importance of Performance Data · Structure of the Atmosphere · Atmospheric Pressure · Pressure Altitude · Density Altitude (Effects of Pressure on Density, Effects of Temperature on Density, Effects of Humidity (Moisture) on Density) · Performance (Straight-and-Level Flight, Climb Performance, Range Performance, Region of Reversed Command, Takeoff and Landing Performance, Runway Surface and Gradient, Water on the Runway and Dynamic Hydroplaning, Takeoff Performance, Landing Performance) · Performance Speeds · Performance Charts (Interpolation, Density Altitude Charts, Takeoff Charts, Climb and Cruise Charts, Crosswind and Headwind Component Chart, Landing Charts, Stall Speed Performance Charts) · Transport Category Aircraft Performance · Air Carrier Obstacle Clearance Requirements
- ☐ **Core PHAK ch 12 Weather Theory** p. 12-1
 - Supports I.C
 - Atmosphere (Composition of the Atmosphere, Atmospheric Circulation, Atmospheric Pressure) · Coriolis Force · Measurement of Atmosphere Pressure · Altitude and Atmospheric Pressure · Altitude and Flight · Altitude and the Human Body · Wind and Currents (Wind Patterns, Convective Currents, Effect of Obstructions on Wind, Low-Level Wind Shear, Wind and Pressure Representation on Surface Weather Maps) · Atmospheric Stability (Inversion, Moisture and Temperature, Relative Humidity, Temperature/Dew Point Relationship, Methods by Which Air Reaches the Saturation Point, Dew and Frost, Fog, Clouds, Ceiling, Visibility, Precipitation) · Air Masses · Fronts (Warm Front, Cold Front, Comparison of Cold and Warm Fronts, Wind Shifts, Stationary Front, Occluded Front, Thunderstorms)

- ☐ **Core PHAK ch 13 Aviation Weather Services** p. 13-1
 ▶ Supports I.C
 Observations (Surface Aviation Weather Observations, Upper Air Observations, Radar Observations, Satellite) · Service Outlets (Flight Service Station (FSS), Telephone Information Briefing Service (TIBS), Hazardous Inflight Weather Advisory Service (HIWAS), Transcribed Weather Broadcast (TWEB) (Alaska Only)) · Weather Briefings (Standard Briefing, Abbreviated Briefing, Outlook Briefing) · Aviation Weather Reports (Aviation Routine Weather Report (METAR), Pilot Weather Reports (PIREPs), Aviation Forecasts, Terminal Aerodrome Forecasts (TAF), Area Forecasts (FA), Inflight Weather Advisories, Winds and Temperature Aloft Forecast (FB)) · Weather Charts (Surface Analysis Chart, Weather Depiction Chart, Significant Weather Prognostic Charts) · ATC Radar Weather Displays (Weather Avoidance Assistance) · Electronic Flight Displays (EFD) /Multi-Function Weather Products Age and Expiration (AIRMET/SIGMET Display, Graphical METARs, Data Link Weather, Data Link Weather Products) · Pilot Responsibility
- ☐ **Core PHAK ch 14 Airport Operations** p. 14-1
 ▶ Supports II.D III.A III.B
 Airport Categories (Types of Airports) · Sources for Airport Data (Aeronautical Charts, Chart Supplement U.S. (formerly Airport/Facility Directory), Notices to Airmen (NOTAM), Automated Terminal Information Service (ATIS)) · Airport Markings and Signs (Runway Markings and Signs, Taxiway Markings and Signs, Other Markings, Airport Signs) · Airport Lighting (Airport Beacon, Approach Light Systems, Visual Glideslope Indicators, Runway Lighting, Control of Airport Lighting, Taxiway Lights, Obstruction Lights, New Lighting Technologies) · Wind Direction Indicators · Traffic Patterns (Example: Key to Traffic Pattern Operations— Single Runway, Example: Key to Traffic Pattern Operations— Parallel Runways) · Radio Communications (Radio License, Radio Equipment, Using Proper Radio Procedures, Lost Communication Procedures) · Air Traffic Control (ATC) Services (Primary Radar, ATC Radar Beacon System (ATCRBS), Transponder, Automatic Dependent Surveillance— Broadcast (ADS-B), Radar Traffic Advisories) · Wake Turbulence (Vortex Generation, Vortex Behavior, Vortex Avoidance Procedures) · Collision Avoidance (Clearing Procedures, Training Operations Scanning Techniques for Traffic Avoidance Best Practices to See and Avoid Pilot Deviations (PDs), Runway Incursion Avoidance, Causal Factors of Runway Incursions, Runway Confusion, Pre-Landing, Landing, and After-Landing) · Engineered Materials Arresting Systems (EMAS) (Incidents, EMAS Installations and Information, Pilot Considerations)
- ☐ **Core PHAK ch 15 Airspace** p. 15-1
 ▶ Supports I.E
 Controlled Airspace (Class A Airspace, Class B Airspace, Class C Airspace, Class D Airspace, Class E Airspace) · Uncontrolled Airspace (Class G Airspace) · Special Use Airspace (Prohibited Areas, Restricted Areas, Warning Areas, Military Operation Areas (MOAs), Alert Areas, Controlled Firing Areas (CFAs)) · Other Airspace Areas (Local Airport Advisory (LAA), Military Training Routes (MTRs), Temporary Flight Restrictions (TFR), Published VFR Routes, Terminal Radar Service Areas (TRSAs), National Security Areas (NSAs)) · Air Traffic Control and the National Airspace System (Coordinating the Use of Airspace, Operating in the Various Types of Airspace)
- ☐ **Core PHAK ch 16 Navigation** p. 16-1
 ▶ Supports I.D VI.A VI.B VI.C VI.D VIII.F
 Aeronautical Charts (Sectional Charts, VFR Terminal Area Charts, World Aeronautical Charts) · Latitude and Longitude (Meridians and Parallels) (Time Zones, Measurement of Direction, Variation, Deviation) · Effect of Wind · Basic Calculations (Converting Minutes to Equivalent Hours, Converting Knots to Miles Per Hour, Fuel Consumption, Flight Computers, Plotter) · Pilotage · Dead Reckoning (Wind Triangle or Vector Analysis) · Flight Planning (Assembling Necessary Material, Weather Check, Use of Chart Supplement U.S. (formerly Airport/Facility Directory), Airplane Flight Manual or Pilot's Operating Handbook (AFM/POH)) · Charting the Course (Steps in Charting the Course) · Filing a VFR Flight Plan · Ground-Based Navigation (Very High Frequency (VHF) Omnidirectional Range (VOR), Course Deviation Indicator (CDI), Horizontal Situation Indicator, Radio Magnetic Indicator (RMI), Tracking With VOR, Tips on Using the VOR, Time and Distance Check From a Station Using a RMI, Time and Distance Check From a Station Using a CDI, Course Intercept, Distance Measuring Equipment (DME), VOR/DME RNAV, Automatic Direction Finder (ADF), Global Positioning System, Tips for Using GPS for VFR Operations, VFR Waypoints) · Lost Procedures · Flight Diversion
- ☐ **Core PHAK ch 17 Aeromedical Factors** p. 17-1
 ▶ Supports I.A I.H XI.A
 Obtaining a Medical Certificate · Health and Physiological Factors Affecting Pilot Performance (Hypoxia, Symptoms of Hypoxia, Hyperventilation, Middle Ear and Sinus Problems, Spatial Disorientation and Illusions, Postural Considerations, Demonstration of Spatial Disorientation, Coping with Spatial Disorientation, Optical Illusions, How To Prevent Landing Errors Due to Optical Illusions, Motion Sickness, Carbon Monoxide (CO) Poisoning, Stress, Fatigue, Exposure to Chemicals, Dehydration and Heatstroke, Alcohol, Drugs, Altitude-Induced Decompression Sickness (DCS)) · Vision in Flight (Vision Types, Central Blind Spot, Empty-Field Myopia, Night Vision, Night Vision Illusions, Night Landing Illusions, Enhanced Night Vision Systems)
- ☐ **Skim PHAK App. A Performance Data for Cessna Model 172R and Challenger 605** p. A-1
- ☐ **Skim PHAK App. B Acronyms, Abbreviations, and NOTAM Contractions** p. B-1
- ☐ **Core PHAK App. C Airport Signs and Markings** p. C-1
 ▶ Supports II.D

Airplane Flying Handbook

FAA-H-8083-3C (2021) with its October 2025 addendum

“Until the revision of FAA-H-8083-3 is published, this addendum is considered part of the current edition of the handbook and should be used as a reference.”
 AFH addendum (MOSAIC rule published July 18, 2025, effective October 22, 2025)

- ☐ **Core AFH ch 1 Introduction to Flight Training** p. 1-1
 ▶ Supports II.B II.D
 Role of the FAA (Flight Standards Service) · Role of the Pilot Examiner · Role of the Flight Instructor · Sources of Flight Training · Airmen Certification Standards (ACS) and Practical Test Standards (PTS) · Safety Considerations (Collision Avoidance, Runway Incursion Avoidance, Stall Awareness, Use of Checklists) · Continuing Education (FAA Wings Program)
- ☐ **Core AFH ch 2 Ground Operations** p. 2-1
 ▶ Supports II.A II.B II.C II.D II.F XII.A
 Preflight Assessment of the Aircraft (Visual Preflight Assessment, Outer Wing Surfaces and Tail Section, Fuel and Oil, Landing Gear, Tires, and Brakes, Engine and Propeller) · Risk and Resource Management (Risk Management) · Ground Operations · Engine Starting · Hand Propping · Taxiing · Before Takeoff Check · Clear of Runway and Stopped · Parking · Engine Shutdown · Post-Flight (Securing and Servicing)
- ☐ **Core AFH ch 3 Basic Flight Maneuvers** p. 3-1
 The Four Fundamentals · Effect and Use of Flight Controls (Feel of the Airplane) · Attitude Flying · Integrated Flight Instruction · Straight-and-Level Flight (Straight Flight, Level Flight, Common Errors) · Trim Control · Level Turns (Turn Radius, Establishing a Turn, Common Errors) · Climbs and Climbing Turns (Establishing a Climb, Climbing Turns, Common Errors) · Descents and Descending Turns · Glides (Gliding Turns, Common Errors)
- ☐ **Core AFH ch 4 Energy Management: Mastering Altitude and Airspeed Control** p. 4-1
 ▶ Supports IV.B IV.M IV.N
 Importance of Energy Management (Viewing the Airplane as an Energy System, A Frame of Reference for Managing Energy State, Managing Energy is a Balancing Act) · Role of the Controls to Manage Energy State (Primary Energy Role of the Throttle and Elevator, Additional Role for the Elevator) · Rules of Energy Control (Visualizing the Airplane's Ability to “Move” Between Energy States, Three Basic Rules of Energy Control) · Mitigating Risks from Mismanagement of Energy (Managing Energy Errors, Preventing Irreversible Deceleration and/or Sink Rate) · Review of Definitions and Terms
- ☐ **Core AFH ch 5 Maintaining Aircraft Control: Upset Prevention and Recovery Training** p. 5-1
 ▶ Supports VII.A VII.B VII.C VII.D VIII.E
 Defining an Airplane Upset · Upset Prevention and Recovery (Unusual Attitudes Versus Upsets, Environmental Factors, Mechanical Factors, Human Factors, Upset Prevention and Recovery Training (UPRT), UPRT Core Concepts, Academic Material (Knowledge and Risk Management, Common Errors, Roles of FSTDs and Airplanes in UPRT, Airplane-Based UPRT, All-Altitude/All Envelope Flight Training Methods, FSTD-Based UPRT, Coordinated Flight, Angle of Attack) · Slow Flight (Performing the Slow Flight Maneuver, Maneuvering in Slow Flight, Common Errors) · Stalls (Stall Recognition, Stall Characteristics, Fundamentals of Stall Recovery, Stall Training, Approaches to Stalls (Impending Stalls), Power-On or Power-Off, Full Stalls, Power-Off, Accelerated Stalls, Cross-Control Stall, Elevator Trim Stall, Common Errors, Spin Awareness, Spin Procedures, Intentional Spins, Weight and Balance Requirements Related to Spins, Common Errors, Spiral Dive, Common Errors, UPRT Summary)
- ☐ **Core AFH ch 6 Takeoffs and Departure Climbs** p. 6-1
 ▶ Supports IV.A IV.C IV.E
 Terms and Definitions · Prior to Takeoff · Normal Takeoff (Takeoff Roll, Lift-Off, Initial Climb, Common Errors) · Crosswind Takeoff (Takeoff Roll, Lift-Off, Initial Climb, Common Errors) · Ground Effect on Takeoff · Short-Field Takeoff and Maximum Performance Climb (Takeoff Roll, Lift-Off, Initial Climb, Common Errors) · Soft/Rough-Field Takeoff and Climb (Takeoff Roll, Lift-Off, Initial Climb, Common Errors) · Rejected Takeoff/Engine Failure · Noise Abatement
- ☐ **Core AFH ch 7 Ground Reference Maneuvers** p. 7-1
 ▶ Supports V.B
 Maneuvering by Reference to Ground Objects · Drift and Ground Track Control (Correcting Drift During Straight and Level Flight, Constant Radius During Turning Flight, Tracking Over and Parallel to a Straight Line) · Rectangular Course · Turns Around a Point · S-Turns · Elementary Eights (Eights along a Road, Eights across a Road, Eights around Pylons, Eights-on-Pylons)
- ☐ **Core AFH ch 8 Airport Traffic Patterns** p. 8-1
 ▶ Supports III.B
 Airport Traffic Patterns and Operations · Standard Airport Traffic Patterns · Non-Towered Airports · Safety Considerations

- ☐ **Core AFH ch 9 Approaches and Landings** p. 9-1
 - Supports IV.B IV.D IV.F IV.M IV.N IX.B
 Use of Flaps · Normal Approach and Landing (Base Leg, Final Approach, Round Out (Flare), Touchdown, After-Landing Roll, Common Errors) · Go-Arounds (Rejected Landings) (Power, Attitude, Common Errors) · Intentional Slips (Forward Slip to a Landing, Common Errors) · Crosswind Approach and Landing (Crosswind Final Approach, Crosswind Round Out (Flare), Crosswind Touchdown, Crosswind After-Landing Roll, Maximum Safe Crosswind Velocities, Common Errors) · Turbulent Air Approach and Landing · Short-Field Approach and Landing (Common Errors) · Soft-Field Approach and Landing (Common Errors) · Power-Off Accuracy Approaches (90° Power-Off Approach, 180° Power-Off Approach, Common Errors) · Emergency Approaches and Landings (Simulated) · Faulty Approaches and Landings (Low Final Approach, High Final Approach, Slow Final Approach, Use of Power, High Round Out, Late or Rapid Round Out, Floating During Round Out, Ballooning During Round Out, Bouncing During Touchdown, Porpoising, Wheelbarrowing, Hard Landing, Touchdown in a Drift or Crab, Ground Loop, Wing Rising After Touchdown) · Hydroplaning (Dynamic Hydroplaning, Reverted Rubber Hydroplaning, Viscous Hydroplaning)
- ☐ **Core AFH ch 10 Performance Maneuvers** p. 10-1
 - Supports V.A
 Steep Spiral (Common Errors) · Chandelle (Common Errors) · Lazy Eight (Common Errors)
- ☐ **Core AFH ch 11 Night Operations** p. 11-1
 - Supports XI.A
 Night Vision (Anatomy of the Eye) · Night Illusions (False Horizon, Autokinesis, Featureless Terrain Illusion, Ground Lighting Illusions) · Pilot Equipment · Airplane Equipment and Lighting · Airport and Navigation Lighting Aids · Training for Night Flight · Preparation and Preflight · Starting, Taxiing, and Run-up · Takeoff and Climb · Orientation and Navigation · Approaches and Landings · How to Prevent Landing Errors Due to Optical Illusions (Night Emergencies)
- ☐ **Skim AFH ch 12 Transition to Complex Airplanes** p. 12-1
 - Read it if your trainer has a controllable-pitch propeller or retractable landing gear.
 Function of Flaps (Flap Effectiveness, Operational Procedures) · Controllable-Pitch Propeller (Constant-Speed Propeller, Takeoff, Climb, and Cruise, Blade Angle Control, Governing Range, Constant-Speed Propeller Operation) · Turbocharging (Heat Management, Turbocharger Failure) · Retractable Landing Gear (Landing Gear Systems, Controls and Position Indicators, Landing Gear Safety Devices, Emergency Gear Extension Systems, Operational Procedures) · Transition Training
- ☐ **Skip for ASEL AFH ch 13 Transition to Multiengine Airplanes** p. 13-1
- ☐ **Skim AFH ch 14 Transition to Tailwheel Airplanes** p. 14-1
 - Read it if you train in a tailwheel airplane.
 Landing Gear (Instability) · Angle of Attack · Taxiing · Weathervaning · Visibility · Directional Control · Normal Takeoff Roll · Liftoff · Crosswind Takeoff · Short-Field Takeoff · Soft-Field Takeoff · Landing · Touchdown (Three-Point Landing, Wheel Landing, Crosswinds) · After-Landing Roll · Crosswind After-Landing Roll · Short-Field Landing · Soft-Field Landing · Ground Loop
- ☐ **Skip for ASEL AFH ch 15 Transition to Turbopropeller-Powered Airplanes** p. 15-2
- ☐ **Skip for ASEL AFH ch 16 Transition to Jet-Powered Airplanes** p. 16-1
- ☐ **Skip for ASEL AFH ch 17 Transition to Light Sport Airplanes (LSA)** p. 17-1
 - The FAA's addendum says this chapter will be removed.
- ☐ **Core AFH ch 18 Emergency Procedures** p. 18-1
 - Supports VIII.E IX.A IX.B IX.C IX.D
 Emergency Situations · Emergency Landings (Types of Emergency Landings, Psychological Hazards) · Basic Safety Concepts (General, Attitude and Sink Rate Control, Terrain Selection, Airplane Configuration, Approach) · Terrain Types (Water (Ditching) and Snow) · Engine Failure After Takeoff (Single-Engine) · Emergency Descents · In-Flight Fire (Engine Fire, Electrical Fires, Cabin Fire) · Flight Control Malfunction/Failure (Total Flap Failure, Asymmetric (Split) Flap, Loss of Elevator Control, Landing Gear Malfunction) · System Malfunctions (Electrical System, Pitot-Static System) · Abnormal Engine Instrument Indication · Door Opening In-Flight · Inadvertent VFR Flight Into IMC (Recognition, Maintaining Airplane Control, Attitude Control, Turns, Climbs, Descents, Combined Maneuvers, Transition to Visual Flight) · Emergency Response Systems (Ballistic Parachute, Autoland)

Risk Management Handbook

FAA-H-8083-2A (2022)

- ☐ **Core RMH ch 1 Introduction to Risk Management** p. 1-1
 Safety Management Systems in Aviation · Accident Causality & Responsibility · Risk Management Analysis Using the PAVE Checklist
- ☐ **Core RMH ch 2 Personal Minimums** p. 2-1
 - Supports I.A II.A
 Personal Minimums (Step 1—Review Weather Flight Categories, Step 2—Assess Experience and Comfort Level, Step 3—Consider Other Conditions, Step 4—Assemble and Evaluate, Step 5—Adjust for Specific Conditions, Step 6—Stick to the Plan) · Using the FAA WINGS Program for Risk Mitigation & Safety
- ☐ **Core RMH ch 3 Identifying Hazards & Associated Risks** p. 3-1
 - Supports II.A
 Hazard Exposure · Why Hazards Result in Aviation Accidents (Understanding the Risks Posed by Hazards) · Leading Accident Causes (Identifying Hazards) · Using the PAVE Checklist to Identify Hazards (Pilot Hazards, Aircraft Hazards, Environmental Hazards, External Pressure Hazards) · Hazard Combinations · Hazards and Associated Risks (Using a Flight Risk Assessment Tool (FRAT), Hazard Identification and Risk Analysis)
- ☐ **Core RMH ch 4 Assessing Risk** p. 4-1
 Risk Assessment Components · Using a Risk Assessment Matrix (Matrix Errors) · Case Study (Risk Assessment Analysis)
- ☐ **Core RMH ch 5 Mitigating Risk** p. 5-1
 Preflight Risk Mitigation Strategies (Mitigating Pilot Risks, Mitigating Aircraft Risks, Mitigating Environmental Risks, Mitigating External Pressure Risks) · Case Study (Risk Mitigation Analysis) · Balanced Approach to Risk Management
- ☐ **Skim RMH ch 6 Threat and Error Management** p. 6-1
 Threats · What is an Error? (Causes of Errors) · What is an Undesired Aircraft State? (Defenses Provided by the Pilot or Crew)
- ☐ **Skim RMH ch 7 Automation & Flight Path Management** p. 7-1
 Reliance on Automation · Balancing Automated & Manual Flight · Interacting with Automation · Failure to Anticipate, Act, & Verify · Integrated Flight Path Automation Systems
- ☐ **Core RMH ch 8 Aeronautical Decision-Making in Flight** p. 8-1
 - Supports I.H VI.C
 ADM Background · Analytical Decision-Making · Naturalistic Decision-Making · Single-Pilot Resource Management
- ☐ **Skim RMH App. A Risk Management Training**
- ☐ **Skim RMH App. B Risk Management Tools**
- ☐ **Skim RMH App. C Accident Case Studies**
- ☐ **Skim RMH App. D Risk Management Exercises**

Your airplane's POH or AFM

Section list as described in FAA-H-8083-25C chapter 9. ► Your airplane's book may be organized differently; find the same topics in it.

- ☐ **Core Section 1 General**
- ☐ **Core Section 2 Limitations**
 - Supports I.F IV.M V.A VII.A VII.B VII.C VII.D IX.A
- ☐ **Core Section 3 Emergency Procedures**
 - Supports I.G VII.D VIII.E IX.A IX.B IX.C IX.D
- ☐ **Core Section 4 Normal Procedures**
 - Supports II.A II.B II.C II.F IV.A IV.B IV.C IV.D IV.E IV.F IV.N VII.B VII.C XII.A
- ☐ **Core Section 5 Performance**
 - Supports I.F IV.A IV.B IV.C IV.D IV.E IV.F
- ☐ **Core Section 6 Weight and Balance/Equipment List**
 - Supports I.F

☐ **Core** Section 7 Systems Description

► Supports I.G

☐ **Core** Section 8 Handling, Service, and Maintenance

► Supports XII.A

☐ **Core** Section 9 Supplements

► Supports IX.D

☐ **Skim** Section 10 Safety Tips

Aeronautical Information Manual

Change 3, effective 7/9/2026 · chapters 1 to 9 **Chapter 1. Air Navigation**

☐ **Core** AIM 1-1 Navigation Aids

► Supports VI.B

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

☐ **Skim** AIM 1-2 Performance-Based Navigation (PBN) and Area Navigation (RNAV)

► Supports VI.B

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

☐ **Core** AIM 2-1 Airport Lighting Aids

► Supports III.A IV.B XI.A

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

☐ **Core** AIM 2-2 Air Navigation and Obstruction Lighting

► Supports XI.A

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

☐ **Core** AIM 2-3 Airport Marking Aids and Signs

► Supports II.D

2-3-1 General · 2-3-2 Airport Pavement Markings · 2-3-3 Runway Markings · 2-3-4 Taxiway Markings · 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

☐ **Core** AIM 3-1 General

► Supports I.E

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

☐ **Core** AIM 3-2 Controlled Airspace

► Supports I.E

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

☐ **Core** AIM 3-3 Class G Airspace

► Supports I.E

3-3-1 General · 3-3-2 VFR Requirements · 3-3-3 IFR Requirements

☐ **Core** AIM 3-4 Special Use Airspace

► Supports I.E

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

☐ **Core** AIM 3-5 Other Airspace Areas

► Supports I.E

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

Chapter 4. Air Traffic Control

☐ **Core** AIM 4-1 Services Available to Pilots

► Supports III.A III.B VI.B VI.C VI.D VIII.F

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

☐ **Core** AIM 4-2 Radio Communications Phraseology and Techniques

► Supports III.A VIII.F

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

☐ **Core** AIM 4-3 Airport Operations

► Supports II.D III.A III.B

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 · 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)

☐ **Skim** AIM 4-4 ATC Clearances and Aircraft Separation

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)

- ☐ **Skim** **AIM 4-5 Surveillance Systems**
 - Supports VI.B
 - 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)
- ☐ **Skip for ASEL** **AIM 4-6 Operational Policy/Procedures for Reduced Vertical Separation Minimum (RVSM) in the Domestic U.S., Alaska, Offshore Airspace and the San Juan FIR**
- ☐ **Skip for ASEL** **AIM 4-7 Operational Policy/Procedures for the Gulf of America 50 NM Lateral Separation Initiative**
- Chapter 5. Air Traffic Procedures**
- ☐ **Core** **AIM 5-1 Preflight**
 - Supports I.D II.D
 - 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
- ☐ **Skim** **AIM 5-2 Departure Procedures**
 - 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)
- ☐ **Skim** **AIM 5-3 En Route Procedures**
 - 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
- ☐ **Skim** **AIM 5-4 Arrival Procedures**
 - Its paragraphs are largely instrument arrival and approach procedures.
 - 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
- ☐ **Skim** **AIM 5-5 Pilot/Controller Roles and Responsibilities**
 - 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
- ☐ **Core** **AIM 5-6 National Security and Interception Procedures**
 - Supports I.D I.E
 - 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 · 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**
- ☐ **Core** **AIM 6-1 General**
 - 6-1-1 Pilot Responsibility and Authority · 6-1-2 Emergency Condition- Request Assistance Immediately
- ☐ **Core** **AIM 6-2 Emergency Services Available to Pilots**
 - Supports VI.D VIII.F IX.B IX.D
 - 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
- ☐ **Core** **AIM 6-3 Distress and Urgency Procedures**
 - Supports VI.D IX.B
 - 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
- ☐ **Core** **AIM 6-4 Two-way Radio Communications Failure**
 - Supports III.A
 - 6-4-1 Two-way Radio Communications Failure · 6-4-2 Transponder Operation During Two-way Communications Failure · 6-4-3 Reestablishing Radio Contact
- ☐ **Skim** **AIM 6-5 Aircraft Rescue and Fire Fighting Communications**
 - 6-5-1 Discrete Emergency Frequency · 6-5-2 Radio Call Signs · 6-5-3 ARFF Emergency Hand Signals
- Chapter 7. Safety of Flight**
- ☐ **Core** **AIM 7-1 Meteorology**
 - Supports I.C
 - 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 · 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
- ☐ **Core** **AIM 7-2 Barometric Altimeter Errors and Setting Procedures**
 - 7-2-1 General · 7-2-2 Barometric Pressure Altimeter Errors · 7-2-3 Altimeter Errors
- ☐ **Skim** **AIM 7-3 Cold Temperature Barometric Altimeter Errors, Setting Procedures and Cold Temperature Airports (CTA)**
 - 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
- ☐ **Core** **AIM 7-4 Wake Turbulence**
 - Supports IV.A IV.B
 - 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
- ☐ **Core** **AIM 7-5 Bird Hazards and Flight Over National Refuges, Parks, and Forests**
 - 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

- ☐ **Core AIM 7-6 Potential Flight Hazards**
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 · 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
- ☐ **Core AIM 7-7 Safety, Accident, and Hazard Reports**
▶ Supports III.A
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**
- ☐ **Core AIM 8-1 Fitness for Flight**
▶ Supports I.H.XI.A
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**
- ☐ **Core AIM 9-1 Types of Charts Available**
▶ Supports I.D
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
- Aviation Weather Handbook**
FAA-H-8083-28B (04/02/2026) · page numbers from its table of contents
- ☐ **Skim AWH ch 1 Introduction** p. 1-1
- Part 1: Overview of the United States Aviation Weather Service Program and Information**
- ☐ **Core AWH ch 2 Aviation Weather Service Program** p. 2-1
▶ Supports I.C
2.1 Introduction · 2.2 National Oceanic and Atmospheric Administration (NOAA) · 2.3 Federal Aviation Administration (FAA) · 2.4 Department of Defense (DOD) · 2.5 Commercial Weather Information Providers
- ☐ **Core AWH ch 3 Overview of Aviation Weather Information** p. 3-1
▶ Supports I.C
3.1 Introduction · 3.2 Use of Aviation Weather Information · 3.3 Obtaining Weather Information · 3.4 Overview of Aviation Weather Products
- Part 2: Weather Theory and Aviation Hazards**
- ☐ **Core AWH ch 4 The Earth's Atmosphere** p. 4-1
▶ Supports I.C
4.1 Introduction · 4.2 Composition · 4.3 Vertical Structure · 4.4 The Standard Atmosphere
- ☐ **Core AWH ch 5 Heat and Temperature** p. 5-1
▶ Supports I.C
5.1 Introduction · 5.2 Matter · 5.3 Energy · 5.4 Heat · 5.5 Temperature · 5.6 Heat Transfer · 5.7 Thermal Response · 5.8 Temperature Variations with Altitude
- ☐ **Core AWH ch 6 Water Vapor** p. 6-1
▶ Supports I.C
6.1 Introduction · 6.2 The Hydrologic Cycle · 6.3 Saturation · 6.4 Relative Humidity · 6.5 Dewpoint · 6.6 Temperature-Dewpoint Spread (Dewpoint Depression) · 6.7 Change of Phase
- ☐ **Skim AWH ch 7 Earth-Atmosphere Heat Imbalances** p. 7-1
▶ Supports I.C
7.1 Introduction · 7.2 The Earth-Atmosphere Energy Balance · 7.3 Heat Imbalances Between Earth's Surface and the Atmosphere · 7.4 Heat Imbalance Variations with Latitude · 7.5 Seasons · 7.6 Diurnal Temperature Variation
- ☐ **Core AWH ch 8 Atmospheric Pressure and Altimetry** p. 8-1
▶ Supports I.C
8.1 Introduction · 8.2 Atmospheric Pressure · 8.3 Density · 8.4 Altimetry
- ☐ **Skim AWH ch 9 Global Circulations and Jet Streams** p. 9-1
▶ Supports I.C
9.1 Introduction · 9.2 Non-Rotating Earth Circulation System · 9.3 Rotating Earth Circulation System · 9.4 Jet Streams
- ☐ **Core AWH ch 10 Wind** p. 10-1
▶ Supports I.C
10.1 Introduction · 10.2 Naming of the Wind · 10.3 Forces That Affect the Wind · 10.4 Upper Air Wind · 10.5 Surface Wind · 10.6 Local Winds · 10.7 Adverse Winds
- ☐ **Core AWH ch 11 Air Masses, Fronts, and the Wave Cyclone Model** p. 11-1
▶ Supports I.C
11.1 Introduction · 11.2 Air Masses · 11.3 Fronts · 11.4 The Wave Cyclone Model · 11.5 Dryline
- ☐ **Core AWH ch 12 Vertical Motion and Clouds** p. 12-1
▶ Supports I.C
12.1 Introduction · 12.2 Vertical Motion Effects on an Unsaturated Air Parcel · 12.3 Vertical Motion Effects on a Saturated Air Parcel · 12.4 Common Sources of Vertical Motion · 12.5 Cloud Forms · 12.6 Cloud Levels
- ☐ **Core AWH ch 13 Atmospheric Stability** p. 13-1
▶ Supports I.C
13.1 Introduction · 13.2 Using a Parcel as a Tool to Evaluate Stability · 13.3 Stability Types · 13.4 Processes That Change Atmospheric Stability · 13.5 Measurements of Stability · 13.6 Convection · 13.7 Summary
- ☐ **Core AWH ch 14 Precipitation** p. 14-1
▶ Supports I.C
14.1 Introduction · 14.2 Necessary Ingredients for Formation · 14.3 Growth Process · 14.4 Precipitation Types
- ☐ **Skim AWH ch 15 Weather Radar** p. 15-1
▶ Supports I.C
15.1 Introduction · 15.2 Principles of Weather Radar
- ☐ **Core AWH ch 16 Mountain Weather** p. 16-1
▶ Supports I.C
16.1 Introduction · 16.2 Mountain Waves and Adverse Winds · 16.3 Mountain/Valley Breezes and Circulation · 16.4 Mountain/Valley Fog · 16.5 Upslope Fog · 16.6 Mountain Obscuration · 16.7 Mountain Turbulence · 16.8 Mountain Icing · 16.9 Density Altitude
- ☐ **Skim AWH ch 17 Tropical Weather** p. 17-1
▶ Supports I.C
17.1 Introduction · 17.2 Circulation · 17.3 Transitory Systems
- ☐ **Core AWH ch 18 Weather and Obstructions to Visibility** p. 18-1
▶ Supports I.C
18.1 Introduction · 18.2 Low Ceiling and Mountain Obscuration

☐ Core AWH ch 19 Turbulence	p. 19-1
▶ Supports I.C	
19.1 Introduction · 19.2 Causes of Turbulence	
☐ Core AWH ch 20 Icing	p. 20-1
▶ Supports I.C	
20.1 Introduction · 20.2 Supercooled Water · 20.3 Structural Icing · 20.4 Engine Icing · 20.5 Additional Information	
☐ Skip for ASEL AWH ch 21 Arctic Weather	p. 21-1
☐ Core AWH ch 22 Thunderstorms	p. 22-1
▶ Supports I.C	
22.1 Introduction · 22.2 Necessary Ingredients for Thunderstorm Cell Formation · 22.3 Thunderstorm Cell Life Cycle · 22.4 Thunderstorm Types · 22.5 Factors that Influence Thunderstorm Motion · 22.6 Thunderstorm Terminology · 22.7 Hazards · 22.8 Thunderstorm Avoidance	
☐ Skip for ASEL AWH ch 23 Space Weather	p. 23-1
Part 3: Technical Details Relating to Weather Products and Aviation Weather Tools	
☐ Core AWH ch 24 Observations	p. 24-1
▶ Supports I.C	
24.1 Introduction · 24.2 Surface Observations · 24.3 Automated Surface Observing System (ASOS) and Automated Weather Observing System (AWOS) · 24.4 Aviation Routine Weather Report and Aviation Selected Special Weather Report · 24.5 Aircraft Observations and Reports · 24.6 Radar Observations · 24.7 Satellite Observations · 24.8 Upper Air Observations · 24.9 Aviation Weather Cameras	
☐ Core AWH ch 25 Analysis	p. 25-1
▶ Supports I.C	
25.1 Introduction · 25.2 Weather Charts · 25.3 Upper Air Analysis · 25.4 Freezing Level Analysis · 25.5 Icing Analysis (Current Icing Product (CIP)) · 25.6 Turbulence [Graphical Turbulence Guidance (GTG)] Analysis · 25.7 Real-Time Mesoscale Analysis (RTMA)	
☐ Core AWH ch 26 Advisories	p. 26-1
▶ Supports I.C	
26.1 Introduction · 26.2 Significant Meteorological Information (SIGMET) · 26.3 Airmen's Meteorological Information (AIRMET) · 26.4 Center Weather Advisory (CWA) · 26.5 Volcanic Ash Advisory (VAA) · 26.6 Aviation Tropical Cyclone Advisory (TCA) · 26.7 Space Weather Advisory · 26.8 Low-Level Wind Shear (LLWS)/Microburst Advisories · 26.9 Airport Weather Warning (AWW)	
☐ Core AWH ch 27 Forecasts	p. 27-1
▶ Supports I.C	
27.1 Introduction · 27.2 Winds and Temperatures Aloft · 27.3 Terminal Aerodrome Forecast (TAF) · 27.4 Aviation Surface Forecast and Aviation Clouds Forecast · 27.5 Area Forecasts (FA) · 27.6 Alaska Graphical Forecasts · 27.7 World Area Forecast System (WAFS) · 27.8 Significant Weather (SIGWX) · 27.9 Short-Range Surface Prognostic (Prog) Charts · 27.10 Upper Air Forecasts · 27.11 Freezing Level Forecast Graphics · 27.12 Forecast Icing Product (FIP) · 27.13 Graphical Turbulence Guidance (GTG) · 27.14 Cloud Tops · 27.15 Localized Aviation Model Output Statistics (MOS) Program (LAMP) · 27.16 Additional Products for Convection · 27.17 Route Forecast (ROFOR) · 27.18 Aviation Forecast Discussion (AFD) · 27.19 Meteorological Impact Statement (MIS) · 27.20 Soaring Forecast · 27.21 Balloon Forecast	
☐ Core AWH ch 28 Aviation Weather Tools	p. 28-1
▶ Supports I.C	
28.1 Introduction · 28.2 Graphical Forecasts for Aviation (GFA) Tool · 28.3 FAA Flight Service's Interactive Map	
☐ Skim AWH App. A Cloud Types	p. A-1
☐ Skim AWH App. B Standard Conversion Chart	p. B-1
☐ Skim AWH App. C Density Altitude Calculation	p. C-1
▶ Supports I.F	
☐ Skip for ASEL AWH App. D Special Terminal Operation Procedures (STOP) for Operations in a Noncontiguous State	p. D-1
☐ Skim AWH App. E Abbreviations, Acronyms, and Initialisms	p. E-1
☐ Skim AWH App. F Units of Measurement	p. F-1
☐ Skim AWH App. G Websites	p. G-1
Instrument Flying Handbook	
FAA-H-8083-15B (2012) · cited by the ACS in Area of Operation VIII	
☐ Skip for ASEL IFH ch 1 The National Airspace System	p. 1-1
☐ Skim IFH ch 2 The Air Traffic Control System	p. 2-1
▶ Supports VIII.F	
Communication Equipment (Navigation/Communication Equipment, Radar and Transponders) · Communication Procedures · Communication Facilities (Flight Service Stations (FSS), ATC Towers, Terminal Radar Approach Control (TRACON), Tower En Route Control (TEC), Air Route Traffic Control Center (ARTCC), Center Approach/Departure Control) · ATC Inflight Weather Avoidance Assistance (ATC Radar Weather Displays, Weather Avoidance Assistance) · Approach Control Facility · Approach Control Advances (Precision Runway Monitor (PRM)) · Control Sequence (Letters of Agreement (LOA))	
☐ Skim IFH ch 3 Human Factors	p. 3-1
▶ Supports I.H VIII.E	
Sensory Systems for Orientation (Eyes, Ears, Nerves) · Illusions Leading to Spatial Disorientation (Vestibular Illusions, Visual Illusions) · Postural Considerations · Demonstration of Spatial Disorientation (Climbing While Accelerating, Climbing While Turning, Diving While Turning, Tilting to Right or Left, Reversal of Motion, Diving or Rolling Beyond the Vertical Plane) · Coping with Spatial Disorientation · Optical Illusions (Runway Width Illusion, Runway and Terrain Slopes Illusion, Featureless Terrain Illusion, Water Refraction, Haze, Fog, Ground Lighting Illusions) · How To Prevent Landing Errors Due to Optical Illusions	
☐ Skip for ASEL IFH ch 4 Aerodynamic Factors	p. 4-1
☐ Skim IFH ch 5 Flight Instruments	p. 5-1
Pitot/Static Systems (Static Pressure, Blockage of the Pitot-Static System) · Pitot/Static Instruments (Sensitive Altimeter, ICAO Cold Temperature Error Table, Vertical Speed Indicator (VSI)) · Dynamic Pressure Type Instruments (Airspeed Indicator (ASI)) · Magnetism (The Basic Aviation Magnetic Compass, The Vertical Card Magnetic Compass, The Flux Gate Compass System, Remote Indicating Compass) · Gyroscopic Systems (Power Sources) · Gyroscopic Instruments (Attitude Indicators, Heading Indicators, Turn Indicators) · Flight Support Systems (Attitude and Heading Reference System (AHRS), Air Data Computer (ADC)) · Analog Pictorial Displays (Horizontal Situation Indicator (HSI), Attitude Direction Indicator (ADI), Flight Director System (FDS), Integrated Flight Control System) · Flight Management Systems (FMS) (Electronic Flight Instrument Systems) · Primary Flight Display (PFD) (Synthetic Vision, Multi-Function Display (MFD)) · Advanced Technology Systems (Automatic Dependent Surveillance—Broadcast (ADS-B)) · Safety Systems (Radio Altimeters, Traffic Advisory Systems) · Required Navigation Instrument System Inspection (Systems Preflight Procedures, Before Engine Start, After Engine Start, Taxiing and Takeoff, Engine Shut Down)	
☐ Core IFH ch 6 sec I Airplane Attitude Instrument Flying Using Analog Instrumentation	p. 6-1
▶ Supports VIII.A VIII.B VIII.C VIII.D	
▶ Read the analog sections if your airplane has analog instruments.	
Learning Methods (Attitude Instrument Flying Using the Control and Performance Method, Attitude Instrument Flying Using the Primary and Supporting Method, Example of Primary and Support Instruments) · Fundamental Skills (Instrument Cross-Check, Instrument Interpretation)	
☐ Core IFH ch 6 sec II Airplane Attitude Instrument Flying Using an Electronic Flight Display	p. 6-15
▶ Supports VIII.A VIII.B VIII.C VIII.D VIII.E	
▶ Read the electronic flight display sections if your airplane has a glass panel.	
Learning Methods (Control and Performance Method, The Four-Step Process Used to Change Attitude, Applying the Four-Step Process, Attitude Instrument Flying—Primary and Supporting Method) · Fundamental Skills of Attitude Instrument Flying (Instrument Cross-Check) · Scanning Techniques (Selected Radial Cross-Check) · Common Errors (Fixation, Omission, Emphasis)	

- ☐ **Core** IFH ch 7 sec I Airplane Basic Flight Maneuvers Using Analog Instrumentation p. 7-1
- ▶ Supports VIII.A VIII.B VIII.C VIII.D VIII.E
 - ▶ Read the analog sections if your airplane has analog instruments.
- Straight-and-Level Flight (Pitch Control, Bank Control, Power Control, Trim Technique, Common Errors in Straight-and-Level Flight) · Straight Climbs and Descents (Climbs, Descents, Common Errors in Straight Climbs and Descents) · Turns (Standard Rate Turns, Turns to Predetermined Headings, Timed Turns, Compass Turns, Steep Turns, Climbing and Descending Turns, Change of Airspeed During Turns, Common Errors in Turns) · Approach to Stall · Unusual Attitudes and Recoveries (Recognizing Unusual Attitudes, Recovery from Unusual Attitudes, Nose-High Attitudes, Nose-Low Attitudes, Common Errors in Unusual Attitudes) · Instrument Takeoff (Common Errors in Instrument Takeoffs) · Basic Instrument Flight Patterns (Race-track Pattern, Procedure Turn, Standard 45° Procedure Turn, 80/260 Procedure Turn, Teardrop Patterns, Circling Approach Patterns)
- ☐ **Core** IFH ch 7 sec II Airplane Basic Flight Maneuvers Using an Electronic Flight Display p. 7-33
- ▶ Supports VIII.A VIII.B VIII.C VIII.D
 - ▶ Read the electronic flight display sections if your airplane has a glass panel.
- Straight-and-Level Flight (Pitch Control, Bank Control, Power Control, Trim Technique, Common Errors in Straight-and-Level Flight) · Straight Climbs and Descents (Entry, Descents, Entry, Common Errors in Straight Climbs and Descents) · Turns (Standard Rate Turns, Turns to Predetermined Headings, Timed Turns, Compass Turns, Steep Turns) · Instrument Takeoff (Common Errors in Instrument Takeoffs) · Basic Instrument Flight Patterns
- ☐ **Skip for ASEL** IFH ch 8 Helicopter Attitude Instrument Flying p. 8-1
- ☐ **Skim** IFH ch 9 Navigation Systems p. 9-1
- ▶ Supports VI.B VIII.F
- Basic Radio Principles (How Radio Waves Propagate, Disturbances to Radio Wave Reception) · Traditional Navigation Systems (Nondirectional Radio Beacon (NDB), Very High Frequency Omnidirectional Range (VOR), Distance Measuring Equipment (DME), Area Navigation (RNAV)) · Advanced Technologies (Global Navigation Satellite System (GNSS), Global Positioning System (GPS), Differential Global Positioning Systems (DGPS), Wide Area Augmentation System (WAAS), Local Area Augmentation System (LAAS), Inertial Navigation System (INS)) · Instrument Approach Systems (Instrument Landing Systems (ILS), Approach Lighting Systems (ALS), ILS Function, ILS Errors, Simplified Directional Facility (SDF), Localizer Type Directional Aid (LDA), Microwave Landing System (MLS)) · Required Navigation Performance · Flight Management Systems (FMS) (Function of FMS) · Head-Up Display (HUD) · Radar Navigation (Ground-Based) (Functions of Radar Navigation, Radar Limitations)
- ☐ **Skip for ASEL** IFH ch 10 IFR Flight p. 10-1
- ☐ **Skim** IFH ch 11 Emergency Operations p. 11-1
- ▶ Supports IX.C
- Unforecast Adverse Weather (Inadvertent Thunderstorm Encounter, Inadvertent Icing Encounter, Precipitation Static) · Aircraft System Malfunctions (Electronic Flight Display Malfunction, Alternator/Generator Failure, Techniques for Electrical Usage, Loss of Alternator/Generator for Electronic Flight Instrumentation, Techniques for Electrical Usage) · Analog Instrument Failure · Pneumatic System Failure · Pitot/Static System Failure · Communication/Navigation System Malfunction · GPS Nearest Airport Function (Nearest Airports Using the PFD, Nearest Airports Using the MFD) · Situational Awareness (Traffic Avoidance)
- ☐ **Skip for ASEL** IFH App. A Clearance Shorthand p. A-1
- ☐ **Skip for ASEL** IFH App. B Instrument Training Lesson Guide p. B-1

Weight & Balance Handbook

FAA-H-8083-1B (2016) with its October 2025 addendum

“Until the revision of FAA-H-8083-1B is published, this addendum is considered part of the current edition of the handbook and should be used as a reference.”

W&B Handbook addendum (MOSAIC rule published July 18, 2025, effective October 22, 2025)

- ☐ **Core** W&B Handbook ch 1 Weight and Balance Control p. 1-1
- Responsibility for Weight and Balance Control · Terminology · Weight Control · Effects of Weight · Weight Changes · Stability and Balance Control · Weight Control for Aircraft Other Than Fixed and Rotor-wing (Weight-Shift Control Aircraft, Powered Parachutes, Balloons) · Underestimating the Importance of Weight and Balance
- ☐ **Core** W&B Handbook ch 2 Weight and Balance Theory p. 2-1
- ▶ Supports I.F
- Weight and Balance Theory (Arm, Moment) · The Law of the Lever · Shifting the Balance Point or CG (Solution by Chart, Basic Weight and Balance Equation, Solution by Formula) · Mean Aerodynamic Chord · FAA-Furnished Weight and Balance Information (CG Range, Empty Weight CG Range (EWCG), Maximum Weights, Number of Seats, Maximum Baggage, Fuel Capacity, Oil Capacity (Wet Sump), Data Pertinent to all Models) · Manufacturer-Furnished Information
- ☐ **Skim** W&B Handbook ch 3 Weighing the Aircraft and Determining the Empty Weight Center of Gravity p. 3-1
- Requirements · Equipment for Weighing · Preparation for Weighing (Scale Preparation, Weigh Clean Aircraft Inside Hangar, Equipment List, Ballast, Standard Weights, Draining the Fuel, Oil, Other Fluids, Configuration of the Aircraft, Jacking the Aircraft, Leveling the Aircraft, Safety Considerations) · Determining the CG · EWCG Formulas (Datum Forward of the Airplane—Nosewheel Landing Gear, Datum Aft of the Main Wheels—Nosewheel Landing Gear) · Location of Datum (Datum Forward of the Main Wheels—Tailwheel Landing Gear, Datum Aft of the Main Wheels—Tailwheel Landing Gear) · Center of Gravity (CG) and Mean Aerodynamic Chord (MAC) (Center of Gravity (CG), Mean Aerodynamic Chord (MAC))
- ☐ **Skip for ASEL** W&B Handbook ch 4 Light Sport Aircraft Weight and Balance Control p. 4-1
- ☐ **Core** W&B Handbook ch 5 Single-Engine Aircraft Weight and Balance Computations p. 5-1
- ▶ Supports I.F
- Determining the Loaded Weight and CG (Manual Computational Method, Loading Graph Method)
- ☐ **Skip for ASEL** W&B Handbook ch 6 Multiengine Aircraft Weight and Balance Computations p. 6-1
- ☐ **Skim** W&B Handbook ch 7 Center of Gravity Change After a Repair or Alteration p. 7-1
- Equipment List · Major Alteration and Repair · Weight and Balance Revision Record · Weight Changes Caused by a Repair or Alteration (Computations Using Weight, Arm, and Moment, Computations Using Weight and Moment Indexes, Determining the CG in Percentage of Mean Aerodynamic Chord (Percent MAC)) · Empty Weight CG (EWCG) Range · Adverse-Load CG Checks (Forward Adverse-Load CG Check) · Ballast (Temporary Ballast, Temporary Ballast Formula, Permanent Ballast)
- ☐ **Skip for ASEL** W&B Handbook ch 8 Weight and Balance Control—Helicopter p. 8-1
- ☐ **Skip for ASEL** W&B Handbook ch 9 Weight and Balance Control—Commuter Category and Large Aircraft p. 9-1
- ☐ **Skim** W&B Handbook ch 10 Use of Computer for Weight and Balance Computations p. 10-1
- Electronic Calculator · E6-B Flight Computer · Dedicated Electronic Flight Computer (Typical Weight and Balance Problems, Determining CG in Inches From the Datum, Determining CG, Given Weights, and Arms, Determining CG, Given Weights, and Moment Indexes, Determining CG in Percent Mean Aerodynamic Chord (MAC), Determining Lateral CG of a Helicopter, Determining Δ CG Caused by Shifting Weights, Determining Weight Shifted to Cause Specified Δ CG, Determining Distance Weight Is Shifted to Move CG a Specific Distance, Determining Total Weight of an Aircraft With a Specified Δ CG When Cargo Is Move, Determining Amount of Ballast Needed to Move CG to a Desired Location)

► Section by section. Read each section's full text at [ecfr.gov](https://www.ecfr.gov).

Section titles from the eCFR, structure as of 2026-09-11.

14 CFR part 1 — Definitions and Abbreviations

- ☐ 1.1 General definitions.
- ☐ 1.2 Abbreviations and symbols.
- ☐ 1.3 Rules of construction.

14 CFR part 39 — Airworthiness Directives

- ☐ 39.1 Purpose of this regulation.
- ☐ 39.3 Definition of airworthiness directives.
- ☐ 39.5 When does FAA issue airworthiness directives?
- ☐ 39.7 What is the legal effect of failing to comply with an airworthiness directive?
- ☐ 39.9 What if I operate an aircraft or use a product that does not meet the requirements of an airworthiness directive?
- ☐ 39.11 What actions do airworthiness directives require?
- ☐ 39.13 Are airworthiness directives part of the Code of Federal Regulations?
- ☐ 39.15 Does an airworthiness directive apply if the product has been changed?
- ☐ 39.17 What must I do if a change in a product affects my ability to accomplish the actions required in an airworthiness directive?
- ☐ 39.19 May I address the unsafe condition in a way other than that set out in the airworthiness directive?
- ☐ 39.21 Where can I get information about FAA-approved alternative methods of compliance?
- ☐ 39.23 May I fly my aircraft to a repair facility to do the work required by an airworthiness directive?
- ☐ 39.25 How do I get a special flight permit?
- ☐ 39.27 What do I do if the airworthiness directive conflicts with the service document on which it is based?

14 CFR part 43 — Maintenance, Preventive Maintenance, Rebuilding, and Alteration

- ☐ 43.1 Applicability.
- ☐ 43.2 Records of overhaul and rebuilding.
- ☐ 43.3 Persons authorized to perform maintenance, preventive maintenance, rebuilding, and alterations.
- ☐ 43.5 Approval for return to service after maintenance, preventive maintenance, rebuilding, or alteration.
- ☐ 43.7 Persons authorized to approve aircraft, airframes, aircraft engines, propellers, appliances, or component parts for return to service after maintenance, preventive maintenance, rebuilding, or alteration.
- ☐ 43.9 Content, form, and disposition of maintenance, preventive maintenance, rebuilding, and alteration records (except inspections performed in accordance with part 91, part 125, § 135.411(a)(1), and § 135.419 of this chapter).
- ☐ 43.10 Disposition of life-limited aircraft parts.
- ☐ 43.11 Content, form, and disposition of records for inspections conducted under parts 91 and 125 and §§ 135.411(a)(1) and 135.419 of this chapter.
- ☐ 43.13 Performance rules (general).
- ☐ 43.15 Additional performance rules for inspections.
- ☐ 43.16 Airworthiness limitations.
- ☐ 43.17 Maintenance, preventive maintenance, and alterations performed on U.S. aeronautical products by certain Canadian persons.
- ☐ **Appendix A to Part 43 — Major Alterations, Major Repairs, and Preventive Maintenance**

14 CFR part 61 — Certification: Pilots, Flight Instructors, and Ground Instructors

Subpart A — General

- ☐ 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 re-issuance.
- ☐ 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.
- ☐ 61.19 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.
- ☐ 61.60 Change of address.

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.
- ☐ 61.93 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 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.

14 CFR part 67 — Medical Standards and Certification

Subpart A — General

- ☐ 67.1 Applicability.
- ☐ 67.3 Issue.
- ☐ 67.4 Application.
- ☐ 67.7 Access to the National Driver Register.

Subpart D — Third-Class Airman Medical Certificate

- ☐ 67.301 Eligibility.
- ☐ 67.303 Eye.
- ☐ 67.305 Ear, nose, throat, and equilibrium.
- ☐ 67.307 Mental.
- ☐ 67.309 Neurologic.
- ☐ 67.311 Cardiovascular.
- ☐ 67.313 General medical condition.
- ☐ 67.315 Discretionary issuance.

Subpart E — Certification Procedures

- ☐ 67.401 Special issuance of medical certificates.
- ☐ 67.405 Medical examinations: Who may perform?
- ☐ 67.407 Delegation of authority.
- ☐ 67.409 Denial of medical certificate.
- ☐ 67.413 Medical records.
- ☐ 67.415 Return of medical certificate after suspension or revocation.

14 CFR part 68 — Requirements for Operating Certain Small Aircraft Without a Medical Certificate

- ☐ 68.1 Applicability.
- ☐ 68.3 Medical education course requirements.
- ☐ 68.5 Comprehensive medical examination.
- ☐ 68.7 Comprehensive medical examination checklist.
- ☐ 68.9 Special Issuance process.
- ☐ 68.11 Authority to require additional information.

14 CFR part 71 — Designation of Class A, B, C, D, and E Airspace Areas; Air Traffic Service Routes; and Reporting Points

- ☐ 71.1 Applicability.
- ☐ 71.5 Reporting points.
- ☐ 71.7 Bearings, radials, and mileages.
- ☐ 71.9 Overlapping airspace designations.

- ☐ **71.11** Air Traffic Service (ATS) routes.
- ☐ **71.13** Classification of Air Traffic Service (ATS) routes.
- ☐ **71.15** Designation of jet routes and VOR Federal airways.

Subpart A — Class A Airspace

- ☐ **71.31** Class A airspace.
- ☐ **71.33** Class A airspace areas.

Subpart B — Class B Airspace

- ☐ **71.41** Class B airspace.

Subpart C — Class C Airspace

- ☐ **71.51** Class C airspace.

Subpart D — Class D Airspace

- ☐ **71.61** Class D airspace.

Subpart E — Class E Airspace

- ☐ **71.71** Class E airspace.

14 CFR part 91 — General Operating and Flight Rules

Subpart A — General

- ☐ **91.1** Applicability.
- ☐ **91.3** Responsibility and authority of the pilot in command.
- ☐ **91.5** Pilot in command of aircraft requiring more than one required pilot.
- ☐ **91.7** Civil aircraft airworthiness.
- ☐ **91.9** Civil aircraft flight manual, marking, and placard requirements.
- ☐ **91.11** Prohibition on interference with crewmembers.
- ☐ **91.13** Careless or reckless operation.
- ☐ **91.15** Dropping objects.
- ☐ **91.17** Alcohol or drugs.
- ☐ **91.19** Carriage of narcotic drugs, marihuana, and depressant or stimulant drugs or substances.
- ☐ **91.21** Portable electronic devices.
- ☐ **91.23** Truth-in-leasing clause requirement in leases and conditional sales contracts.
- ☐ **91.25** Aviation Safety Reporting Program: Prohibition against use of reports for enforcement purposes.

Subpart B — Flight Rules *General*

- ☐ **91.101** Applicability.
- ☐ **91.103** Preflight action.
- ☐ **91.105** Flight crewmembers at stations.
- ☐ **91.107** Use of safety belts, shoulder harnesses, and child restraint systems.
- ☐ **91.108** Use of supplemental restraint systems.
- ☐ **91.109** Flight instruction; Simulated instrument flight and certain flight tests.
- ☐ **91.111** Operating near other aircraft.
- ☐ **91.113** Right-of-way rules: Except water operations.
- ☐ **91.115** Right-of-way rules: Water operations.
- ☐ **91.117** Aircraft speed.
- ☐ **91.119** Minimum safe altitudes: General.
- ☐ **91.121** Altimeter settings.
- ☐ **91.123** Compliance with ATC clearances and instructions.
- ☐ **91.125** ATC light signals.
- ☐ **91.126** Operating on or in the vicinity of an airport in Class G airspace.
- ☐ **91.127** Operating on or in the vicinity of an airport in Class E airspace.
- ☐ **91.129** Operations in Class D airspace.
- ☐ **91.130** Operations in Class C airspace.
- ☐ **91.131** Operations in Class B airspace.
- ☐ **91.133** Restricted and prohibited areas.
- ☐ **91.135** Operations in Class A airspace.
- ☐ **91.137** Temporary flight restrictions in the vicinity of disaster/hazard areas.
- ☐ **91.138** Temporary flight restrictions in national disaster areas in the State of Hawaii.
- ☐ **91.139** Emergency air traffic rules.
- ☐ **91.141** Flight restrictions in the proximity of the Presidential and other parties.
- ☐ **91.143** Flight limitation in the proximity of space flight operations.
- ☐ **91.144** Temporary restriction on flight operations during abnormally high barometric pressure conditions.
- ☐ **91.145** Management of aircraft operations in the vicinity of aerial demonstrations and major sporting events.
- ☐ **91.146** Passenger-carrying flights for the benefit of a charitable, nonprofit, or community event.
- ☐ **91.147** Passenger-carrying flights for compensation or hire.

Visual Flight Rules

- ☐ **91.151** Fuel requirements for flight in VFR conditions.
- ☐ **91.153** VFR flight plan: Information required.
- ☐ **91.155** Basic VFR weather minimums.
- ☐ **91.157** Special VFR weather minimums.
- ☐ **91.159** VFR cruising altitude or flight level.
- ☐ **91.161** Special awareness training required for pilots flying under visual flight rules within a 60-nautical mile radius of the Washington, DC VOR/DME.

Subpart C — Equipment, Instrument, and Certificate Requirements

- ☐ **91.203** Civil aircraft: Certifications required.
- ☐ **91.205** Powered civil aircraft with standard U.S. airworthiness certificates: Instrument and equipment requirements.
- ☐ **91.207** Emergency locator transmitters.
- ☐ **91.209** Aircraft lights.
- ☐ **91.211** Supplemental oxygen.
- ☐ **91.213** Inoperative instruments and equipment.
- ☐ **91.215** ATC transponder and altitude reporting equipment and use.

- ☐ **91.217** Data correspondence between automatically reported pressure altitude data and the pilot's altitude reference.
- ☐ **91.219** Altitude alerting system or device: Turbojet-powered civil airplanes.
- ☐ **91.220** xxx
- ☐ **91.221** Traffic alert and collision avoidance system equipment and use.
- ☐ **91.223** Terrain awareness and warning system.
- ☐ **91.225** Automatic Dependent Surveillance-Broadcast (ADS-B) Out equipment and use.
- ☐ **91.227** Automatic Dependent Surveillance-Broadcast (ADS-B) Out equipment performance requirements.

Subpart D — Special Flight Operations

- ☐ **91.303** Aerobatic flight.
- ☐ **91.305** Flight test areas.
- ☐ **91.307** Parachutes and parachuting.
- ☐ **91.309** Towing: Gliders and unpowered ultralight vehicles.
- ☐ **91.311** Towing: Other than under § 91.309.
- ☐ **91.313** Restricted category civil aircraft: Operating limitations.
- ☐ **91.315** Limited category civil aircraft: Operating limitations.
- ☐ **91.317** Provisionally certificated civil aircraft: Operating limitations.
- ☐ **91.319** Aircraft having experimental certificates: Operating limitations.
- ☐ **91.321** Carriage of candidates in elections.
- ☐ **91.323** Increased maximum certificated weights for certain airplanes operated in Alaska.
- ☐ **91.325** Primary category aircraft: Operating limitations.
- ☐ **91.326** Exception to operating certain aircraft for the purposes of flight training, flightcrew member checking, or flightcrew member testing.
- ☐ **91.327** Aircraft issued a special airworthiness certificate in the light-sport category: Operating limitations.
- ☐ **91.331** Space support vehicle flights: Operating limitations.

Subpart E — Maintenance, Preventive Maintenance, and Alterations

- ☐ **91.401** Applicability.
- ☐ **91.403** General.
- ☐ **91.405** Maintenance required.
- ☐ **91.407** Operation after maintenance, preventive maintenance, rebuilding, or alteration.
- ☐ **91.409** Inspections.
- ☐ **91.411** Altimeter system and altitude reporting equipment tests and inspections.
- ☐ **91.413** ATC transponder tests and inspections.
- ☐ **91.415** Changes to aircraft inspection programs.
- ☐ **91.417** Maintenance records.
- ☐ **91.419** Transfer of maintenance records.
- ☐ **91.421** Rebuilt engine maintenance records.

14 CFR part 93 — Special Air Traffic Rules

- **Special air traffic rules for named areas. Know which ones apply where you fly.**

- ☐ Subpart A — General
- ☐ Subpart D — Anchorage, Alaska, Terminal Area
- ☐ Subpart E — Flight Restrictions in the Vicinity of Niagara Falls, New York
- ☐ Subpart F — Valparaiso, Florida, Terminal Area
- ☐ Subpart G — Special Flight Rules in the Vicinity of Los Angeles International Airport
- ☐ Subpart J — Lorain County Regional Airport Traffic Rule
- ☐ Subpart K — High Density Traffic Airports
- ☐ Subpart M — Ketchikan International Airport Traffic Rule
- ☐ Subpart N — Pearson Field (Vancouver, WA) Airport Traffic Rule
- ☐ Subpart O — Special Flight Rules in the Vicinity of Luke AFB, AZ
- ☐ Subpart S — Allocation of Commuter and Air Carrier IFR Operations at High Density Traffic Airports
- ☐ Subpart T — Ronald Reagan Washington National Airport Traffic Rules
- ☐ Subpart U — Special Flight Rules in the Vicinity of Grand Canyon National Park, AZ
- ☐ Subpart V — Washington, DC Metropolitan Area Special Flight Rules Area
- ☐ Subpart W — New York Class B Airspace Hudson River and East River Exclusion Special Flight Rules Area
- ☐ Subpart X — Flight Restrictions in the Vicinity of Ronald Reagan Washington National Airport

49 CFR part 830 — Notification and Reporting of Aircraft Accidents or Incidents and Overdue Aircraft, and Preservation of Aircraft Wreckage, Mail, Cargo, and Records

Subpart A — General

- ☐ **830.1** Applicability.
- ☐ **830.2** Definitions.

Subpart B — Initial Notification of Aircraft Accidents, Incidents, and Overdue Aircraft

- ☐ **830.5** Immediate notification.
- ☐ **830.6** Information to be given in notification.

Subpart C — Preservation of Aircraft Wreckage, Mail, Cargo, and Records

- ☐ **830.10** Preservation of aircraft wreckage, mail, cargo, and records.

Subpart D — Reporting of Aircraft Accidents, Incidents, and Overdue Aircraft

- ☐ **830.15** Reports and statements to be filed.

► Each task shows the ACS's own reference line and RunupLab's pointers for where to start.

Area of Operation I. Preflight Preparation

PA.I.A Pilot Qualifications

ACS references: 14 CFR parts 61, 68, 91; AC 68-1; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25 ► **Start with:**

PHAK ch 1 p. 1-16 Pilot Certifications · **PHAK ch 17 p. 17-2** Obtaining a Medical Certificate · **14 CFR 61.3** Requirement for certificates, ratings, privileges, and authorizations. · **14 CFR 61.23** Medical certificates: Requirement and duration. · **14 CFR 61.31** Type rating requirements, additional training, and authorization requirements. · **14 CFR 61.51** Pilot logbooks. · **14 CFR 61.56** Flight review. · **14 CFR 61.57** Recent flight experience: Pilot in command. · **14 CFR 61.113** Private pilot privileges and limitations: Pilot in command. · **14 CFR part 68** Requirements for Operating Certain Small Aircraft Without a Medical Certificate · **AC 68-1A** BasicMed · **14 CFR 91.3** Responsibility and authority of the pilot in command. · **RMH ch 2** Personal Minimums

Knowledge

- ☐ PA.I.A.K1 Certification requirements, recent flight experience, and recordkeeping.
- ☐ PA.I.A.K2 Privileges and limitations.
- ☐ PA.I.A.K3 Medical certificates: class, expiration, privileges, temporary disqualifications.
- ☐ PA.I.A.K4 Documents required to exercise private pilot privileges.
- ☐ PA.I.A.K5 Part 68 BasicMed privileges and limitations.

Risk management

- ☐ PA.I.A.R1 Proficiency versus currency.
- ☐ PA.I.A.R2 Flying unfamiliar aircraft or operating with unfamiliar flight display systems and avionics.

Skills

- ☐ PA.I.A.S1 Apply requirements to act as pilot-in-command (PIC) under Visual Flight Rules (VFR) in a scenario given by the evaluator.

PA.I.B Airworthiness Requirements

ACS references: 14 CFR parts 39, 43, 91; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25 ► **Start with:**

PHAK ch 9 Flight Manuals and Other Documents · **PHAK ch 3 p. 3-2** Aircraft Design, Certification, and Airworthiness · **14 CFR 91.7** Civil aircraft airworthiness. · **14 CFR 91.9** Civil aircraft flight manual, marking, and placard requirements. · **14 CFR 91.203** Civil aircraft: Certifications required. · **14 CFR 91.205** Powered civil aircraft with standard U.S. airworthiness certificates: Instrument and equipment requirements. · **14 CFR 91.207** Emergency locator transmitters. · **14 CFR 91.213** Inoperative instruments and equipment. · **14 CFR 91.403–91.417** 8 sections, from "General." to "Maintenance records." · **14 CFR part 39** Airworthiness Directives · **14 CFR 43.3** Persons authorized to perform maintenance, preventive maintenance, rebuilding, and alterations. · **14 CFR part 43 App. A** Major Alterations, Major Repairs, and Preventive Maintenance · **AC 91-67A** Minimum Equipment Requirements for General Aviation Operations Under 14 CFR Part 91, § 91.213

Knowledge

- ☐ PA.I.B.K1 General airworthiness requirements and compliance for airplanes, including:
 - ☐ PA.I.B.K1a a. Location and expiration dates of required aircraft certificates
 - ☐ PA.I.B.K1b b. Required inspections and airplane logbook documentation
 - ☐ PA.I.B.K1c c. Airworthiness Directives and Special Airworthiness Information Bulletins
 - ☐ PA.I.B.K1d d. Purpose and procedure for obtaining a special flight permit
 - ☐ PA.I.B.K1e e. Owner/Operator and pilot-in-command responsibilities
- ☐ PA.I.B.K2 Pilot-performed preventive maintenance.
- ☐ PA.I.B.K3 Equipment requirements for day and night VFR flight, including:
 - ☐ PA.I.B.K3a a. Flying with inoperative equipment
 - ☐ PA.I.B.K3b b. Using an approved Minimum Equipment List (MEL)
 - ☐ PA.I.B.K3c c. Kinds of Operation Equipment List (KOEL)
 - ☐ PA.I.B.K3d d. Required discrepancy records or placards
- ☐ PA.I.B.K4 Standard and special airworthiness certificates and their associated operational limitations.

Risk management

- ☐ PA.I.B.R1 Inoperative equipment discovered prior to flight.

Skills

- ☐ PA.I.B.S1 Locate and describe airplane airworthiness and registration information.
- ☐ PA.I.B.S2 Determine the airplane is airworthy in the scenario given by the evaluator.
- ☐ PA.I.B.S3 Apply appropriate procedures for operating with inoperative equipment in the scenario given by the evaluator.

PA.I.C Weather Information

ACS references: 14 CFR part 91; AC 91-92; AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25, FAA-H-8083-28 ► **Start with:**

PHAK ch 12 Weather Theory · **PHAK ch 13** Aviation Weather Services · **AC 91-92** Pilot's Guide to a Preflight Briefing · **AIM 7-1** Meteorology · **AWH Part 1** Overview of the United States Aviation Weather Service Program and Information · **AWH Part 2** Weather Theory and Aviation Hazards · **AWH ch 24** Observations · **AWH ch 25** Analysis · **AWH ch 26** Advisories · **AWH ch 27** Forecasts · **AWH ch 28** Aviation Weather Tools · **14 CFR 91.103** Preflight action.

Knowledge

- ☐ PA.I.C.K1 Sources of weather data (e.g., National Weather Service, Flight Service) for flight planning purposes.
- ☐ PA.I.C.K2 Acceptable weather products and resources required for preflight planning, current and forecast weather for departure, en route, and arrival phases of flight such as:
 - ☐ PA.I.C.K2a a. Airport Observations (METAR and SPECI) and Pilot Observations (PIREP)
 - ☐ PA.I.C.K2b b. Surface Analysis Chart, Ceiling and Visibility Chart (CVA)
 - ☐ PA.I.C.K2c c. Terminal Aerodrome Forecasts (TAF)
 - ☐ PA.I.C.K2d d. Graphical Forecasts for Aviation (GFA)
 - ☐ PA.I.C.K2e e. Wind and Temperature Aloft Forecast (FB)
 - ☐ PA.I.C.K2f f. Convective Outlook (AC)
 - ☐ PA.I.C.K2g g. Inflight Aviation Weather Advisories including Airmen's Meteorological Information (AIRMET), Significant Meteorological Information (SIGMET), and Convective SIGMET
- ☐ PA.I.C.K3 Meteorology applicable to the departure, en route, alternate, and destination under visual flight rules (VFR) in Visual Meteorological Conditions (VMC), including expected climate and hazardous conditions such as:
 - ☐ PA.I.C.K3a a. Atmospheric composition and stability
 - ☐ PA.I.C.K3b b. Wind (e.g., windshear, mountain wave, factors affecting wind, etc.)
 - ☐ PA.I.C.K3c c. Temperature and heat exchange
 - ☐ PA.I.C.K3d d. Moisture/precipitation

- ☐ PA.I.C.K3e e. Weather system formation, including air masses and fronts
- ☐ PA.I.C.K3f f. Clouds
- ☐ PA.I.C.K3g g. Turbulence
- ☐ PA.I.C.K3h h. Thunderstorms and microbursts
- ☐ PA.I.C.K3i i. Icing and freezing level information
- ☐ PA.I.C.K3j j. Fog/mist
- ☐ PA.I.C.K3k k. Frost
- ☐ PA.I.C.K3l l. Obstructions to visibility (e.g., smoke, haze, volcanic ash, etc.)
- ☐ PA.I.C.K4 Flight deck instrument displays of digital weather and aeronautical information.

Risk management

- ☐ PA.I.C.R1 Making the go/no-go and continue/divert decisions, including:
 - ☐ PA.I.C.R1a a. Circumstances that would make diversion prudent
 - ☐ PA.I.C.R1b b. Personal weather minimums
 - ☐ PA.I.C.R1c c. Hazardous weather conditions, including known or forecast icing or turbulence aloft
- ☐ PA.I.C.R2 Use and limitations of:
 - ☐ PA.I.C.R2a a. Installed onboard weather equipment
 - ☐ PA.I.C.R2b b. Aviation weather reports and forecasts
 - ☐ PA.I.C.R2c c. Inflight weather resources

Skills

- ☐ PA.I.C.S1 Use available aviation weather resources to obtain an adequate weather briefing.

- ☐ PA.I.C.S2 Analyze the implications of at least three of the conditions listed in K3a through K3l, using actual weather or weather conditions provided by the evaluator.
- ☐ PA.I.C.S3 Correlate weather information to make a go/no-go decision.

PA.I.D Cross-Country Flight Planning

ACS references: 14 CFR part 91; AIM; Chart Supplements; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; NOTAMS; VFR Navigation Charts ▶ **Start with:**

PHAK ch 16 Navigation · **AIM 5-1-3** Notice to Airmen (NOTAM) System · **AIM 5-1-5** Flight Plan - VFR Flights · **AIM 5-1-14** Closing VFR/DVFR Flight Plans · **AIM 5-6-13** Interception Procedures · **AIM 5-6-14** Interception Signals · **AIM 9-1** Types of Charts Available · **Charts** VFR Raster Charts · **Charts** Digital - Chart Supplement (d-CS) · **Charts** Aeronautical Chart Users' Guide · **14 CFR 91.103** Preflight action. · **14 CFR 91.119** Minimum safe altitudes: General. · **14 CFR 91.151** Fuel requirements for flight in VFR conditions. · **14 CFR 91.159** VFR cruising altitude or flight level. · **AC 91-78A** Use of Electronic Flight Bags

Knowledge

- ☐ PA.I.D.K1 Route planning, including consideration of different classes and special use airspace (SUA) and selection of appropriate and available navigation/communication systems and facilities.
 - ☐ PA.I.D.K1a a. Use of an electronic flight bag (EFB), if used
- ☐ PA.I.D.K2 Altitude selection accounting for terrain and obstacles, glide distance of airplane, VFR cruising altitudes, and effect of wind.
- ☐ PA.I.D.K3 Calculating:
 - ☐ PA.I.D.K3a a. Time, climb and descent rates, course, distance, heading, true airspeed, and groundspeed
 - ☐ PA.I.D.K3b b. Estimated time of arrival, including conversion to universal coordinated time (UTC)
 - ☐ PA.I.D.K3c c. Fuel requirements, including reserve
- ☐ PA.I.D.K4 Elements of a VFR flight plan.
- ☐ PA.I.D.K5 Procedures for filing, activating, and closing a VFR flight plan.
- ☐ PA.I.D.K6 Inflight intercept procedures.

Risk management

- ☐ PA.I.D.R1 Pilot.
- ☐ PA.I.D.R2 Aircraft.
- ☐ PA.I.D.R3 Environment (e.g., weather, airports, airspace, terrain, obstacles).
- ☐ PA.I.D.R4 External pressures.
- ☐ PA.I.D.R5 Limitations of air traffic control (ATC) services.
- ☐ PA.I.D.R6 Fuel planning.
- ☐ PA.I.D.R7 Use of an electronic flight bag (EFB), if used.

Skills

- ☐ PA.I.D.S1 Prepare, present, and explain a cross-country flight plan assigned by the evaluator, including a risk analysis based on real-time weather, to the first fuel stop.
- ☐ PA.I.D.S2 Apply pertinent information from appropriate and current aeronautical charts, Chart Supplements; Notices to Air Missions (NOTAMs) relative to airport, runway and taxiway closures; and other flight publications.
- ☐ PA.I.D.S3 Create a navigation plan and simulate filing a VFR flight plan.
- ☐ PA.I.D.S4 Recalculate fuel reserves based on a scenario provided by the evaluator.
- ☐ PA.I.D.S5 Use an electronic flight bag (EFB), if applicable.

PA.I.E National Airspace System

ACS references: 14 CFR parts 71, 91, 93; AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; VFR Navigation Charts ▶ **Start with:**

PHAK ch 15 Airspace · **AIM ch 3** Airspace · **AIM 5-6** National Security and Interception Procedures · **14 CFR 91.126–91.135** 7 sections, from "Operating on or in the vicinity of an airport in Class G airspace." to "Operations in Class A airspace." · **14 CFR 91.137–91.145** 7 sections, from "Temporary flight restrictions in the vicinity of disaster/hazard areas." to "Management of aircraft operations in the vicinity of aerial demonstrations and major sporting events." · **14 CFR 91.155** Basic VFR weather minimums. · **14 CFR 91.157** Special VFR weather minimums. · **14 CFR 91.215** ATC transponder and altitude reporting equipment and use. · **14 CFR 91.225** Automatic Dependent Surveillance-Broadcast (ADS-B) Out equipment and use. · **14 CFR part 71** Designation of Class A, B, C, D, and E Airspace Areas; Air Traffic Service Routes; and Reporting Points · **14 CFR part 93** Special Air Traffic Rules · **Charts** Aeronautical Chart Users' Guide

Knowledge

- ☐ PA.I.E.K1 Airspace classes and associated requirements and limitations.
- ☐ PA.I.E.K2 Chart symbols.
- ☐ PA.I.E.K3 Special use airspace (SUA), special flight rules areas (SFRA), temporary flight restrictions (TFR), and other airspace areas.
- ☐ PA.I.E.K4 Special visual flight rules (VFR) requirements.

Risk management

- ☐ PA.I.E.R1 Various classes and types of airspace.

Skills

- ☐ PA.I.E.S1 Identify and comply with the requirements for basic VFR weather minimums and flying in particular classes of airspace.
- ☐ PA.I.E.S2 Correctly identify airspace and operate in accordance with associated communication and equipment requirements.
- ☐ PA.I.E.S3 Identify the requirements for operating in SUA or within a TFR. Identify and comply with special air traffic rules (SATR) and SFRA operations, if applicable.

PA.I.F Performance and Limitations

ACS references: FAA-H-8083-1, FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ▶ **Start with:**

POH/AFM section 2 Limitations · **POH/AFM section 5** Performance · **POH/AFM section 6** Weight and Balance/Equipment List · **PHAK ch 10** Weight and Balance · **PHAK ch 11** Aircraft Performance · **PHAK ch 4** Principles of Flight · **PHAK ch 5** Aerodynamics of Flight · **W&B Handbook ch 2** Weight and Balance Theory · **W&B Handbook ch 5** Single-Engine Aircraft Weight and Balance Computations · **AWH App. C** Density Altitude Calculation · **14 CFR 91.9** Civil aircraft flight manual, marking, and placard requirements. · **14 CFR 91.103** Preflight action.

Knowledge

- ☐ PA.I.F.K1 Elements related to performance and limitations by explaining the use of charts, tables, and data to determine performance.
- ☐ PA.I.F.K2 Factors affecting performance, including:
 - ☐ PA.I.F.K2a a. Atmospheric conditions
 - ☐ PA.I.F.K2b b. Pilot technique
 - ☐ PA.I.F.K2c c. Airplane configuration
 - ☐ PA.I.F.K2d d. Airport environment
 - ☐ PA.I.F.K2e e. Loading [e.g., center of gravity (CG)]
 - ☐ PA.I.F.K2f f. Weight and balance
- ☐ PA.I.F.K3 Aerodynamics.

Risk management

- ☐ PA.I.F.R1 Use of performance charts, tables, and data.

- ☐ PA.I.F.R2 Airplane limitations.

- ☐ PA.I.F.R3 Possible differences between calculated performance and actual performance.

Skills

- ☐ PA.I.F.S1 Compute the weight and balance, correct out-of-CG loading errors and determine if the weight and balance remains within limits during all phases of flight.
- ☐ PA.I.F.S2 Use the appropriate airplane performance charts, tables, and data.

PA.I.G Operation of Systems

ACS references: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-23, FAA-H-8083-25; POH/AFM ► **Start with:**

POH/AFM section 7 Systems Description · **POH/AFM section 3** Emergency Procedures · **PHAK ch 6** Flight Controls · **PHAK ch 7** Aircraft Systems · **PHAK ch 8** Flight Instruments · **14 CFR 91.211** Supplemental oxygen.

Knowledge

- ☐ PA.I.G.K1 Airplane systems, including:
 - ☐ PA.I.G.K1a a. Primary flight controls
 - ☐ PA.I.G.K1b b. Secondary flight controls
 - ☐ PA.I.G.K1c c. Powerplant and propeller
 - ☐ PA.I.G.K1d d. Landing gear
 - ☐ PA.I.G.K1e e. Fuel, oil, and hydraulic
 - ☐ PA.I.G.K1f f. Electrical
 - ☐ PA.I.G.K1g g. Avionics
 - ☐ PA.I.G.K1h h. Pitot-static, vacuum/pressure, and associated flight instruments
 - ☐ PA.I.G.K1i i. Environmental
 - ☐ PA.I.G.K1j j. Deicing and anti-icing
 - ☐ PA.I.G.K1k k. Water rudders (ASES, AMES)
 - ☐ PA.I.G.K1l l. Oxygen system
- ☐ PA.I.G.K2 Indications of and procedures for managing system abnormalities or failures.

Risk management

- ☐ PA.I.G.R1 Detection of system malfunctions or failures.
- ☐ PA.I.G.R2 Management of a system failure.
- ☐ PA.I.G.R3 Monitoring and management of automated systems.

Skills

- ☐ PA.I.G.S1 Operate at least three of the systems listed in K1a through K1l appropriately.
- ☐ PA.I.G.S2 Complete the appropriate checklist(s).

PA.I.H Human Factors

ACS references: AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25 ► **Start with:**

PHAK ch 17 Aeromedical Factors · **PHAK ch 2** Aeronautical Decision-Making · **AIM 8-1** Fitness for Flight · **IFH ch 3** Human Factors · **RMH ch 8** Aeronautical Decision-Making in Flight · **14 CFR 91.17** Alcohol or drugs. · **14 CFR 61.15** Offenses involving alcohol or drugs. · **14 CFR 61.53** Prohibition on operations during medical deficiency.

Knowledge

- ☐ PA.I.H.K1 Symptoms, recognition, causes, effects, and corrective actions associated with aeromedical and physiological issues, including:
 - ☐ PA.I.H.K1a a. Hypoxia
 - ☐ PA.I.H.K1b b. Hyperventilation
 - ☐ PA.I.H.K1c c. Middle ear and sinus problems
 - ☐ PA.I.H.K1d d. Spatial disorientation
 - ☐ PA.I.H.K1e e. Motion sickness
 - ☐ PA.I.H.K1f f. Carbon monoxide poisoning
 - ☐ PA.I.H.K1g g. Stress
 - ☐ PA.I.H.K1h h. Fatigue
 - ☐ PA.I.H.K1i i. Dehydration and nutrition
 - ☐ PA.I.H.K1j j. Hypothermia
 - ☐ PA.I.H.K1k k. Optical illusions
 - ☐ PA.I.H.K1l l. Dissolved nitrogen in the bloodstream after scuba dives
- ☐ PA.I.H.K2 Regulations regarding use of alcohol and drugs.
- ☐ PA.I.H.K3 Effects of alcohol, drugs, and over-the-counter medications.
- ☐ PA.I.H.K4 Aeronautical Decision-Making (ADM) to include using Crew Resource Management (CRM) or Single-Pilot Resource Management (SRM), as appropriate.

Risk management

- ☐ PA.I.H.R1 Aeromedical and physiological issues.
- ☐ PA.I.H.R2 Hazardous attitudes.
- ☐ PA.I.H.R3 Distractions, task prioritization, loss of situational awareness, or disorientation.
- ☐ PA.I.H.R4 Confirmation and expectation bias.

Skills

- ☐ PA.I.H.S1 Associate the symptoms and effects for at least three of the conditions listed in K1a through K1l with the cause(s) and corrective action(s).
- ☐ PA.I.H.S2 Perform self-assessment, including fitness for flight and personal minimums, for actual flight or a scenario given by the evaluator.

Area of Operation II. Preflight Procedures

PA.II.A Preflight Assessment

ACS references: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-23, FAA-H-8083-25, FAA-H-8083-28; POH/AFM ► **Start with:**

AFH ch 2 p. 2-1 Preflight Assessment of the Aircraft · **POH/AFM section 4** Normal Procedures · **PHAK ch 2** Aeronautical Decision-Making · **RMH ch 2** Personal Minimums · **RMH ch 3** Identifying Hazards & Associated Risks · **14 CFR 91.7** Civil aircraft airworthiness. · **14 CFR 91.103** Preflight action.

Knowledge

- ☐ PA.II.A.K1 Pilot self-assessment.
- ☐ PA.II.A.K2 Determining that the airplane to be used is appropriate and airworthy.
- ☐ PA.II.A.K3 Airplane preflight inspection, including:
 - ☐ PA.II.A.K3a a. Which items should be inspected
 - ☐ PA.II.A.K3b b. The reasons for checking each item
 - ☐ PA.II.A.K3c c. How to detect possible defects
 - ☐ PA.II.A.K3d d. The associated regulations
- ☐ PA.II.A.K4 Environmental factors, including weather, terrain, route selection, and obstructions.

Risk management

- ☐ PA.II.A.R1 Pilot.
- ☐ PA.II.A.R2 Aircraft.
- ☐ PA.II.A.R3 Environment (e.g., weather, airports, airspace, terrain, obstacles).
- ☐ PA.II.A.R4 External pressures.
- ☐ PA.II.A.R5 Aviation security concerns.

Skills

- ☐ PA.II.A.S1 Inspect the airplane with reference to an appropriate checklist.
- ☐ PA.II.A.S2 Verify the airplane is in condition for safe flight and conforms to its type design.
- ☐ PA.II.A.S3 Perform self-assessment.
- ☐ PA.II.A.S4 Continue to assess the environment for safe flight.

PA.II.B Flight Deck Management

ACS references: 14 CFR part 91; AC 120-71; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ▶ **Start with:**

AFH ch 1 p. 1-10 Safety Considerations · **AFH ch 2 p. 2-12** Risk and Resource Management · **POH/AFM section 4** Normal Procedures · **AC 120-71B** Standard Operating Procedures and Pilot Monitoring Duties for Flight Deck Crewmembers · **AC 91-78A** Use of Electronic Flight Bags · **14 CFR 91.105** Flight crewmembers at stations. · **14 CFR 91.107** Use of safety belts, shoulder harnesses, and child restraint systems.

Knowledge

- ☐ PA.II.B.K1 Passenger briefing requirements, including operation and required use of safety restraint systems.
- ☐ PA.II.B.K2 Use of appropriate checklists.
- ☐ PA.II.B.K3 Requirements for current and appropriate navigation data.
- ☐ PA.II.B.K4 Securing items and cargo.

Risk management

- ☐ PA.II.B.R1 Use of systems or equipment, including automation and portable electronic devices.
- ☐ PA.II.B.R2 Inoperative equipment.
- ☐ PA.II.B.R3 Passenger distractions.

Skills

- ☐ PA.II.B.S1 Secure all items in the aircraft.
- ☐ PA.II.B.S2 Conduct an appropriate passenger briefing, including identifying the pilot-in-command (PIC), use of safety belts, shoulder harnesses, doors, passenger conduct, sterile aircraft, propeller blade avoidance, and emergency procedures.
- ☐ PA.II.B.S3 Properly program and manage the aircraft's automation, as applicable.
- ☐ PA.II.B.S4 Appropriately manage risks by utilizing ADM, including SRM/CRM.

PA.II.C Engine Starting

ACS references: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ▶ **Start with:**

POH/AFM section 4 Normal Procedures · **AFH ch 2 p. 2-16** Engine Starting · **AFH ch 2 p. 2-16** Hand Propping · **PHAK ch 7** Aircraft Systems

Knowledge

- ☐ PA.II.C.K1 Starting under various conditions.
- ☐ PA.II.C.K2 Starting the engine(s) by use of external power.
- ☐ PA.II.C.K3 Limitations associated with starting.
- ☐ PA.II.C.K4 Conditions leading to and procedures for an aborted start.

Risk management

- ☐ PA.II.C.R1 Propeller safety.

Skills

- ☐ PA.II.C.S1 Position the airplane properly considering structures, other aircraft, wind, and the safety of nearby persons and property.
- ☐ PA.II.C.S2 Complete the appropriate checklist(s).

PA.II.D Taxiing (ASEL, AMEL)

ACS references: AC 91-73; AIM; Chart Supplements; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ▶ **Start with:**

AFH ch 2 p. 2-18 Taxiing · **AFH ch 1 p. 1-10** Safety Considerations · **AC 91-73B** Parts 91 and 135 Single Pilot, Flight School Procedures During Taxi Operations · **AIM 2-3** Airport Marking Aids and Signs · **AIM 4-3-18** Taxiing · **AIM 4-3-19** Taxi During Low Visibility · **AIM 4-3-20** Standard Taxi Routes · **AIM 4-3-24** Use of Aircraft Lights · **PHAK ch 14 p. 14-5** Airport Markings and Signs · **PHAK App. C** Airport Signs and Markings · **Charts** Digital - Chart Supplement (d-CS) · **AIM 5-1-3** Notice to Airmen (NOTAM) System

Knowledge

- ☐ PA.II.D.K1 Current airport aeronautical references and information resources such as the Chart Supplement, airport diagram, and Notices to Air Missions (NOTAMs).
- ☐ PA.II.D.K2 Taxi instructions/clearances.
- ☐ PA.II.D.K3 Airport markings, signs, and lights.
- ☐ PA.II.D.K4 Visual indicators for wind.
- ☐ PA.II.D.K5 Aircraft lighting, as appropriate.
- ☐ PA.II.D.K6 Procedures for:
 - ☐ PA.II.D.K6a a. Appropriate flight deck activities prior to taxi, including route planning and identifying the location of Hot Spots
 - ☐ PA.II.D.K6b b. Radio communications at towered and nontowered airports
 - ☐ PA.II.D.K6c c. Entering or crossing runways
 - ☐ PA.II.D.K6d d. Night taxi operations
 - ☐ PA.II.D.K6e e. Low visibility taxi operations

Risk management

- ☐ PA.II.D.R1 Activities and distractions.
- ☐ PA.II.D.R2 Confirmation or expectation bias as related to taxi instructions.
- ☐ PA.II.D.R3 A taxi route or departure runway change.
- ☐ PA.II.D.R4 Runway incursion.

Skills

- ☐ PA.II.D.S1 Receive and correctly read back clearances/instructions, if applicable.
- ☐ PA.II.D.S2 Use an airport diagram or taxi chart during taxi, if published, and maintain situational awareness.
- ☐ PA.II.D.S3 Position the flight controls for the existing wind, if applicable.
- ☐ PA.II.D.S4 Complete the appropriate checklist(s).
- ☐ PA.II.D.S5 Perform a brake check immediately after the airplane begins moving.
- ☐ PA.II.D.S6 Maintain positive control of the airplane during ground operations by controlling direction and speed without excessive use of brakes.
- ☐ PA.II.D.S7 Comply with airport/taxiway markings, signals, and air traffic control (ATC) clearances and instructions.
- ☐ PA.II.D.S8 Position the airplane properly relative to hold lines.

PA.II.F Before Takeoff Check

ACS references: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-23, FAA-H-8083-25; POH/AFM ▶ **Start with:**

POH/AFM section 4 Normal Procedures · **AFH ch 2 p. 2-21** Before Takeoff Check · **PHAK ch 7** Aircraft Systems

Knowledge

- ☐ PA.II.F.K1 Purpose of before takeoff checklist items, including:
 - ☐ PA.II.F.K1a a. Reasons for checking each item
 - ☐ PA.II.F.K1b b. Detecting malfunctions
 - ☐ PA.II.F.K1c c. Ensuring the aircraft is in safe operating condition as recommended by the manufacturer

Risk management

- ☐ PA.II.F.R1 Division of attention while conducting before takeoff checks.
- ☐ PA.II.F.R2 Unexpected runway changes by air traffic control (ATC).
- ☐ PA.II.F.R3 Wake turbulence.
- ☐ PA.II.F.R4 Potential powerplant failure during takeoff or other malfunction considering operational factors such as airplane characteristics, runway/takeoff path length, surface conditions, environmental conditions, and obstructions.

Skills

- ☐ PA.II.F.S1 Review takeoff performance.
- ☐ PA.II.F.S2 Complete the appropriate checklist(s).
- ☐ PA.II.F.S3 Position the airplane appropriately considering wind direction and the presence of any aircraft, vessels, or buildings as applicable.
- ☐ PA.II.F.S4 Divide attention inside and outside the flight deck.
- ☐ PA.II.F.S5 Verify that engine parameters and airplane configuration are suitable.

Area of Operation III. Airport and Seaplane Base Operations

PA.III.A Communications, Light Signals, and Runway Lighting Systems

ACS references: 14 CFR part 91; AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25 ▶ **Start with:**

AIM 4-1-13 Automatic Terminal Information Service (ATIS) · **AIM 4-1-17** Radar Assistance to VFR Aircraft · **AIM 4-1-20** Transponder and ADS-B Out Operation · **AIM 4-2** Radio Communications Phraseology and Techniques · **AIM 4-3-13** Traffic Control Light Signals · **AIM 6-4** Two-way Radio Communications Failure · **AIM 2-1-6** Runway Status Light (RWSL) System · **AIM 7-7-2** Aircraft Accident and Incident Reporting · **PHAK ch 14 p. 14-22** Radio Communications · **PHAK ch 14 p. 14-24** Air Traffic Control (ATC) Services · **14 CFR 91.125** ATC light signals. · **14 CFR 91.215** ATC transponder and altitude reporting equipment and use. · **49 CFR part 830** Notification and Reporting of Aircraft Accidents or Incidents and Overdue Aircraft, and Preservation of Aircraft Wreckage, Mail, Cargo, and Records

Knowledge

- ☐ PA.III.A.K1 How to obtain appropriate radio frequencies.
- ☐ PA.III.A.K2 Proper radio communication procedures and air traffic control (ATC) phraseology.
- ☐ PA.III.A.K3 ATC light signal recognition.
- ☐ PA.III.A.K4 Appropriate use of transponder(s).
- ☐ PA.III.A.K5 Lost communication procedures.
- ☐ PA.III.A.K6 Equipment issues that could cause loss of communication.
- ☐ PA.III.A.K7 Radar assistance.
- ☐ PA.III.A.K8 National Transportation Safety Board (NTSB) accident/incident reporting.
- ☐ PA.III.A.K9 Runway Status Lighting Systems.

Risk management

- ☐ PA.III.A.R1 Communication.
- ☐ PA.III.A.R2 Deciding if and when to declare an emergency.
- ☐ PA.III.A.R3 [Archived]
- ☐ PA.III.A.R4 Use of non-standard phraseology.

Skills

- ☐ PA.III.A.S1 Select and activate appropriate frequencies.
- ☐ PA.III.A.S2 Transmit using standard phraseology and procedures as specified in the Aeronautical Information Manual (AIM) and Pilot/Controller Glossary.
- ☐ PA.III.A.S3 Acknowledge radio communications and comply with ATC instructions or as directed by the evaluator.

PA.III.B Traffic Patterns

ACS references: 14 CFR part 91; AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25 ▶ **Start with:**

AFH ch 8 Airport Traffic Patterns · **AIM 4-3-2** Airports with an Operating Control Tower · **AIM 4-3-3** Traffic Patterns · **AIM 4-3-4** Visual Indicators at Airports Without an Operating Control Tower · **AIM 4-1-9** Traffic Advisory Practices at Airports Without Operating Control Towers · **AIM 4-3-27** Operations at Uncontrolled Airports With Automated Surface Observing System (ASOS)/Automated Weather Observing System (AWOS) · **PHAK ch 14 p. 14-20** Traffic Patterns · **14 CFR 91.113** Right-of-way rules: Except water operations. · **14 CFR 91.126–91.130** 4 sections, from “Operating on or in the vicinity of an airport in Class G airspace.” to “Operations in Class C airspace.” · **AC 90-66C** Non-Towered Airport Flight Operations

Knowledge

- ☐ PA.III.B.K1 Towered and nontowered airport operations.
- ☐ PA.III.B.K2 Traffic pattern selection for the current conditions.
- ☐ PA.III.B.K3 Right-of-way rules.
- ☐ PA.III.B.K4 Use of automated weather and airport information.

Risk management

- ☐ PA.III.B.R1 Collision hazards.
- ☐ PA.III.B.R2 Distractions, task prioritization, loss of situational awareness, or disorientation.
- ☐ PA.III.B.R3 Windshear and wake turbulence.

Skills

- ☐ PA.III.B.S1 Identify and interpret airport/seaplane base runways, taxiways, markings, signs, and lighting.
- ☐ PA.III.B.S2 Comply with recommended traffic pattern procedures.
- ☐ PA.III.B.S3 Correct for wind drift to maintain the proper ground track.
- ☐ PA.III.B.S4 Maintain orientation with the runway/landing area in use.
- ☐ PA.III.B.S5 Maintain traffic pattern altitude, ±100 feet, and the appropriate airspeed, ±10 knots.
- ☐ PA.III.B.S6 Maintain situational awareness and proper spacing from other aircraft in the traffic pattern.

Area of Operation IV. Takeoffs, Landings, and Go-Arounds

PA.IV.A Normal Takeoff and Climb

ACS references: AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-23, FAA-H-8083-25; POH/AFM ▶ **Start with:**

AFH ch 6 Takeoffs and Departure Climbs · **POH/AFM section 4** Normal Procedures · **POH/AFM section 5** Performance · **PHAK ch 11** Aircraft Performance · **AIM 7-4** Wake Turbulence

Knowledge

- ☐ PA.IV.A.K1 Effects of atmospheric conditions, including wind, on takeoff and climb performance.
- ☐ PA.IV.A.K2 Best angle of climb speed (VX) and best rate of climb speed (VY).
- ☐ PA.IV.A.K3 Appropriate airplane configuration.

Risk management

- ☐ PA.IV.A.R1 Selection of runway or takeoff path based on aircraft performance and limitations, available distance, and wind.
- ☐ PA.IV.A.R2 Effects of:
 - ☐ PA.IV.A.R2a a. Crosswind
 - ☐ PA.IV.A.R2b b. Windshear
 - ☐ PA.IV.A.R2c c. Tailwind
 - ☐ PA.IV.A.R2d d. Wake turbulence
 - ☐ PA.IV.A.R2e e. Takeoff surface/condition
- ☐ PA.IV.A.R3 Abnormal operations, including planning for:

- ☐ PA.IV.A.R3a a. Rejected takeoff
- ☐ PA.IV.A.R3b b. Potential engine failure in takeoff/climb phase of flight
- ☐ PA.IV.A.R4 Collision hazards.
- ☐ PA.IV.A.R5 Low altitude maneuvering, including stall, spin, or controlled flight into terrain (CFIT).
- ☐ PA.IV.A.R6 Distractions, task prioritization, loss of situational awareness, or disorientation.
- ☐ PA.IV.A.R7 Runway incursion.

Skills

- ☐ PA.IV.A.S1 Complete the appropriate checklist(s).
- ☐ PA.IV.A.S2 Make radio calls as appropriate.
- ☐ PA.IV.A.S3 Verify assigned/correct runway or takeoff path.
- ☐ PA.IV.A.S4 Determine wind direction with or without visible wind direction indicators.
- ☐ PA.IV.A.S5 Position the flight controls for the existing wind, if applicable.

- ☐ PA.IV.A.S6 Clear the area, taxi into takeoff position, and align the airplane on the runway centerline (ASEL, AMEL) or takeoff path (ASES, AMES).
 - ☐ PA.IV.A.S6a a. Retract the water rudders, as appropriate (ASES, AMES)
- ☐ PA.IV.A.S7 Advance the throttle smoothly to takeoff power and confirm proper engine and flight instrument indications prior to rotation.
 - ☐ PA.IV.A.S7a a. Establish and maintain the most efficient planing/lift-off attitude, and correct for porpoising or skipping (ASES, AMES)
- ☐ PA.IV.A.S8 Avoid excessive water spray on the propeller(s) (ASES, AMES).
- ☐ PA.IV.A.S9 Rotate and lift off at the recommended airspeed and accelerate to VY.
- ☐ PA.IV.A.S10 [Archived]
- ☐ PA.IV.A.S11 Establish a pitch attitude to maintain the manufacturer's recommended speed or VY, +10/-5 knots.
- ☐ PA.IV.A.S12 Configure the airplane in accordance with manufacturer's guidance.
- ☐ PA.IV.A.S13 Maintain VY +10/-5 knots to a safe maneuvering altitude.
- ☐ PA.IV.A.S14 Maintain directional control and proper wind-drift correction throughout takeoff and climb.
- ☐ PA.IV.A.S15 Comply with noise abatement procedures, as applicable.

PA.IV.B Normal Approach and Landing

ACS references: AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-23, FAA-H-8083-25; POH/AFM ► **Start with:**

AFH ch 9 p. 9-2 Normal Approach and Landing · **AFH ch 9 p. 9-15** Crosswind Approach and Landing · **AFH ch 4** Energy Management: Mastering Altitude and Airspeed Control · **POH/AFM section 4** Normal Procedures · **POH/AFM section 5** Performance · **AIM 2-1-2** Visual Glideslope Indicators · **AIM 7-4** Wake Turbulence

Knowledge

- ☐ PA.IV.B.K1 A stabilized approach, including energy management concepts.
- ☐ PA.IV.B.K2 Effects of atmospheric conditions, including wind, on approach and landing performance.
- ☐ PA.IV.B.K3 Wind correction techniques on approach and landing.

Risk management

- ☐ PA.IV.B.R1 Selection of runway/landing surface, approach path, and touchdown area based on pilot capability, aircraft performance and limitations, available distance, and wind.
- ☐ PA.IV.B.R2 Effects of:
 - ☐ PA.IV.B.R2a a. Crosswind
 - ☐ PA.IV.B.R2b b. Windshear
 - ☐ PA.IV.B.R2c c. Tailwind
 - ☐ PA.IV.B.R2d d. Wake turbulence
 - ☐ PA.IV.B.R2e e. Landing surface/condition
- ☐ PA.IV.B.R3 Planning for:
 - ☐ PA.IV.B.R3a a. Rejected landing and go-around
 - ☐ PA.IV.B.R3b b. Land and hold short operations (LAHSO)
- ☐ PA.IV.B.R4 Collision hazards.
- ☐ PA.IV.B.R5 Low altitude maneuvering, including stall, spin, or controlled flight into terrain (CFIT).
- ☐ PA.IV.B.R6 Distractions, task prioritization, loss of situational awareness, or disorientation.

Skills

- ☐ PA.IV.B.S1 Complete the appropriate checklist(s).
- ☐ PA.IV.B.S2 Make radio calls as appropriate.
- ☐ PA.IV.B.S3 Ensure the airplane is aligned with the correct/assigned runway or landing surface.
- ☐ PA.IV.B.S4 Scan the runway or landing surface and adjoining area for traffic and obstructions.
- ☐ PA.IV.B.S5 Select and aim for a suitable touchdown point considering the wind conditions, landing surface, and obstructions.
- ☐ PA.IV.B.S6 Establish the recommended approach and landing configuration, airspeed, and trim, and adjust pitch attitude and power as required to maintain a stabilized approach.
- ☐ PA.IV.B.S7 Maintain manufacturer's published approach airspeed or in its absence not more than 1.3 times the stalling speed or the minimum steady flight speed in the landing configuration (VSO), +10/-5 knots with gust factor applied.
- ☐ PA.IV.B.S8 Maintain directional control and appropriate crosswind correction throughout the approach and landing.
- ☐ PA.IV.B.S9 Make smooth, timely, and correct control application during round out and touchdown.
- ☐ PA.IV.B.S10 Touch down at a proper pitch attitude, within 400 feet beyond or on the specified point, with no side drift, and with the airplane's longitudinal axis aligned with and over the runway center/landing path.
- ☐ PA.IV.B.S11 Execute a timely go-around if the approach cannot be made within the tolerances specified above or for any other condition that may result in an unsafe approach or landing.
- ☐ PA.IV.B.S12 Use runway incursion avoidance procedures, if applicable.

PA.IV.C Soft-Field Takeoff and Climb (ASEL)

ACS references: AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ► **Start with:**

AFH ch 6 Takeoffs and Departure Climbs · **POH/AFM section 4** Normal Procedures · **POH/AFM section 5** Performance · **PHAK ch 5** Aerodynamics of Flight

Knowledge

- ☐ PA.IV.C.K1 Effects of atmospheric conditions, including wind, on takeoff and climb performance.
- ☐ PA.IV.C.K2 Best angle of climb speed (VX) and best rate of climb speed (VY).
- ☐ PA.IV.C.K3 Appropriate airplane configuration.
- ☐ PA.IV.C.K4 Ground effect.
- ☐ PA.IV.C.K5 Importance of weight transfer from wheels to wings.
- ☐ PA.IV.C.K6 Left turning tendencies.

Risk management

- ☐ PA.IV.C.R1 Selection of runway based on pilot capability, airplane performance and limitations, available distance, and wind.
- ☐ PA.IV.C.R2 Effects of:
 - ☐ PA.IV.C.R2a a. Crosswind
 - ☐ PA.IV.C.R2b b. Windshear
 - ☐ PA.IV.C.R2c c. Tailwind

- ☐ PA.IV.C.R2d d. Wake turbulence
- ☐ PA.IV.C.R2e e. Takeoff surface/condition
- ☐ PA.IV.C.R3 Abnormal operations, including planning for:
 - ☐ PA.IV.C.R3a a. Rejected takeoff
 - ☐ PA.IV.C.R3b b. Potential engine failure in takeoff/climb phase of flight
- ☐ PA.IV.C.R4 Collision hazards.
- ☐ PA.IV.C.R5 Low altitude maneuvering, including stall, spin, or controlled flight into terrain (CFIT).
- ☐ PA.IV.C.R6 Distractions, task prioritization, loss of situational awareness, or disorientation.

Skills

- ☐ PA.IV.C.S1 Complete the appropriate checklist(s).
- ☐ PA.IV.C.S2 Make radio calls as appropriate.
- ☐ PA.IV.C.S3 Verify assigned/correct runway.

- ☐ PA.IV.C.S4 Determine wind direction with or without visible wind direction indicators.
- ☐ PA.IV.C.S5 Position the flight controls for the existing wind, if applicable.
- ☐ PA.IV.C.S6 Clear the area, maintain necessary flight control inputs, taxi into takeoff position and align the airplane on the runway centerline without stopping, while advancing the throttle smoothly to takeoff power.
- ☐ PA.IV.C.S7 Confirm takeoff power and proper engine and flight instrument indications.
- ☐ PA.IV.C.S8 Establish and maintain a pitch attitude that transfers the weight of the airplane from the wheels to the wings as rapidly as possible.
- ☐ PA.IV.C.S9 Lift off at the lowest possible airspeed and remain in ground effect while accelerating to VX or VY, as appropriate.
- ☐ PA.IV.C.S10 Establish a pitch attitude for VX or VY, as appropriate, and maintain selected airspeed +10/-5 knots during the climb.
- ☐ PA.IV.C.S11 Configure the airplane after a positive rate of climb has been verified or in accordance with airplane manufacturer's instructions.
- ☐ PA.IV.C.S12 Maintain VX or VY, as appropriate, +10/-5 knots to a safe maneuvering altitude.
- ☐ PA.IV.C.S13 Maintain directional control and proper wind-drift correction throughout takeoff and climb.
- ☐ PA.IV.C.S14 Comply with noise abatement procedures, as applicable.

PA.IV.D Soft-Field Approach and Landing (ASEL)

ACS references: AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ▶ **Start with:**

AFH ch 9 p. 9-23 Soft-Field Approach and Landing · **POH/AFM section 4** Normal Procedures · **POH/AFM section 5** Performance

Knowledge

- ☐ PA.IV.D.K1 A stabilized approach, including energy management concepts.
- ☐ PA.IV.D.K2 Effects of atmospheric conditions, including wind, on approach and landing performance.
- ☐ PA.IV.D.K3 Wind correction techniques on approach and landing.

Risk management

- ☐ PA.IV.D.R1 Selection of runway based on pilot capability, airplane performance and limitations, available distance, and wind.
- ☐ PA.IV.D.R2 Effects of:
 - ☐ PA.IV.D.R2a a. Crosswind
 - ☐ PA.IV.D.R2b b. Windshear
 - ☐ PA.IV.D.R2c c. Tailwind
 - ☐ PA.IV.D.R2d d. Wake turbulence
 - ☐ PA.IV.D.R2e e. Landing surface/condition
- ☐ PA.IV.D.R3 Planning for:
 - ☐ PA.IV.D.R3a a. Rejected landing and go-around
 - ☐ PA.IV.D.R3b b. Land and hold short operations (LAHSO)
- ☐ PA.IV.D.R4 Collision hazards.
- ☐ PA.IV.D.R5 Low altitude maneuvering, including stall, spin, or controlled flight into terrain (CFIT).
- ☐ PA.IV.D.R6 Distractions, task prioritization, loss of situational awareness, or disorientation.

Skills

- ☐ PA.IV.D.S1 Complete the appropriate checklist(s).
- ☐ PA.IV.D.S2 Make radio calls as appropriate.
- ☐ PA.IV.D.S3 Ensure the airplane is aligned with the correct/assigned runway.
- ☐ PA.IV.D.S4 Scan the landing runway and adjoining area for traffic and obstructions.
- ☐ PA.IV.D.S5 Select and aim for a suitable touchdown point considering the wind conditions, landing surface, and obstructions.
- ☐ PA.IV.D.S6 Establish the recommended approach and landing configuration, airspeed, and trim, and adjust pitch attitude and power as required to maintain a stabilized approach.
- ☐ PA.IV.D.S7 Maintain manufacturer's published approach airspeed or in its absence not more than 1.3 VSO, +10/-5 knots with gust factor applied.
- ☐ PA.IV.D.S8 Maintain directional control and appropriate crosswind correction throughout the approach and landing.
- ☐ PA.IV.D.S9 Make smooth, timely, and correct control inputs during the round out and touchdown, and, for tricycle gear airplanes, keep the nose wheel off the surface until loss of elevator effectiveness.
- ☐ PA.IV.D.S10 Touch down at a proper pitch attitude with minimum sink rate, no side drift, and with the airplane's longitudinal axis aligned with the center of the runway.
- ☐ PA.IV.D.S11 Maintain elevator as recommended by manufacturer during rollout and exit the "soft" area at a speed that would preclude sinking into the surface.
- ☐ PA.IV.D.S12 Execute a timely go-around if the approach cannot be made within the tolerances specified above or for any other condition that may result in an unsafe approach or landing.
- ☐ PA.IV.D.S13 Maintain proper position of the flight controls and sufficient speed to taxi while on the soft surface.

PA.IV.E Short-Field Takeoff and Maximum Performance Climb (ASEL, AMEL)

ACS references: AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ▶ **Start with:**

AFH ch 6 Takeoffs and Departure Climbs · **POH/AFM section 4** Normal Procedures · **POH/AFM section 5** Performance · **PHAK ch 11** Aircraft Performance

Knowledge

- ☐ PA.IV.E.K1 Effects of atmospheric conditions, including wind, on takeoff and climb performance.
- ☐ PA.IV.E.K2 Best angle of climb speed (VX) and best rate of climb speed (VY).
- ☐ PA.IV.E.K3 Appropriate airplane configuration.

Risk management

- ☐ PA.IV.E.R1 Selection of runway based on pilot capability, airplane performance and limitations, available distance, and wind.
- ☐ PA.IV.E.R2 Effects of:
 - ☐ PA.IV.E.R2a a. Crosswind
 - ☐ PA.IV.E.R2b b. Windshear
 - ☐ PA.IV.E.R2c c. Tailwind
 - ☐ PA.IV.E.R2d d. Wake turbulence

- ☐ PA.IV.E.R2e e. Takeoff surface/condition
- ☐ PA.IV.E.R3 Abnormal operations, including planning for:
 - ☐ PA.IV.E.R3a a. Rejected takeoff
 - ☐ PA.IV.E.R3b b. Potential engine failure in takeoff/climb phase of flight
- ☐ PA.IV.E.R4 Collision hazards.
- ☐ PA.IV.E.R5 Low altitude maneuvering, including stall, spin, or controlled flight into terrain (CFIT).
- ☐ PA.IV.E.R6 Distractions, task prioritization, loss of situational awareness, or disorientation.

Skills

- ☐ PA.IV.E.S1 Complete the appropriate checklist(s).
- ☐ PA.IV.E.S2 Make radio calls as appropriate.
- ☐ PA.IV.E.S3 Verify assigned/correct runway.

- ☐ PA.IV.E.S4 Determine wind direction with or without visible wind direction indicators.
- ☐ PA.IV.E.S5 Position the flight controls for the existing wind, if applicable.
- ☐ PA.IV.E.S6 Clear the area, taxi into takeoff position, and align the airplane on the runway centerline utilizing maximum available takeoff area.
- ☐ PA.IV.E.S7 Apply brakes while setting engine power to achieve maximum performance.
- ☐ PA.IV.E.S8 Confirm takeoff power prior to brake release and verify proper engine and flight instrument indications prior to rotation.
- ☐ PA.IV.E.S9 Rotate and lift off at the recommended airspeed and accelerate to the recommended obstacle clearance airspeed or VX, +10/-5 knots.
- ☐ PA.IV.E.S10 Establish a pitch attitude to maintain the recommended obstacle clearance airspeed or VX, +10/-5 knots until the obstacle is cleared or until the airplane is 50 feet above the surface.
- ☐ PA.IV.E.S11 Establish a pitch attitude for VY and accelerate to VY +10/-5 knots after clearing the obstacle or at 50 feet AGL if simulating an obstacle.
- ☐ PA.IV.E.S12 Configure the airplane in accordance with the manufacturer's guidance after a positive rate of climb has been verified.
- ☐ PA.IV.E.S13 Maintain VY +10/-5 knots to a safe maneuvering altitude.
- ☐ PA.IV.E.S14 Maintain directional control and proper wind-drift correction throughout takeoff and climb.
- ☐ PA.IV.E.S15 Comply with noise abatement procedures, as applicable.

PA.IV.F Short-Field Approach and Landing (ASEL, AMEL)

ACS references: AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ▶ **Start with:**

AFH ch 9 p. 9-20 Short-Field Approach and Landing · **POH/AFM section 4** Normal Procedures · **POH/AFM section 5** Performance · **PHAK ch 11** Aircraft Performance

Knowledge

- ☐ PA.IV.F.K1 A stabilized approach, including energy management concepts.
- ☐ PA.IV.F.K2 Effects of atmospheric conditions, including wind, on approach and landing performance.
- ☐ PA.IV.F.K3 Wind correction techniques on approach and landing.

Risk management

- ☐ PA.IV.F.R1 Selection of runway based on pilot capability, airplane performance and limitations, available distance, and wind.
- ☐ PA.IV.F.R2 Effects of:
 - ☐ PA.IV.F.R2a a. Crosswind
 - ☐ PA.IV.F.R2b b. Windshear
 - ☐ PA.IV.F.R2c c. Tailwind
 - ☐ PA.IV.F.R2d d. Wake turbulence
 - ☐ PA.IV.F.R2e e. Landing surface/condition
- ☐ PA.IV.F.R3 Planning for:
 - ☐ PA.IV.F.R3a a. Rejected landing and go-around
 - ☐ PA.IV.F.R3b b. Land and hold short operations (LAHSO)
- ☐ PA.IV.F.R4 Collision hazards.
- ☐ PA.IV.F.R5 Low altitude maneuvering, including stall, spin, or controlled flight into terrain (CFIT).
- ☐ PA.IV.F.R6 Distractions, task prioritization, loss of situational awareness, or disorientation.

Skills

- ☐ PA.IV.F.S1 Complete the appropriate checklist(s).
- ☐ PA.IV.F.S2 Make radio calls as appropriate.
- ☐ PA.IV.F.S3 Ensure the airplane is aligned with the correct/assigned runway.
- ☐ PA.IV.F.S4 Scan the landing runway and adjoining area for traffic and obstructions.
- ☐ PA.IV.F.S5 Select and aim for a suitable touchdown point considering the wind conditions, landing surface, and obstructions.
- ☐ PA.IV.F.S6 Establish the recommended approach and landing configuration, airspeed, and trim, and adjust pitch attitude and power as required to maintain a stabilized approach.
- ☐ PA.IV.F.S7 Maintain manufacturer's published approach airspeed or in its absence not more than 1.3 VSO, +10/-5 knots with gust factor applied.
- ☐ PA.IV.F.S8 Maintain directional control and appropriate crosswind correction throughout the approach and landing.
- ☐ PA.IV.F.S9 Make smooth, timely, and correct control application before, during, and after touchdown.
- ☐ PA.IV.F.S10 Touch down at a proper pitch attitude within 200 feet beyond or on the specified point, threshold markings, or runway numbers, with no side drift, minimum float, and with the airplane's longitudinal axis aligned with and over the runway centerline.
- ☐ PA.IV.F.S11 Use manufacturer's recommended procedures for airplane configuration and braking.
- ☐ PA.IV.F.S12 Execute a timely go-around if the approach cannot be made within the tolerances specified above or for any other condition that may result in an unsafe approach or landing.
- ☐ PA.IV.F.S13 Use runway incursion avoidance procedures, if applicable.

PA.IV.M Forward Slip to a Landing (ASEL, ASES)

ACS references: AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ▶ **Start with:**

AFH ch 9 p. 9-12 Intentional Slips · **AFH ch 4** Energy Management: Mastering Altitude and Airspeed Control · **POH/AFM section 2** Limitations

Knowledge

- ☐ PA.IV.M.K1 Concepts of energy management during a forward slip approach.
- ☐ PA.IV.M.K2 Effects of atmospheric conditions, including wind, on approach and landing performance.
- ☐ PA.IV.M.K3 Wind correction techniques during forward slip.
- ☐ PA.IV.M.K4 When and why a forward slip approach is used during an approach.

Risk management

- ☐ PA.IV.M.R1 Selection of runway/landing surface, approach path, and touchdown area based on pilot capability, aircraft performance and limitations, available distance, and wind.
- ☐ PA.IV.M.R2 Effects of:
 - ☐ PA.IV.M.R2a a. Crosswind
 - ☐ PA.IV.M.R2b b. Windshear
 - ☐ PA.IV.M.R2c c. Tailwind

- ☐ PA.IV.M.R2d d. Wake turbulence
- ☐ PA.IV.M.R2e e. Landing surface/condition
- ☐ PA.IV.M.R3 Planning for:
 - ☐ PA.IV.M.R3a a. Rejected landing and go-around
 - ☐ PA.IV.M.R3b b. Land and hold short operations (LAHSO)
- ☐ PA.IV.M.R4 Collision hazards.
- ☐ PA.IV.M.R5 Low altitude maneuvering, including stall, spin, or controlled flight into terrain (CFIT).
- ☐ PA.IV.M.R6 Distractions, task prioritization, loss of situational awareness, or disorientation.
- ☐ PA.IV.M.R7 Forward slip operations, including fuel flowage, tail stalls with flaps, and airspeed control.
- ☐ PA.IV.M.R8 Surface contact with the airplane's longitudinal axis misaligned.
- ☐ PA.IV.M.R9 Unstable approach.

Skills

- ☐ PA.IV.M.S1 Complete the appropriate checklist(s).
- ☐ PA.IV.M.S2 Make radio calls as appropriate.
- ☐ PA.IV.M.S3 Plan and follow a flightpath to the selected landing area considering altitude, wind, terrain, and obstructions.
- ☐ PA.IV.M.S4 Select the most suitable touchdown point based on wind, landing surface, obstructions, and airplane limitations.
- ☐ PA.IV.M.S5 Position airplane on downwind leg, parallel to landing runway or selected landing surface.
- ☐ PA.IV.M.S6 Configure the airplane correctly.
- ☐ PA.IV.M.S7 As necessary, correlate crosswind with direction of forward slip and transition to side slip before touchdown.
- ☐ PA.IV.M.S8 Touch down at a proper pitch attitude, within 400 feet beyond or on the specified point, with no side drift, and with the airplane's longitudinal axis aligned with and over the runway center/landing path.
- ☐ PA.IV.M.S9 Maintain a ground track aligned with the runway center/landing path.

PA.IV.N Go-Around/Rejected Landing

ACS references: AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-23, FAA-H-8083-25; POH/AFM ▶ **Start with:**

AFH ch 9 p. 9-10 Go-Arounds (Rejected Landings) · **AFH ch 4** Energy Management: Mastering Altitude and Airspeed Control · **POH/AFM section 4** Normal Procedures

Knowledge

- ☐ PA.IV.N.K1 A stabilized approach, including energy management concepts.
- ☐ PA.IV.N.K2 Effects of atmospheric conditions, including wind and density altitude, on a go-around or rejected landing.
- ☐ PA.IV.N.K3 Wind correction techniques on takeoff/departure and approach/landing.

Risk management

- ☐ PA.IV.N.R1 Delayed recognition of the need for a go-around/rejected landing.
- ☐ PA.IV.N.R2 Delayed performance of a go-around at low altitude.
- ☐ PA.IV.N.R3 Power application.
- ☐ PA.IV.N.R4 Configuring the airplane.
- ☐ PA.IV.N.R5 Collision hazards.
- ☐ PA.IV.N.R6 Low altitude maneuvering, including stall, spin, or controlled flight into terrain (CFIT).
- ☐ PA.IV.N.R7 Distractions, task prioritization, loss of situational awareness, or disorientation.
- ☐ PA.IV.N.R8 Runway incursion.
- ☐ PA.IV.N.R9 Managing a go-around/rejected landing after accepting a LAHSO clearance.

Skills

- ☐ PA.IV.N.S1 Complete the appropriate checklist(s).
- ☐ PA.IV.N.S2 Make radio calls as appropriate.
- ☐ PA.IV.N.S3 Make a timely decision to discontinue the approach to landing.
- ☐ PA.IV.N.S4 Apply takeoff power immediately and transition to climb pitch attitude for VX or VY as appropriate +10/-5 knots.
- ☐ PA.IV.N.S5 Configure the airplane after a positive rate of climb has been verified or in accordance with airplane manufacturer's instructions.
- ☐ PA.IV.N.S6 Maneuver to the side of the runway/landing area when necessary to clear and avoid conflicting traffic.
- ☐ PA.IV.N.S7 Maintain VY +10/-5 knots to a safe maneuvering altitude.
- ☐ PA.IV.N.S8 Maintain directional control and proper wind-drift correction throughout the climb.
- ☐ PA.IV.N.S9 Use runway incursion avoidance procedures, if applicable.

Area of Operation V. Performance Maneuvers and Ground Reference Maneuvers

PA.V.A Steep Turns

ACS references: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ▶ **Start with:**

AFH ch 10 Performance Maneuvers · **PHAK ch 5** Aerodynamics of Flight · **POH/AFM section 2** Limitations

Knowledge

- ☐ PA.V.A.K1 How to conduct a proper steep turn.
- ☐ PA.V.A.K2 Aerodynamics associated with steep turns, including:
 - ☐ PA.V.A.K2a a. Maintaining coordinated flight
 - ☐ PA.V.A.K2b b. Overbanking tendencies
 - ☐ PA.V.A.K2c c. Maneuvering speed, including the impact of weight changes
 - ☐ PA.V.A.K2d d. Load factor and accelerated stalls
 - ☐ PA.V.A.K2e e. Rate and radius of turn

Risk management

- ☐ PA.V.A.R1 Division of attention between aircraft control and orientation.
- ☐ PA.V.A.R2 Collision hazards.
- ☐ PA.V.A.R3 Low altitude maneuvering, including stall, spin, or controlled flight into terrain (CFIT).
- ☐ PA.V.A.R4 Distractions, task prioritization, loss of situational awareness, or disorientation.
- ☐ PA.V.A.R5 Uncoordinated flight.

Skills

- ☐ PA.V.A.S1 Clear the area.
- ☐ PA.V.A.S2 Establish the manufacturer's recommended airspeed; or if one is not available, an airspeed not to exceed the maneuvering speed (VA).
- ☐ PA.V.A.S3 Roll into a coordinated 360° steep turn with approximately a 45° bank.
- ☐ PA.V.A.S4 Perform the Task in the opposite direction, as specified by evaluator.
- ☐ PA.V.A.S5 Maintain the entry altitude ±100 feet, airspeed ±10 knots, bank ±5°, and roll out on the entry heading ±10°.

PA.V.B Ground Reference Maneuvers

ACS references: 14 CFR part 61; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25 ▶ **Start with:**

AFH ch 7 Ground Reference Maneuvers · **PHAK ch 5** Aerodynamics of Flight · **14 CFR 91.119** Minimum safe altitudes: General. · **14 CFR 61.107** Flight proficiency.

Knowledge

- ☐ PA.V.B.K1 Purpose of ground reference maneuvers.
- ☐ PA.V.B.K2 Effects of wind on ground track and relation to a ground reference.

- ☐ PA.V.B.K3 Effects of bank angle and groundspeed on rate and radius of turn.

- ☐ PA.V.B.K4 Relationship of rectangular course to airport traffic pattern.

Risk management

- ☐ PA.V.B.R1 Division of attention between aircraft control and orientation.
- ☐ PA.V.B.R2 Collision hazards.
- ☐ PA.V.B.R3 Low altitude maneuvering, including stall, spin, or controlled flight into terrain (CFIT).
- ☐ PA.V.B.R4 Distractions, task prioritization, loss of situational awareness, or disorientation.
- ☐ PA.V.B.R5 Uncoordinated flight.

Skills

- ☐ PA.V.B.S1 Clear the area.
- ☐ PA.V.B.S2 Select a suitable ground reference area, line, or point as appropriate.
- ☐ PA.V.B.S3 Plan the maneuver:
 - ☐ PA.V.B.S3a a. Rectangular course: enter a left or right pattern, 600 to 1,000 feet above ground level (AGL) at an appropriate distance from the selected reference area, 45° to the downwind leg
 - ☐ PA.V.B.S3b b. S-turns: enter perpendicular to the selected reference line, 600 to 1,000 feet AGL at an appropriate distance from the selected reference area
 - ☐ PA.V.B.S3c c. Turns around a point: enter at an appropriate distance from the reference point, 600 to 1,000 feet AGL at an appropriate distance from the selected reference area
- ☐ PA.V.B.S4 Apply adequate wind-drift correction during straight and turning flight to maintain a constant ground track around a rectangular reference area, or to maintain a constant radius turn on each side of a selected reference line or point.
- ☐ PA.V.B.S5 If performing S-Turns, reverse the turn directly over the selected reference line; if performing turns around a point, complete turns in either direction, as specified by the evaluator.
- ☐ PA.V.B.S6 Divide attention between airplane control, traffic avoidance and the ground track while maintaining coordinated flight.
- ☐ PA.V.B.S7 Maintain altitude ± 100 feet; maintain airspeed ± 10 knots.

Area of Operation VI. Navigation

PA.VI.A Pilotage and Dead Reckoning

ACS references: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; VFR Navigation Charts ▶ **Start with:**

PHAK ch 16 p. 16-12 Pilotage · **PHAK ch 16 p. 16-13** Dead Reckoning · **PHAK ch 16 p. 16-11** Basic Calculations · **PHAK ch 8** Flight Instruments · **Charts** VFR Raster Charts · **Charts** Aeronautical Chart Users' Guide · **14 CFR 91.159** VFR cruising altitude or flight level.

Knowledge

- ☐ PA.VI.A.K1 Pilotage and dead reckoning.
- ☐ PA.VI.A.K2 Magnetic compass errors.
- ☐ PA.VI.A.K3 Topography.
- ☐ PA.VI.A.K4 Selection of appropriate:
 - ☐ PA.VI.A.K4a a. Route
 - ☐ PA.VI.A.K4b b. Altitude(s)
 - ☐ PA.VI.A.K4c c. Checkpoints
- ☐ PA.VI.A.K5 Plotting a course, including:
 - ☐ PA.VI.A.K5a a. Determining heading, speed, and course
 - ☐ PA.VI.A.K5b b. Wind correction angle
 - ☐ PA.VI.A.K5c c. Estimating time, speed, and distance
 - ☐ PA.VI.A.K5d d. True airspeed and density altitude
- ☐ PA.VI.A.K6 Power setting selection.
- ☐ PA.VI.A.K7 Planned calculations versus actual results and required corrections.

Risk management

- ☐ PA.VI.A.R1 Collision hazards.
- ☐ PA.VI.A.R2 Distractions, task prioritization, loss of situational awareness, or disorientation.
- ☐ PA.VI.A.R3 Unplanned fuel/power consumption, if applicable.

Skills

- ☐ PA.VI.A.S1 Prepare and use a flight log.
- ☐ PA.VI.A.S2 Navigate by pilotage.
- ☐ PA.VI.A.S3 Navigate by means of pre-computed headings, groundspeeds, elapsed time, and reference to landmarks or checkpoints.
- ☐ PA.VI.A.S4 Use the magnetic direction indicator in navigation, including turns to headings.
- ☐ PA.VI.A.S5 Verify position within three nautical miles of the flight-planned route.
- ☐ PA.VI.A.S6 Arrive at the en route checkpoints within five minutes of the initial or revised estimated time of arrival (ETA) and provide a destination estimate.
- ☐ PA.VI.A.S7 Maintain the selected altitude, ± 200 feet and heading, $\pm 15^\circ$.

PA.VI.B Navigation Systems and Radar Services

ACS references: AC 91-78; AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25 ▶ **Start with:**

PHAK ch 16 p. 16-22 Ground-Based Navigation · **AIM 1-1-3** VHF Omni-directional Range (VOR) · **AIM 1-1-4** VOR Receiver Check · **AIM 1-1-17** Global Positioning System (GPS) · **AIM 1-2** Performance-Based Navigation (PBN) and Area Navigation (RNAV) · **AIM 4-1-17** Radar Assistance to VFR Aircraft · **AIM 4-1-18** Terminal Radar Services for VFR Aircraft · **AIM 4-1-20** Transponder and ADS-B Out Operation · **AIM 4-5-7** Automatic Dependent Surveillance-Broadcast (ADS-B) Services · **14 CFR 91.215** ATC transponder and altitude reporting equipment and use. · **14 CFR 91.225** Automatic Dependent Surveillance-Broadcast (ADS-B) Out equipment and use. · **AC 91-78A** Use of Electronic Flight Bags · **IFH ch 9** Navigation Systems

Knowledge

- ☐ PA.VI.B.K1 Ground-based navigation (identification, orientation, course determination, equipment, tests, regulations, interference, appropriate use of navigation data, and signal integrity).
- ☐ PA.VI.B.K2 Satellite-based navigation (e.g., equipment, regulations, authorized use of databases, and Receiver Autonomous Integrity Monitoring (RAIM)).
- ☐ PA.VI.B.K3 Radar assistance to visual flight rules (VFR) aircraft (e.g., operations, equipment, available services, traffic advisories).
- ☐ PA.VI.B.K4 Transponder (Mode(s) A, C, and S) and Automatic Dependent Surveillance-Broadcast (ADS-B).

Risk management

- ☐ PA.VI.B.R1 Management of automated navigation and autoflight systems.
- ☐ PA.VI.B.R2 Distractions, task prioritization, loss of situational awareness, or disorientation.
- ☐ PA.VI.B.R3 Limitations of the navigation system in use.

- ☐ PA.VI.B.R4 Loss of a navigation signal.
- ☐ PA.VI.B.R5 Use of an electronic flight bag (EFB), if used.

Skills

- ☐ PA.VI.B.S1 Use an airborne electronic navigation system.
- ☐ PA.VI.B.S2 Determine the airplane's position using the navigation system.
- ☐ PA.VI.B.S3 Intercept and track a given course, radial, or bearing.
- ☐ PA.VI.B.S4 Recognize and describe the indication of station or waypoint passage.
- ☐ PA.VI.B.S5 Recognize signal loss or interference and take appropriate action, if applicable.
- ☐ PA.VI.B.S6 Use proper communication procedures when utilizing radar services.
- ☐ PA.VI.B.S7 Maintain the selected altitude, ± 200 feet and heading, $\pm 15^\circ$.

PA.VI.C Diversion

ACS references: AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; VFR Navigation Charts ▶ **Start with:**

PHAK ch 16 p. 16-34 Flight Diversion · **RMH ch 8** Aeronautical Decision-Making in Flight · **AIM 4-1-17** Radar Assistance to VFR Aircraft

Knowledge

- ☐ PA.VI.C.K1 Selecting an alternate destination.
- ☐ PA.VI.C.K2 Situations that require deviations from flight plan or air traffic control (ATC) instructions.

Risk management

- ☐ PA.VI.C.R1 Collision hazards.
- ☐ PA.VI.C.R2 Distractions, task prioritization, loss of situational awareness, or disorientation.
- ☐ PA.VI.C.R3 Circumstances that would make diversion prudent.
- ☐ PA.VI.C.R4 Selecting an appropriate airport or seaplane base.
- ☐ PA.VI.C.R5 Using available resources (e.g., automation, ATC, and flight deck planning aids).

Skills

- ☐ PA.VI.C.S1 Select a suitable destination and route for diversion.
- ☐ PA.VI.C.S2 Make a reasonable estimate of heading, groundspeed, arrival time, and fuel required to the “divert to” destination.
- ☐ PA.VI.C.S3 Maintain the selected altitude, ±200 feet and heading, ±15°.
- ☐ PA.VI.C.S4 Update/interpret weather in flight.
- ☐ PA.VI.C.S5 Use displays of digital weather and aeronautical information, as applicable to maintain situational awareness.
- ☐ PA.VI.C.S6 Promptly divert toward the destination.

PA.VI.D Lost Procedures

ACS references: AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; VFR Navigation Charts ▶ **Start with:**

PHAK ch 16 p. 16-34 Lost Procedures · **AIM 6-2-1** Radar Service for VFR Aircraft in Difficulty · **AIM 6-3-2** Obtaining Emergency Assistance · **AIM 4-1-17** Radar Assistance to VFR Aircraft

Knowledge

- ☐ PA.VI.D.K1 Methods to determine position.
- ☐ PA.VI.D.K2 Assistance available if lost (e.g., radar services, communication procedures).

Risk management

- ☐ PA.VI.D.R1 Collision hazards.
- ☐ PA.VI.D.R2 Distractions, task prioritization, loss of situational awareness, or disorientation.
- ☐ PA.VI.D.R3 Recording times over waypoints.
- ☐ PA.VI.D.R4 When to seek assistance or declare an emergency in a deteriorating situation.

Skills

- ☐ PA.VI.D.S1 Use an appropriate method to determine position.
- ☐ PA.VI.D.S2 Maintain an appropriate heading and climb as necessary.
- ☐ PA.VI.D.S3 Identify prominent landmarks.
- ☐ PA.VI.D.S4 Use navigation systems/facilities or contact an ATC facility for assistance.
- ☐ PA.VI.D.S5 Select an appropriate course of action.

Area of Operation VII. Slow Flight and Stalls

PA.VII.A Maneuvering During Slow Flight

ACS references: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ▶ **Start with:**

AFH ch 5 Maintaining Aircraft Control: Upset Prevention and Recovery Training · **PHAK ch 5** Aerodynamics of Flight · **POH/AFM section 2** Limitations

Knowledge

- ☐ PA.VII.A.K1 Aerodynamics associated with slow flight in various airplane configurations, including the relationship between angle of attack, airspeed, load factor, power setting, airplane weight and center of gravity, airplane attitude, and yaw effects.

Risk management

- ☐ PA.VII.A.R1 Inadvertent slow flight and flight with a stall warning, which could lead to loss of control.
- ☐ PA.VII.A.R2 Range and limitations of stall warning indicators (e.g., aircraft buffet, stall horn, etc.).
- ☐ PA.VII.A.R3 Uncoordinated flight.
- ☐ PA.VII.A.R4 Effect of environmental elements on airplane performance (e.g., turbulence, microbursts, and high-density altitude).
- ☐ PA.VII.A.R5 Collision hazards.
- ☐ PA.VII.A.R6 Distractions, task prioritization, loss of situational awareness, or disorientation.

Skills

- ☐ PA.VII.A.S1 Clear the area.
- ☐ PA.VII.A.S2 Select an entry altitude that allows the Task to be completed no lower than 1,500 feet above ground level (AGL) (ASEL, ASES) or 3,000 feet AGL (AMEL, AMES).
- ☐ PA.VII.A.S3 Establish and maintain an airspeed at which any further increase in angle of attack, increase in load factor, or reduction in power, would result in a stall warning (e.g., aircraft buffet, stall horn, etc.).
- ☐ PA.VII.A.S4 Accomplish coordinated straight-and-level flight, turns, climbs, and descents with the aircraft configured as specified by the evaluator without a stall warning (e.g., aircraft buffet, stall horn, etc.).
- ☐ PA.VII.A.S5 Maintain the specified altitude, ±100 feet; specified heading, ±10°; airspeed, +10/-0 knots; and specified angle of bank, ±10°.

PA.VII.B Power-Off Stalls

ACS references: AC 61-67; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ▶ **Start with:**

AFH ch 5 Maintaining Aircraft Control: Upset Prevention and Recovery Training · **PHAK ch 5** Aerodynamics of Flight · **AC 61-67C** Stall and Spin Awareness Training with Change 1 & 2 · **POH/AFM section 2** Limitations · **POH/AFM section 4** Normal Procedures

Knowledge

- ☐ PA.VII.B.K1 Aerodynamics associated with stalls in various airplane configurations, including the relationship between angle of attack, airspeed, load factor, power setting, airplane weight and center of gravity, airplane attitude, and yaw effects.

- ☐ PA.VII.B.K2 Stall characteristics as they relate to airplane design, and recognition impending stall and full stall indications using sight, sound, or feel.
- ☐ PA.VII.B.K3 Factors and situations that can lead to a power-off stall and actions that can be taken to prevent it.
- ☐ PA.VII.B.K4 Fundamentals of stall recovery.

Risk management

- ☐ PA.VII.B.R1 Factors and situations that could lead to an inadvertent power-off stall, spin, and loss of control.
- ☐ PA.VII.B.R2 Range and limitations of stall warning indicators (e.g., aircraft buffet, stall horn, etc.).
- ☐ PA.VII.B.R3 Stall warning(s) during normal operations.
- ☐ PA.VII.B.R4 Stall recovery procedure.
- ☐ PA.VII.B.R5 Secondary stalls, accelerated stalls, and cross-control stalls.
- ☐ PA.VII.B.R6 Effect of environmental elements on airplane performance related to power-off stalls (e.g., turbulence, microbursts, and high-density altitude).
- ☐ PA.VII.B.R7 Collision hazards.
- ☐ PA.VII.B.R8 Distractions, task prioritization, loss of situational awareness, or disorientation.

Skills

- ☐ PA.VII.B.S1 Clear the area.
- ☐ PA.VII.B.S2 Select an entry altitude that allows the Task to be completed no lower than 1,500 feet above ground level (AGL) (ASEL, ASES) or 3,000 feet AGL (AMEL, AMES).
- ☐ PA.VII.B.S3 Configure the airplane in the approach or landing configuration, as specified by the evaluator, and maintain coordinated flight throughout the maneuver.
- ☐ PA.VII.B.S4 Establish a stabilized descent.
- ☐ PA.VII.B.S5 Transition smoothly from the approach or landing attitude to a pitch attitude that induces a stall.
- ☐ PA.VII.B.S6 Maintain a specified heading $\pm 10^\circ$ if in straight flight; maintain a specified angle of bank not to exceed 20° , $\pm 10^\circ$ if in turning flight, while inducing the stall.
- ☐ PA.VII.B.S7 Acknowledge cues of the impending stall and then recover promptly after a full stall occurs.
- ☐ PA.VII.B.S8 Execute a stall recovery in accordance with procedures set forth in the Pilot's Operating Handbook (POH) or Airplane Flight Manual (AFM).
- ☐ PA.VII.B.S9 Configure the airplane as recommended by the manufacturer, and accelerate to best angle of climb speed (VX) or best rate of climb speed (VY).
- ☐ PA.VII.B.S10 Return to the altitude, heading, and airspeed specified by the evaluator.
- ☐ PA.VII.B.S11 Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.

PA.VII.C Power-On Stalls

ACS references: AC 61-67; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ► **Start with:**

AFH ch 5 Maintaining Aircraft Control: Upset Prevention and Recovery Training · **PHAK ch 5** Aerodynamics of Flight · **AC 61-67C** Stall and Spin Awareness Training with Change 1 & 2 · **POH/AFM section 2** Limitations · **POH/AFM section 4** Normal Procedures

Knowledge

- ☐ PA.VII.C.K1 Aerodynamics associated with stalls in various airplane configurations, including the relationship between angle of attack, airspeed, load factor, power setting, airplane weight and center of gravity, airplane attitude, and yaw effects.
- ☐ PA.VII.C.K2 Stall characteristics as they relate to airplane design, and recognition impending stall and full stall indications using sight, sound, or feel.
- ☐ PA.VII.C.K3 Factors and situations that can lead to a power-on stall and actions that can be taken to prevent it.
- ☐ PA.VII.C.K4 Fundamentals of stall recovery.

Risk management

- ☐ PA.VII.C.R1 Factors and situations that could lead to an inadvertent power-on stall, spin, and loss of control.
- ☐ PA.VII.C.R2 Range and limitations of stall warning indicators (e.g., aircraft buffet, stall horn, etc.).
- ☐ PA.VII.C.R3 Stall warning(s) during normal operations.
- ☐ PA.VII.C.R4 Stall recovery procedure.
- ☐ PA.VII.C.R5 Secondary stalls, accelerated stalls, elevator trim stalls, and cross-control stalls.
- ☐ PA.VII.C.R6 Effect of environmental elements on airplane performance related to power-on stalls (e.g., turbulence, microbursts, and high-density altitude).
- ☐ PA.VII.C.R7 Collision hazards.
- ☐ PA.VII.C.R8 Distractions, task prioritization, loss of situational awareness, or disorientation.

Skills

- ☐ PA.VII.C.S1 Clear the area.
- ☐ PA.VII.C.S2 Select an entry altitude that allows the Task to be completed no lower than 1,500 feet above ground level (AGL) (ASEL, ASES) or 3,000 feet AGL (AMEL, AMES).
- ☐ PA.VII.C.S3 Establish the takeoff, departure, or cruise configuration, as specified by the evaluator, and maintain coordinated flight throughout the maneuver.
- ☐ PA.VII.C.S4 Set power (as assigned by the evaluator) to no less than 65 percent power.
- ☐ PA.VII.C.S5 Transition smoothly from the takeoff or departure attitude to the pitch attitude that induces a stall.
- ☐ PA.VII.C.S6 Maintain a specified heading, $\pm 10^\circ$ if in straight flight; maintain a specified angle of bank not to exceed 20° , $\pm 10^\circ$ if in turning flight, while inducing the stall.
- ☐ PA.VII.C.S7 Acknowledge cues of the impending stall and then recover promptly after a full stall occurs.
- ☐ PA.VII.C.S8 Execute a stall recovery in accordance with procedures set forth in the Pilot's Operating Handbook (POH)/Flight Manual (FM).
- ☐ PA.VII.C.S9 Configure the airplane as recommended by the manufacturer, and accelerate to best angle of climb speed (VX) or best rate of climb speed (VY).
- ☐ PA.VII.C.S10 Return to the altitude, heading, and airspeed specified by the evaluator.
- ☐ PA.VII.C.S11 Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.

PA.VII.D Spin Awareness

ACS references: AC 61-67; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ► **Start with:**

AFH ch 5 Maintaining Aircraft Control: Upset Prevention and Recovery Training · **PHAK ch 5** Aerodynamics of Flight · **AC 61-67C** Stall and Spin Awareness Training with Change 1 & 2 · **POH/AFM section 2** Limitations · **POH/AFM section 3** Emergency Procedures

Knowledge

- ☐ PA.VII.D.K1 Aerodynamics associated with spins in various airplane configurations, including the relationship between angle of attack, airspeed, load factor, power setting, airplane weight and center of gravity, airplane attitude, and yaw effects.
- ☐ PA.VII.D.K2 What causes a spin and how to identify the entry, incipient, and developed phases of a spin.
- ☐ PA.VII.D.K3 Spin recovery procedure.

Risk management

- ☐ PA.VII.D.R1 Factors and situations that could lead to inadvertent spin and loss of control.
- ☐ PA.VII.D.R2 Range and limitations of stall warning indicators (e.g., aircraft buffet, stall horn, etc.).
- ☐ PA.VII.D.R3 Spin recovery procedure.
- ☐ PA.VII.D.R4 Effect of environmental elements on airplane performance related to spins (e.g., turbulence, microbursts, and high-density altitude).
- ☐ PA.VII.D.R5 Collision hazards.
- ☐ PA.VII.D.R6 Distractions, task prioritization, loss of situational awareness, or disorientation.

Area of Operation VIII. Basic Instrument Maneuvers

PA.VIII.A Straight-and-Level Flight

ACS references: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-15, FAA-H-8083-25 ▶ **Start with:**

IFH ch 6 sec I Airplane Attitude Instrument Flying Using Analog Instrumentation · **IFH ch 6 sec II** Airplane Attitude Instrument Flying Using an Electronic Flight Display · **IFH ch 7 sec I p. 7-2** Straight-and-Level Flight · **IFH ch 7 sec II p. 7-34** Straight-and-Level Flight · **PHAK ch 8** Flight Instruments

Knowledge

- ☐ PA.VIII.A.K1 Flight instruments as they relate to:
 - ☐ PA.VIII.A.K1a a. Instrument limitations and potential errors
 - ☐ PA.VIII.A.K1b b. Indication of the aircraft attitude
 - ☐ PA.VIII.A.K1c c. Function and operation
 - ☐ PA.VIII.A.K1d d. Proper instrument cross-check techniques

Risk management

- ☐ PA.VIII.A.R1 Instrument flying hazards, including failure to maintain visual flight rules (VFR), spatial disorientation, loss of control, fatigue, stress, and emergency off airport landings.
- ☐ PA.VIII.A.R2 When to seek assistance or declare an emergency in a deteriorating situation.
- ☐ PA.VIII.A.R3 Collision hazards.
- ☐ PA.VIII.A.R4 Distractions, task prioritization, loss of situational awareness, or disorientation.
- ☐ PA.VIII.A.R5 Fixation and omission.
- ☐ PA.VIII.A.R6 Instrument Interpretation.
- ☐ PA.VIII.A.R7 Control application solely by reference to instruments.
- ☐ PA.VIII.A.R8 Trimming the aircraft.

Skills

- ☐ PA.VIII.A.S1 Maintain straight-and-level flight using proper instrument cross-check and interpretation, and coordinated control application.
- ☐ PA.VIII.A.S2 Maintain altitude ± 200 feet, heading $\pm 20^\circ$, and airspeed ± 10 knots.

PA.VIII.B Constant Airspeed Climbs

ACS references: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-15, FAA-H-8083-25 ▶ **Start with:**

IFH ch 6 sec I Airplane Attitude Instrument Flying Using Analog Instrumentation · **IFH ch 6 sec II** Airplane Attitude Instrument Flying Using an Electronic Flight Display · **IFH ch 7 sec I p. 7-14** Straight Climbs and Descents · **IFH ch 7 sec II p. 7-46** Straight Climbs and Descents · **PHAK ch 8** Flight Instruments

Knowledge

- ☐ PA.VIII.B.K1 Flight instruments as they relate to:
 - ☐ PA.VIII.B.K1a a. Instrument limitations and potential errors
 - ☐ PA.VIII.B.K1b b. Indication of the aircraft attitude
 - ☐ PA.VIII.B.K1c c. Function and operation
 - ☐ PA.VIII.B.K1d d. Proper instrument cross-check techniques

Risk management

- ☐ PA.VIII.B.R1 Instrument flying hazards, including failure to maintain visual flight rules (VFR), spatial disorientation, loss of control, fatigue, stress, and emergency off airport landings.
- ☐ PA.VIII.B.R2 When to seek assistance or declare an emergency in a deteriorating situation.
- ☐ PA.VIII.B.R3 Collision hazards.
- ☐ PA.VIII.B.R4 Distractions, task prioritization, loss of situational awareness, or disorientation.
- ☐ PA.VIII.B.R5 Fixation and omission.
- ☐ PA.VIII.B.R6 Instrument Interpretation.
- ☐ PA.VIII.B.R7 Control application solely by reference to instruments.
- ☐ PA.VIII.B.R8 Trimming the aircraft.

Skills

- ☐ PA.VIII.B.S1 Transition to the climb pitch attitude and power setting on an assigned heading using proper instrument cross-check and interpretation, and coordinated flight control application.
- ☐ PA.VIII.B.S2 Climb at a constant airspeed to specific altitudes in straight flight and turns.
- ☐ PA.VIII.B.S3 Level off at the assigned altitude and maintain altitude ± 200 feet, heading $\pm 20^\circ$, and airspeed ± 10 knots.

PA.VIII.C Constant Airspeed Descents

ACS references: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-15, FAA-H-8083-25 ▶ **Start with:**

IFH ch 6 sec I Airplane Attitude Instrument Flying Using Analog Instrumentation · **IFH ch 6 sec II** Airplane Attitude Instrument Flying Using an Electronic Flight Display · **IFH ch 7 sec I p. 7-14** Straight Climbs and Descents · **IFH ch 7 sec II p. 7-46** Straight Climbs and Descents · **PHAK ch 8** Flight Instruments

Knowledge

- ☐ PA.VIII.C.K1 Flight instruments as they relate to:
 - ☐ PA.VIII.C.K1a a. Instrument limitations and potential errors
 - ☐ PA.VIII.C.K1b b. Indication of the aircraft attitude
 - ☐ PA.VIII.C.K1c c. Function and operation

- ☐ PA.VIII.C.K1d d. Proper instrument cross-check techniques

Risk management

- ☐ PA.VIII.C.R1 Instrument flying hazards, including failure to maintain visual flight rules (VFR), spatial disorientation, loss of control, fatigue, stress, and emergency off airport landings.

- ☐ PA.VIII.C.R2 When to seek assistance or declare an emergency in a deteriorating situation.
- ☐ PA.VIII.C.R3 Collision hazards.
- ☐ PA.VIII.C.R4 Distractions, task prioritization, loss of situational awareness, or disorientation.
- ☐ PA.VIII.C.R5 Fixation and omission.
- ☐ PA.VIII.C.R6 Instrument Interpretation.
- ☐ PA.VIII.C.R7 Control application solely by reference to instruments.
- ☐ PA.VIII.C.R8 Trimming the aircraft.

Skills

- ☐ PA.VIII.C.S1 Transition to the descent pitch attitude and power setting on an assigned heading using proper instrument cross-check and interpretation, and coordinated flight control application.
- ☐ PA.VIII.C.S2 Descend at a constant airspeed to specific altitudes in straight flight and turns.
- ☐ PA.VIII.C.S3 Level off at the assigned altitude and maintain altitude ± 200 feet, heading $\pm 20^\circ$, and airspeed ± 10 knots.

PA.VIII.D Turns to Headings

ACS references: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-15, FAA-H-8083-25 ▶ **Start with:**

IFH ch 6 sec I Airplane Attitude Instrument Flying Using Analog Instrumentation · **IFH ch 6 sec II** Airplane Attitude Instrument Flying Using an Electronic Flight Display · **IFH ch 7 sec I p. 7-19** Turns · **IFH ch 7 sec II p. 7-51** Turns · **PHAK ch 8** Flight Instruments

Knowledge

- ☐ PA.VIII.D.K1 Flight instruments as they relate to:
 - ☐ PA.VIII.D.K1a a. Instrument limitations and potential errors
 - ☐ PA.VIII.D.K1b b. Indication of the aircraft attitude
 - ☐ PA.VIII.D.K1c c. Function and operation
 - ☐ PA.VIII.D.K1d d. Proper instrument cross-check techniques

Risk management

- ☐ PA.VIII.D.R1 Instrument flying hazards, including failure to maintain visual flight rules (VFR), spatial disorientation, loss of control, fatigue, stress, and emergency off airport landings.
- ☐ PA.VIII.D.R2 When to seek assistance or declare an emergency in a deteriorating situation.
- ☐ PA.VIII.D.R3 Collision hazards.
- ☐ PA.VIII.D.R4 Distractions, task prioritization, loss of situational awareness, or disorientation.
- ☐ PA.VIII.D.R5 Fixation and omission.
- ☐ PA.VIII.D.R6 Instrument Interpretation.
- ☐ PA.VIII.D.R7 Control application solely by reference to instruments.
- ☐ PA.VIII.D.R8 Trimming the aircraft.

Skills

- ☐ PA.VIII.D.S1 Turn to headings, maintain altitude ± 200 feet, maintain a standard rate turn, roll out on the assigned heading $\pm 10^\circ$, and maintain airspeed ± 10 knots.

PA.VIII.E Recovery from Unusual Flight Attitudes

ACS references: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-15, FAA-H-8083-25; POH/Flight Manual ▶ **Start with:**

IFH ch 7 sec I p. 7-26 Unusual Attitudes and Recoveries · **IFH ch 6 sec II** Airplane Attitude Instrument Flying Using an Electronic Flight Display · **IFH ch 3** Human Factors · **AFH ch 5** Maintaining Aircraft Control: Upset Prevention and Recovery Training · **AFH ch 18 p. 18-17** Inadvertent VFR Flight Into IMC · **POH/AFM section 3** Emergency Procedures

Knowledge

- ☐ PA.VIII.E.K1 Prevention of unusual attitudes, including flight causal, physiological, and environmental factors, and system and equipment failures.
 - PA.VIII.E.K1a a. [Archived]
 - PA.VIII.E.K1b b. [Archived]
 - PA.VIII.E.K1c c. [Archived]
 - PA.VIII.E.K1d d. [Archived]
- ☐ PA.VIII.E.K2 Procedures for recovery from unusual attitudes in flight.
- ☐ PA.VIII.E.K3 Procedures available to safely regain visual meteorological conditions (VMC) after flight into inadvertent instrument meteorological conditions or unintended instrument meteorological conditions (IIMC)/(UIMC).
- ☐ PA.VIII.E.K4 Appropriate use of automation, if applicable.

Risk management

- ☐ PA.VIII.E.R1 Situations that could lead to loss of control in-flight (LOC-I) or unusual attitudes in-flight (e.g., stress, task saturation, inadequate instrument scan distractions, and spatial disorientation).
 - PA.VIII.E.R2 [Archived]
- ☐ PA.VIII.E.R3 Collision hazards.
- ☐ PA.VIII.E.R4 Distractions, task prioritization, loss of situational awareness, or disorientation.
- ☐ PA.VIII.E.R5 Interpreting flight instruments.
 - PA.VIII.E.R6 [Archived]
- ☐ PA.VIII.E.R7 Operating envelope considerations.
- ☐ PA.VIII.E.R8 Control input errors, inducing undesired aircraft attitudes.
- ☐ PA.VIII.E.R9 Assessment of the unusual attitude.
- ☐ PA.VIII.E.R10 Control application solely by reference to instruments.

Skills

- ☐ PA.VIII.E.S1 Use proper instrument cross-check and interpretation to identify an unusual attitude (including both nose-high and nose-low) in flight, and apply the appropriate flight control, power input, and aircraft configuration in the correct sequence, to return to a stabilized level flight attitude.
- ☐ PA.VIII.E.S2 Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.

PA.VIII.F Radio Communications, Navigation Systems/Facilities, and Radar Services

ACS references: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-15, FAA-H-8083-25 ▶ **Start with:**

IFH ch 2 The Air Traffic Control System · **IFH ch 9** Navigation Systems · **AIM 4-1** Services Available to Pilots · **AIM 4-2** Radio Communications Phraseology and Techniques · **AIM 6-2-1** Radar Service for VFR Aircraft in Difficulty · **PHAK ch 16 p. 16-22** Ground-Based Navigation

Knowledge

- ☐ PA.VIII.F.K1 Operating communications equipment, including identifying and selecting radio frequencies, requesting and following air traffic control (ATC) instructions.

- ☐ PA.VIII.F.K2 Operating navigation equipment, including functions and displays, and following bearings, radials, or courses.
- ☐ PA.VIII.F.K3 Air traffic control facilities and services.
- Risk management**
- ☐ PA.VIII.F.R1 When to seek assistance or declare an emergency in a deteriorating situation.
- ☐ PA.VIII.F.R2 Using available resources (e.g., automation, ATC, and flight deck planning aids).

Skills

- ☐ PA.VIII.F.S1 Maintain airplane control while selecting proper communications frequencies, identifying the appropriate facility, and managing navigation equipment.
- ☐ PA.VIII.F.S2 Comply with ATC instructions.
- PA.VIII.F.S3 [Archived]

Area of Operation IX. Emergency Operations

PA.IX.A Emergency Descent

ACS references: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ▶ **Start with:** **AFH ch 18 p. 18-8** Emergency Descents · **POH/AFM section 3** Emergency Procedures · **POH/AFM section 2** Limitations

Knowledge

- ☐ PA.IX.A.K1 Situations that would require an emergency descent (e.g., depressurization, smoke, or engine fire).
- ☐ PA.IX.A.K2 Immediate action items and emergency procedures.
- ☐ PA.IX.A.K3 Airspeed, including airspeed limitations.
- ☐ PA.IX.A.K4 Aircraft performance and limitations.

Risk management

- ☐ PA.IX.A.R1 Altitude, wind, terrain, obstructions, gliding distance, and available landing distance considerations.
- ☐ PA.IX.A.R2 Collision hazards.
- ☐ PA.IX.A.R3 Configuring the airplane.
- ☐ PA.IX.A.R4 Distractions, task prioritization, loss of situational awareness, or disorientation.

Skills

- ☐ PA.IX.A.S1 Clear the area.
- ☐ PA.IX.A.S2 Establish and maintain the appropriate airspeed and configuration appropriate to the scenario specified by the evaluator and as covered in Pilot's Operating Handbook (POH)/Airplane Flight Manual (AFM) for the emergency descent.
- ☐ PA.IX.A.S3 Maintain orientation, divide attention appropriately, and plan and execute a smooth recovery.
- ☐ PA.IX.A.S4 Use bank angle between 30° and 45° to maintain positive load factors during the descent.
- ☐ PA.IX.A.S5 Maintain appropriate airspeed +0/-10 knots, and level off at a specified altitude ±100 feet.
- ☐ PA.IX.A.S6 Complete the appropriate checklist(s).
- ☐ PA.IX.A.S7 Make radio calls as appropriate.
- ☐ PA.IX.A.S8 Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.

PA.IX.B Emergency Approach and Landing (Simulated) (ASEL, ASES)

ACS references: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ▶ **Start with:** **AFH ch 18 p. 18-1** Emergency Landings · **AFH ch 9 p. 9-28** Emergency Approaches and Landings (Simulated) · **POH/AFM section 3** Emergency Procedures · **AIM 6-2-4** Emergency Locator Transmitter (ELT) · **AIM 6-3** Distress and Urgency Procedures · **14 CFR 91.207** Emergency locator transmitters.

Knowledge

- ☐ PA.IX.B.K1 Immediate action items and emergency procedures.
- ☐ PA.IX.B.K2 Airspeed, including:
 - ☐ PA.IX.B.K2a a. Importance of best glide speed and its relationship to distance
 - ☐ PA.IX.B.K2b b. Difference between best glide speed and minimum sink speed
 - ☐ PA.IX.B.K2c c. Effects of wind on glide distance
- ☐ PA.IX.B.K3 Effects of atmospheric conditions on emergency approach and landing.
- ☐ PA.IX.B.K4 A stabilized approach, including energy management concepts.
- ☐ PA.IX.B.K5 Emergency Locator Transmitters (ELTs) and other emergency locating devices.
- ☐ PA.IX.B.K6 Air traffic control (ATC) services to aircraft in distress.

Risk management

- ☐ PA.IX.B.R1 Altitude, wind, terrain, obstructions, gliding distance, and available landing distance considerations.
- ☐ PA.IX.B.R2 Following or changing the planned flightpath to the selected landing area.
- ☐ PA.IX.B.R3 Collision hazards.
- ☐ PA.IX.B.R4 Configuring the airplane.
- ☐ PA.IX.B.R5 Low altitude maneuvering, including stall, spin, or controlled flight into terrain (CFIT).
- ☐ PA.IX.B.R6 Distractions, task prioritization, loss of situational awareness, or disorientation.

Skills

- ☐ PA.IX.B.S1 Establish and maintain the recommended best glide airspeed, ±10 knots.
- ☐ PA.IX.B.S2 Configure the airplane in accordance with the Pilot's Operating Handbook (POH)/Airplane Flight Manual (AFM) and existing conditions.
- ☐ PA.IX.B.S3 Select a suitable landing area considering altitude, wind, terrain, obstructions, and available glide distance.
- ☐ PA.IX.B.S4 Plan and follow a flightpath to the selected landing area considering altitude, wind, terrain, and obstructions.
- ☐ PA.IX.B.S5 Prepare for landing as specified by the evaluator.
- ☐ PA.IX.B.S6 Complete the appropriate checklist(s).

PA.IX.C Systems and Equipment Malfunctions

ACS references: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ▶ **Start with:** **AFH ch 18 p. 18-13** System Malfunctions · **AFH ch 18 p. 18-9** In-Flight Fire · **AFH ch 18 p. 18-17** Door Opening In-Flight · **POH/AFM section 3** Emergency Procedures · **PHAK ch 7** Aircraft Systems · **PHAK ch 8** Flight Instruments · **IFH ch 11** Emergency Operations

Knowledge

- ☐ PA.IX.C.K1 Causes of partial or complete power loss related to the specific type of powerplant(s).
 - PA.IX.C.K1a a. [Archived]
 - PA.IX.C.K1b b. [Archived]
 - PA.IX.C.K1c c. [Archived]
 - PA.IX.C.K1d d. [Archived]
- ☐ PA.IX.C.K2 System and equipment malfunctions specific to the aircraft, including:
 - ☐ PA.IX.C.K2a a. Electrical malfunction
 - ☐ PA.IX.C.K2b b. Vacuum/pressure and associated flight instrument malfunctions
 - ☐ PA.IX.C.K2c c. Pitot-static system malfunction
 - ☐ PA.IX.C.K2d d. Electronic flight deck display malfunction
 - ☐ PA.IX.C.K2e e. Landing gear or flap malfunction
 - ☐ PA.IX.C.K2f f. Inoperative trim
- ☐ PA.IX.C.K3 Causes and remedies for smoke or fire onboard the aircraft.
- ☐ PA.IX.C.K4 Any other system specific to the aircraft (e.g., supplemental oxygen, deicing).
- ☐ PA.IX.C.K5 Inadvertent door or window opening.
- Risk management**
 - ☐ PA.IX.C.R1 Checklist usage for a system or equipment malfunction.
 - ☐ PA.IX.C.R2 Distractions, task prioritization, loss of situational awareness, or disorientation.
 - ☐ PA.IX.C.R3 Undesired aircraft state.
 - ☐ PA.IX.C.R4 Startle response.
- Skills**
 - ☐ PA.IX.C.S1 Determine appropriate action for simulated emergencies specified by the evaluator, from at least three of the elements or sub-elements listed in K1 through K5.
 - ☐ PA.IX.C.S2 Complete the appropriate checklist(s).

PA.IX.D Emergency Equipment and Survival Gear

ACS references: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ▶ **Start with:**

POH/AFM section 3 Emergency Procedures · **POH/AFM section 9** Supplements · **AFH ch 18 p. 18-22** Emergency Response Systems · **AIM 6-2-4** Emergency Locator Transmitter (ELT) · **14 CFR 91.207** Emergency locator transmitters.

Knowledge

- ☐ PA.IX.D.K1 Emergency Locator Transmitter (ELT) operations, limitations, and testing requirements.
- ☐ PA.IX.D.K2 Fire extinguisher operations and limitations.
- ☐ PA.IX.D.K3 Emergency equipment and survival gear needed for:
 - ☐ PA.IX.D.K3a a. Climate extremes (hot/cold)
 - ☐ PA.IX.D.K3b b. Mountainous terrain
 - ☐ PA.IX.D.K3c c. Overwater operations
- ☐ PA.IX.D.K4 When to deploy a ballistic parachute and associated passenger briefings, if equipped.
- ☐ PA.IX.D.K5 When to activate an emergency auto-land system and brief passengers, if equipped.

Risk management

- ☐ PA.IX.D.R1 Survival gear (water, clothing, shelter) for 48 to 72 hours.
- ☐ PA.IX.D.R2 Use of a ballistic parachute system.
- ☐ PA.IX.D.R3 Use of an emergency auto-land system, if installed.

Skills

- ☐ PA.IX.D.S1 Identify appropriate equipment and personal gear.
- ☐ PA.IX.D.S2 Brief passengers on proper use of on-board emergency equipment and survival gear.
- ☐ PA.IX.D.S3 Simulate ballistic parachute deployment procedures, if equipped.

Area of Operation XI. Night Operations

PA.XI.A Night Operations

ACS references: AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ▶ **Start with:**

AFH ch 11 Night Operations · **PHAK ch 17 p. 17-19** Vision in Flight · **AIM 2-1** Airport Lighting Aids · **AIM 2-2** Air Navigation and Obstruction Lighting · **AIM 8-1-6** Vision in Flight · **14 CFR 91.205** Powered civil aircraft with standard U.S. airworthiness certificates: Instrument and equipment requirements. · **14 CFR 91.209** Aircraft lights. · **14 CFR 61.57** Recent flight experience: Pilot in command. · **14 CFR 1.1** General definitions.

Knowledge

- ☐ PA.XI.A.K1 Physiological aspects of vision related to night flying.
- ☐ PA.XI.A.K2 Lighting systems identifying airports, runways, taxiways and obstructions, as well as pilot controlled lighting.
- ☐ PA.XI.A.K3 Airplane equipment and lighting requirements for night operations.
- ☐ PA.XI.A.K4 Personal equipment essential for night flight.
- ☐ PA.XI.A.K5 Night orientation, navigation, chart reading techniques and methods for maintaining night vision effectiveness.
- ☐ PA.XI.A.K6 Night taxi operations.
- ☐ PA.XI.A.K7 Interpretation of traffic position and direction based solely on position lights.
- ☐ PA.XI.A.K8 Visual illusions at night.

Risk management

- ☐ PA.XI.A.R1 Collision hazards.
- ☐ PA.XI.A.R2 Distractions, task prioritization, loss of situational awareness, or disorientation.
- ☐ PA.XI.A.R3 Effect of visual illusions and night adaptation during all phases of night flying.
- ☐ PA.XI.A.R4 Runway incursion.
- ☐ PA.XI.A.R5 Night currency versus proficiency.
- ☐ PA.XI.A.R6 Weather considerations specific to night operations.
- ☐ PA.XI.A.R7 Inoperative equipment.

Area of Operation XII. Postflight Procedures

PA.XII.A After Landing, Parking, and Securing (ASEL, AMEL)

ACS references: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM ▶ **Start with:**

Knowledge

- ☐ PA.XII.A.K1 Airplane shutdown, securing, and postflight inspection.
- ☐ PA.XII.A.K2 Documenting in-flight/postflight discrepancies.

Risk management

- ☐ PA.XII.A.R1 Activities and distractions.
- ☐ PA.XII.A.R2 [Archived]
- ☐ PA.XII.A.R3 Airport specific security procedures.
- ☐ PA.XII.A.R4 Disembarking passengers safely on the ramp and monitoring passenger movement while on the ramp.

Skills

- ☐ PA.XII.A.S1 [Archived]
- ☐ PA.XII.A.S2 Park in an appropriate area, considering the safety of nearby persons and property.
- ☐ PA.XII.A.S3 Complete the appropriate checklist(s).
- ☐ PA.XII.A.S4 Conduct a postflight inspection and document discrepancies and servicing requirements, if any.
- ☐ PA.XII.A.S5 Secure the airplane.

6 · Instructor sign-off TECHNIQUE

► Your instructor initials each Area of Operation when you are ready for it.

Area of Operation	Knowledge and risk management — initials, date	Skills — initials, date
I. Preflight Preparation		
II. Preflight Procedures		
III. Airport and Seaplane Base Operations		
IV. Takeoffs, Landings, and Go-Arounds		
V. Performance Maneuvers and Ground Reference Maneuvers		
VI. Navigation		
VII. Slow Flight and Stalls		
VIII. Basic Instrument Maneuvers		
IX. Emergency Operations		
XI. Night Operations		
XII. Postflight Procedures		

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