

## I. Preflight Preparation

### **Task** *A. Pilot Qualifications*

**References** 14 CFR part 61; FAA-H-8083-2, FAA-H-8083-15, AC 68-1

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with the requirements to act as PIC under instrument flight rules.

**Knowledge** The applicant demonstrates understanding of:

*IR.I.A.K1* Certification requirements, recency of experience, and recordkeeping.

*IR.I.A.K2* Privileges and limitations.

*IR.I.A.K3* Part 68 BasicMed Privileges and Limitations.

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

*IR.I.A.R1* Failure to distinguish proficiency versus currency.

*IR.I.A.R2* Failure to set personal minimums.

*IR.I.A.R3* Failure to ensure fitness for flight and physiological factors that might affect the pilot's ability to fly under instrument conditions.

*IR.I.A.R4* Flying unfamiliar airplanes, or operating with unfamiliar flight display systems and avionics.

**Skills** The applicant demonstrates the ability to:

*IR.I.A.S1* Apply requirements to act as PIC under Instrument Flight Rules (IFR) in a scenario given by the evaluator.

### **Task** *B. Weather Information*

**References** 14 CFR part 91; FAA-H-8083-25, AC 00-6; AC 00-45, AIM

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with obtaining, understanding, and applying weather information for a flight under IFR.

**Knowledge** The applicant demonstrates understanding of:

*IR.I.B.K1* Acceptable sources of weather data for flight planning purposes.

*IR.I.B.K2* Weather products and resources utilized for preflight planning, current and forecast weather for departure and en route operations and arrival phases of flight.

*IR.I.B.K3* Meteorology applicable to the departure, en route, alternate, and destination for flights conducted under IFR in Instrument Meteorological Conditions (IMC) to include expected climate and hazardous conditions such as:

*IR.I.B.K3a* a. Atmospheric composition and stability

*IR.I.B.K3b* b. Wind (e.g., crosswind, tailwind, windshear, mountain wave, etc.)

*IR.I.B.K3c* c. Temperature

*IR.I.B.K3d* d. Moisture/precipitation

*IR.I.B.K3e* e. Weather system formation, including air masses and fronts

*IR.I.B.K3f* f. Clouds

*IR.I.B.K3g* g. Turbulence

*IR.I.B.K3h* h. Thunderstorms and microbursts

*IR.I.B.K3i* i. Icing and freezing level information

*IR.I.B.K3j* j. Fog

*IR.I.B.K3k* k. Frost

*IR.I.B.K4* Flight deck displays of digital weather and aeronautical information.

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

*IR.I.B.R1* Factors involved in making the go/no-go and continue/divert decisions, to include:

*IR.I.B.R1a* a. Circumstances that would make diversion prudent

*IR.I.B.R1b* b. Personal Weather Minimums

*IR.I.B.R1c* c. Hazardous weather conditions to include known or forecast icing or turbulence aloft

*IR.I.B.R2* Limitations of:

*IR.I.B.R2a* a. Onboard weather equipment

*IR.I.B.R2b* b. Aviation weather reports and forecasts

*IR.I.B.R2c* c. Inflight weather resources

- Skills** The applicant demonstrates the ability to:
- IR.I.B.S1* Use available aviation weather resources to obtain an adequate weather briefing.
  - IR.I.B.S2* Discuss the implications of at least three of the conditions listed in K3a through K3k above, using actual weather or weather conditions in a scenario provided by the evaluator.
  - IR.I.B.S3* Correlate weather information to make a competent go/no-go decision.
  - IR.I.B.S4* Determine whether an alternate airport is required, and, if required, whether the selected alternate airport meets regulatory requirements.

**Task** **C. Cross-Country Flight Planning**

**References** 14 CFR part 91; FAA-H-8083-2, FAA-H-8083-15, FAA-H-8083-16, FAA-H-8083-25; Navigation Charts, Chart Supplements; AIM; NOTAMs

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with planning an IFR cross-country and filing an IFR flight plan.

**Knowledge** The applicant demonstrates understanding of:

- IR.I.C.K1* Route planning, including consideration of the available navigational facilities, special use airspace, preferred routes, and alternate airports.
- IR.I.C.K2* Altitude selection accounting for terrain and obstacles, glide distance of airplane, IFR cruising altitudes, effect of wind, and oxygen requirements.
- IR.I.C.K3* Calculating:
  - IR.I.C.K3a* a. Time, climb and descent rates, course, distance, heading, true airspeed, and groundspeed
  - IR.I.C.K3b* b. Estimated time of arrival to include conversion to universal coordinated time (UTC)
  - IR.I.C.K3c* c. Fuel requirements, to include reserve
- IR.I.C.K4* Elements of an IFR flight plan.
- IR.I.C.K5* Procedures for activating and closing an IFR flight plan in controlled and uncontrolled airspace.

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

- IR.I.C.R1* Pilot.
- IR.I.C.R2* Aircraft.
- IR.I.C.R3* Environment (e.g., weather, airports, airspace, terrain, obstacles).
- IR.I.C.R4* External pressures.
- IR.I.C.R5* Limitations of air traffic control (ATC) services.
- IR.I.C.R6* Limitations of electronic planning applications and programs.
- IR.I.C.R7* Improper fuel planning.

**Skills** The applicant demonstrates the ability to:

- IR.I.C.S1* Prepare, present and explain a cross-country flight plan assigned by the evaluator including a risk analysis based on real time weather which includes calculating time en route and fuel considering factors such as power settings, operating altitude, wind, fuel reserve requirements, and weight and balance requirements.
- IR.I.C.S2* Recalculate fuel reserves based on a scenario provided by the evaluator.
- IR.I.C.S3* Create a navigation plan and simulate filing an IFR flight plan.
- IR.I.C.S4* Interpret departure, arrival, en route, and approach procedures with reference to appropriate and current charts.
- IR.I.C.S5* Recognize simulated wing contamination due to airframe icing and demonstrate knowledge of the adverse effects of airframe icing during pre-takeoff, takeoff, cruise, and landing phases of flight as well as the corrective actions.
- IR.I.C.S6* Apply pertinent information from appropriate and current aeronautical charts, Charts Supplement; NOTAMs relative to airport, runway and taxiway closures; and other flight publications.

## II. Preflight Procedures

### **Task** *A. Airplane Systems Related to IFR Operations*

**References** 14 CFR parts 61, 91; FAA-H-8083-2, FAA-H-8083-15; AFM; AC 91-74

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with anti-icing and de-icing systems.

**Knowledge** The applicant demonstrates understanding of:

*IR.II.A.K1* The general operational characteristics and limitations of applicable anti-icing and deicing systems, including airframe, propeller, intake, fuel, and pitot-static systems.

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

*IR.II.A.R1* Pilots with little or no experience with flight in icing conditions.

*IR.II.A.R2* Limitations of anti-icing and deicing systems.

**Skills** The applicant demonstrates the ability to:

*IR.II.A.S1* Demonstrate familiarity with anti- or de-icing procedures and/or information published by the manufacturer that is specific to the airplane used on the practical test.

### **Task** *B. Airplane Flight Instruments and Navigation Equipment*

**References** 14 CFR parts 61, 91; FAA-H-8083-15; AIM

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with managing instruments appropriate for an IFR flight.

**Knowledge** The applicant demonstrates understanding of:

*IR.II.B.K1* Operation of their airplane's applicable flight instrument system(s) including:

*IR.II.B.K1a* a. Pitot-static instrument system: altimeter, airspeed indicator, vertical speed indicator

*IR.II.B.K1b* b. Gyroscopic/electric/vacuum instrument system: attitude indicator, heading indicator, turn-and-slip indicator/turn coordinator

*IR.II.B.K1c* c. Electrical systems, electronic flight instrument displays (PFD, MFD), transponder

*IR.II.B.K1d* d. Magnetic compass

*IR.II.B.K2* Operation of their airplane's applicable navigation system(s) including:

*IR.II.B.K2a* a. VOR, DME, ILS, marker beacon receiver/indicators

*IR.II.B.K2b* b. RNAV, GPS, Wide Area Augmentation System (WAAS), FMS, autopilot

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

*IR.II.B.R1* Failure to monitor and manage automated systems.

*IR.II.B.R2* The difference between approved and non-approved navigation devices.

*IR.II.B.R3* Common failure modes of flight and navigation instruments.

*IR.II.B.R4* The limitations of electronic flight bags.

*IR.II.B.R5* Failure to ensure currency of navigation databases.

**Skills** The applicant demonstrates the ability to:

*IR.II.B.S1* Operate and manage installed instruments and navigation equipment.

### **Task** *C. Instrument Flight Deck Check*

**References** 14 CFR part 91; FAA-8083-2, FAA-H-8083-3, FAA-H-8083-15, FAA-H-8083-25; AC 91.21-1; POH/AFM

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with conducting a preflight check on the airplane's instruments necessary for an IFR flight.

**Knowledge** The applicant demonstrates understanding of:

*IR.II.C.K1* Purpose of performing an instrument flight deck check and how to detect possible defects.

*IR.II.C.K2* IFR airworthiness, to include airplane inspection requirements and required equipment for IFR flight.

*IR.II.C.K3* Required procedures, documentation, and limitations of flying with inoperative equipment.

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

*IR.II.C.R1* Operating with inoperative equipment.

*IR.II.C.R2* Operating with outdated navigation publications or databases.

**Skills** The applicant demonstrates the ability to:

*IR.II.C.S1* Perform preflight inspection by following the checklist appropriate to the airplane and determine that the airplane is in a condition for safe instrument flight.

### III. Air Traffic Control Clearances and Procedures

#### Task **A. Compliance with Air Traffic Control Clearances**

**References** 14 CFR parts 61, 91; FAA-H-8083-15; AIM

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with ATC clearances and procedures solely by reference to instruments.

**Note:** See [Appendix 7: Aircraft, Equipment, and Operational Requirements & Limitations](#) for related considerations.

**Knowledge** The applicant demonstrates understanding of:

*IR.III.A.K1* Elements and procedures related to ATC clearances and pilot/controller responsibilities for departure, en route, and arrival phases of flight including clearance void times.

*IR.III.A.K2* PIC emergency authority.

*IR.III.A.K3* Lost communication procedures and procedures for flights outside of radar environments.

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

*IR.III.A.R1* Failure to fully understand an ATC clearance.

*IR.III.A.R2* Inappropriate, incomplete, or incorrect ATC clearances.

*IR.III.A.R3* ATC clearance inconsistent with airplane performance and/or navigation capability.

*IR.III.A.R4* ATC clearance intended for other aircraft with similar call signs.

**Skills** The applicant demonstrates the ability to:

*IR.III.A.S1* Correctly copy, read back, interpret, and comply with simulated and/or actual ATC clearances in a timely manner using standard phraseology as provided in the Aeronautical Information Manual.

*IR.III.A.S2* Correctly set communication frequencies, navigation systems (identifying when appropriate), and transponder codes in compliance with the ATC clearance.

*IR.III.A.S3* Use the current and appropriate paper or electronic navigation publications.

*IR.III.A.S4* Intercept all courses, radials, and bearings appropriate to the procedure, route, or clearance in a timely manner.

*IR.III.A.S5* Maintain the applicable **airspeed  $\pm 10$  knots, headings  $\pm 10^\circ$ , altitude  $\pm 100$  feet**; and track a course, radial, or bearing **within  $\frac{1}{4}$ -scale deflection of the CDI**.

*IR.III.A.S6* **Demonstrate SRM.**

*IR.III.A.S7* Perform the appropriate airplane checklist items relative to the phase of flight.

#### Task **B. Holding Procedures**

**References** 14 CFR parts 61, 91; FAA-H-8083-15, FAA-H-8083-16; AIM

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with holding procedures solely by reference to instruments.

**Knowledge** The applicant demonstrates understanding of:

*IR.III.B.K1* Elements related to holding procedures, including reporting criteria, appropriate speeds, and recommended entry procedures for standard, published, and non-published holding patterns.

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

*IR.III.B.R1* Recalculating fuel reserves if assigned an unanticipated expect further clearance (EFC) time.

*IR.III.B.R2* Scenarios and circumstances that could result in minimum fuel or the need to declare an emergency.

*IR.III.B.R3* Scenarios that could lead to holding, including deteriorating weather at the planned destination.

*IR.III.B.R4* Improper holding entry and improper wind correction while holding.

**Skills** The applicant demonstrates the ability to:

*IR.III.B.S1* Explain and use an entry procedure that ensures the airplane remains within the holding pattern airspace for a standard, nonstandard, published, or non-published holding pattern.

*IR.III.B.S2* Change to the holding airspeed appropriate for the altitude or airplane when 3 minutes or less from, but prior to arriving at, the holding fix and set appropriate power as needed for fuel conservation.

*IR.III.B.S3* Recognize arrival at the holding fix and promptly initiate entry into the holding pattern.

- IR.III.B.S4* Maintain airspeed  $\pm 10$  knots, altitude  $\pm 100$  feet, selected headings within  $\pm 10^\circ$ , and track a selected course, radial, or bearing within  $\frac{3}{4}$ -scale deflection of the CDI.
- IR.III.B.S5* Use proper wind correction procedures to maintain the desired pattern and to arrive over the fix as close as possible to a specified time and maintain pattern leg lengths when specified.
- IR.III.B.S6* Use an MFD and other graphical navigation displays, if installed, to monitor position in relation to the desired flightpath during holding.
- IR.III.B.S7* Comply with ATC reporting requirements and restrictions associated with the holding pattern.
- IR.III.B.S8* Demonstrate SRM.

#### IV. Flight by Reference to Instruments

##### Task **A. Instrument Flight**

**References** 14 CFR part 61; FAA-8083-2, FAA-H-8083-15

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with performing basic instrument flight maneuvers solely by reference to instruments.

**Knowledge** The applicant demonstrates understanding of:

*IR.IV.A.K1* Elements related to attitude instrument flying during straight-and-level flight, climbs, turns, and descents while conducting various instrument flight procedures.

*IR.IV.A.K2* Interpretation, operation, and limitations of pitch, bank, and power instruments.

*IR.IV.A.K3* Normal and abnormal instrument indications and operations.

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

*IR.IV.A.R1* Situations that can affect physiology and degrade instrument cross-check.

*IR.IV.A.R2* Spatial disorientation and optical illusions.

*IR.IV.A.R3* Flying unfamiliar airplanes, or operating with unfamiliar flight display systems and avionics.

**Skills** The applicant demonstrates the ability to:

*IR.IV.A.S1* Maintain altitude  $\pm 100$  feet during level flight, selected headings  $\pm 10^\circ$ , airspeed  $\pm 10$  knots, and bank angles  $\pm 5^\circ$  during turns.

*IR.IV.A.S2* Use proper instrument cross-check and interpretation, and apply the appropriate pitch, bank, power, and trim corrections when applicable.

##### Task **B. Recovery from Unusual Flight Attitudes**

**References** 14 CFR part 61; FAA-H-8083-15

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with recovering from unusual flight attitudes solely by reference to instruments.

**Knowledge** The applicant demonstrates understanding of:

*IR.IV.B.K1* Procedures for recovery from unusual flight attitudes.

*IR.IV.B.K2* Unusual flight attitude causal factors, including physiological factors, system and equipment failures, and environmental factors.

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

*IR.IV.B.R1* Situations that could lead to loss of control or unusual flight attitudes (e.g., stress, task saturation, and distractions).

*IR.IV.B.R2* Failure to recognize an unusual flight attitude and follow the proper recovery procedure.

**Skills** The applicant demonstrates the ability to:

*IR.IV.B.S1* Use proper instrument cross-check and interpretation to identify an unusual attitude (including both nose-high and nose-low), and apply the appropriate pitch, bank, and power corrections, in the correct sequence, to return to a stabilized level flight attitude.

#### V. Navigation Systems

##### Task **A. Intercepting and Tracking Navigational Systems and Arcs**

**References** 14 CFR parts 61, 91; FAA-H-8083-15, FAA-H-8083-16; AFM; AIM

**Note:** The evaluator must reference the manufacturer's equipment supplement(s) as necessary for appropriate

limitations, procedures, etc.

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with intercepting and tracking navigation aids and arcs solely by reference to instruments.

**Knowledge** The applicant demonstrates understanding of:

*IR.V.A.K1* Ground-based navigation (orientation, course determination, equipment, tests and regulations) including procedures for intercepting and tracking courses and arcs.

*IR.V.A.K2* Satellite-based navigation (orientation, course determination, equipment, tests and regulations, interference, appropriate use of databases, Receiver Autonomous Integrity Monitoring (RAIM), and Wide Area Augmentation System (WAAS)) including procedures for intercepting and tracking courses and arcs.

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

*IR.V.A.R1* Failure to manage automated navigation and autoflight systems.

*IR.V.A.R2* Distractions, loss of situational awareness, and/or improper task management.

*IR.V.A.R3* Limitations of the navigation system in use.

**Skills** The applicant demonstrates the ability to:

*IR.V.A.S1* Tune and correctly identify the navigation facility/program the navigation system and verify system accuracy as appropriate for the equipment installed in the airplane.

*IR.V.A.S2* Determine airplane position relative to the navigational facility or waypoint.

*IR.V.A.S3* Set and correctly orient to the course to be intercepted.

*IR.V.A.S4* Intercept the specified course at appropriate angle, inbound to or outbound from a navigational facility or waypoint.

*IR.V.A.S5* Maintain airspeed  $\pm 10$  knots, altitude  $\pm 100$  feet, and selected headings  $\pm 5^\circ$ .

*IR.V.A.S6* Apply proper correction to maintain a course, allowing no more than  $\frac{1}{4}$ -scale deflection of the CDI. If a DME arc is selected, maintain that arc  $\pm 1$  nautical mile.

*IR.V.A.S7* Recognize navigational system or facility failure, and when required, report the failure to ATC.

*IR.V.A.S8* Use an MFD and other graphical navigation displays, if installed, to monitor position, track wind drift, and to maintain situational awareness.

*IR.V.A.S9* Properly use the autopilot, if installed, to intercept courses.

**Task** **B. Departure, En Route, and Arrival Operations**  
**References** 14 CFR parts 61, 91; FAA-H-8083-15, FAA-H-8083-16; AC 91-74; AFM; AIM

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with IFR departure, en route, and arrival operations solely by reference to instruments.

**Note:** See [Appendix 7: Aircraft, Equipment, and Operational Requirements & Limitations](#) for related considerations.

**Knowledge** The applicant demonstrates understanding of:

*IR.V.B.K1* Elements related to ATC routes, including departure procedures (DPs) and associated climb gradients; arrival procedures (STARs) and associated constraints.

*IR.V.B.K2* Pilot/controller responsibilities, communication procedures, and ATC services available to pilots.

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

*IR.V.B.R1* Failure to communicate with ATC or follow published procedures.

*IR.V.B.R2* Failure to recognize limitations of traffic avoidance equipment.

*IR.V.B.R3* Failure to use see and avoid techniques when possible.

**Skills** The applicant demonstrates the ability to:

*IR.V.B.S1* Select, identify (as necessary) and use the appropriate communication and navigation facilities associated with the proposed flight.

*IR.V.B.S2* Perform the appropriate airplane checklist items relative to the phase of flight.

*IR.V.B.S3* Use the current and appropriate paper or electronic navigation publications..

*IR.V.B.S4* Establish two-way communications with the proper controlling agency, use proper phraseology and comply, in a timely manner, with all ATC instructions and airspace restrictions as well as exhibit adequate knowledge of communication failure procedures.

*IR.V.B.S5* Intercept all courses, radials, and bearings appropriate to the procedure, route, or clearance in a timely manner.

*IR.V.B.S6* Comply with all applicable charted procedures.

*IR.V.B.S7* Maintain **airspeed  $\pm 10$  knots**, **altitude  $\pm 100$  feet**, and selected **headings  $\pm 10^\circ$** , and apply proper correction to maintain a course allowing **no more than  $\frac{3}{4}$ -scale deflection** of the CDI.

*IR.V.B.S8* Update/interpret weather in flight.

*IR.V.B.S9* Explain and use flight deck displays of digital weather and aeronautical information, as applicable.

*IR.V.B.S10* **Demonstrate SRM.**

## VI. Instrument Approach Procedures

### Task **A. Nonprecision Approach**

References 14 CFR parts 61, 91; FAA-H-8083-15, FAA-H-8083-16; IFP, AIM, AC 120-108

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with performing nonprecision approach procedures solely by reference to instruments.

**Note:** See [Appendix 7: Aircraft, Equipment, and Operational Requirements & Limitations](#) for related considerations.

**Knowledge** The applicant demonstrates understanding of:

*IR.VI.A.K1* Procedures and limitations associated with a nonprecision approach, including the differences between Localizer Performance (LP) and Lateral Navigation (LNAV) approach guidance.

*IR.VI.A.K2* Navigation system annunciations expected during an RNAV approach.

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

*IR.VI.A.R1* Descending below the minimum descent altitude (MDA) without proper visual references.

*IR.VI.A.R2* Deteriorating weather conditions on approach.

*IR.VI.A.R3* An unstable approach, including excessive descent rates.

*IR.VI.A.R4* Failure to ensure proper airplane configuration during an approach and missed approach.

*IR.VI.A.R5* Failure to manage automated navigation and autoflight systems.

**Skills** The applicant demonstrates the ability to:

*IR.VI.A.S1* Accomplish the nonprecision instrument approaches selected by the evaluator.

*IR.VI.A.S2* Establish two-way communications with ATC appropriate for the phase of flight or approach segment, and use proper communication phraseology.

*IR.VI.A.S3* Select, tune, identify, and confirm the operational status of navigation equipment to be used for the approach.

*IR.VI.A.S4* Comply with all clearances issued by ATC or the evaluator.

*IR.VI.A.S5* Recognize if any flight instrumentation is inaccurate or inoperative, and take appropriate action.

*IR.VI.A.S6* Advise ATC or the evaluator if unable to comply with a clearance.

*IR.VI.A.S7* Establish the appropriate airplane configuration and airspeed considering turbulence and windshear, and complete the airplane checklist items appropriate to the phase of the flight.

*IR.VI.A.S8* Maintain altitude  $\pm 100$  feet, selected heading  $\pm 10^\circ$ , airspeed  $\pm 10$  knots, prior to beginning the final approach segment.

*IR.VI.A.S9* Apply adjustments to the published MDA and visibility criteria for the aircraft approach category, as appropriate, for factors that include NOTAMs, inoperative airplane or navigation equipment, or inoperative visual aids associated with the landing environment, etc.

*IR.VI.A.S10* Establish a stabilized descent to the appropriate altitude.

*IR.VI.A.S11* For the final approach segment, maintain no more than a  $\frac{3}{4}$ -scale deflection of the CDI, maintain airspeed  $\pm 10$  knots, and altitude, if applicable, above MDA,  $+100/-0$  feet, to the Visual Descent Point (VDP) or Missed Approach Point (MAP).

*IR.VI.A.S12* Execute the missed approach procedure if the required visual references for the intended runway are not distinctly visible and identifiable at the appropriate point or altitude for the approach profile.

*IR.VI.A.S13* Execute a normal landing from a straight-in or circling approach when instructed by the evaluator.

*IR.VI.A.S14* Use an MFD and other graphical navigation displays, if installed, to monitor position, track wind drift, and to maintain situational awareness.



**Task****B. Precision Approach****References**

14 CFR parts 61, 91; FAA-H-8083-15, FAA-H-8083-16; IFP; AIM

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with performing precision approach procedures solely by reference to instruments.

**Knowledge** The applicant demonstrates understanding of:

*IR.VI.B.K1* Procedures and limitations associated with a precision approach, including determining required descent rates and adjusting minimums in the case of inoperative equipment.

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

*IR.VI.B.R1* Failure to immediately initiate the missed approach at Decision Altitude (DA)/Decision Height (DH) if the required visual references are not visible.

*IR.VI.B.R2* Deteriorating weather conditions on approach.

*IR.VI.B.R3* An unstable approach including excessive descent rates.

*IR.VI.B.R4* Failure to ensure proper airplane configuration during an approach and missed approach.

*IR.VI.B.R5* Failure to manage automated navigation and autoflight systems.

**Skills** The applicant demonstrates the ability to:

*IR.VI.B.S1* Accomplish the precision instrument approach(es) selected by the evaluator.

*IR.VI.B.S2* Establish two-way communications with ATC appropriate for the phase of flight or approach segment, and use proper communication phraseology.

*IR.VI.B.S3* Select, tune, identify, and confirm the operational status of navigation equipment to be used for the approach.

*IR.VI.B.S4* Comply with all clearances issued by ATC or the evaluator.

*IR.VI.B.S5* Recognize if any flight instrumentation is inaccurate or inoperative, and take appropriate action.

*IR.VI.B.S6* Advise ATC or the evaluator if unable to comply with a clearance.

*IR.VI.B.S7* Establish the appropriate airplane configuration and airspeed considering turbulence and windshear, and complete the airplane checklist items appropriate to the phase of the flight.

*IR.VI.B.S8* Maintain altitude  $\pm 100$  feet, selected heading  $\pm 10^\circ$ , airspeed  $\pm 10$  knots, prior to beginning the final approach segment.

*IR.VI.B.S9* Apply adjustments to the published DA/DH and visibility criteria for the aircraft approach category, as appropriate, for factors that include NOTAMS, Inoperative airplane or navigation equipment, or inoperative visual aids associated with the landing environment, etc. .

*IR.VI.B.S10* Establish a predetermined rate of descent at the point where vertical guidance begins, which approximates that required for the airplane to follow the vertical guidance.

*IR.VI.B.S11* Maintain a stabilized final approach from the Final Approach Fix (FAF) to DA/DH allowing no more than  $\frac{3}{4}$ -scale deflection of either the vertical or lateral guidance indications and maintain the desired airspeed  $\pm 10$  knots.

*IR.VI.B.S12* Immediately initiate the missed approach procedure when at the DA/DH, and the required visual references for the runway are not unmistakably visible and identifiable.

*IR.VI.B.S13* Transition to a normal landing approach (missed approach for seaplanes) only when the airplane is in a position from which a descent to a landing on the runway can be made at a normal rate of descent using normal maneuvering.

*IR.VI.B.S14* Maintain a stabilized visual flight path from the DA/DH to the runway aiming point where a normal landing may be accomplished within the touchdown zone.

*IR.VI.B.S15* Use an MFD and other graphical navigation displays, if installed, to monitor position, track wind drift, and to maintain situational awareness.

**Task****C. Missed Approach****References**

14 CFR parts 61, 91; FAA-H-8083-15; IFP; AIM

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with performing a missed approach procedure solely by reference to instruments.

**Knowledge** The applicant demonstrates understanding of:

*IR.VI.C.K1* Elements related to missed approach procedures and limitations associated with standard instrument approaches, including while using a FMS and/or autopilot, if equipped.

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

*IR.VI.C.R1* Failure to follow prescribed procedures.

*IR.VI.C.R2* Holding, diverting, or electing to fly the approach again.

*IR.VI.C.R3* Failure to ensure proper airplane configuration during an approach and missed approach.

*IR.VI.C.R4* Factors that might lead to executing a missed approach procedure before the missed approach point or to a go-around below DA/MDA.

*IR.VI.C.R5* Failure to manage automated navigation and autoflight systems.

**Skills** The applicant demonstrates the ability to:

*IR.VI.C.S1* Initiate the missed approach promptly by applying power, establishing a climb attitude, and configuring the airplane in accordance with the airplane's manufacturer's recommendations.

*IR.VI.C.S2* Report to ATC upon beginning the missed approach procedure.

*IR.VI.C.S3* Comply with the published or alternate missed approach procedure.

*IR.VI.C.S4* Advise ATC or the evaluator if unable to comply with a clearance, restriction, or climb gradient.

*IR.VI.C.S5* Follow the recommended checklist items appropriate to the missed approach/go-around procedure.

*IR.VI.C.S6* Request, if appropriate, ATC clearance to the alternate airport, clearance limit, or as directed by the evaluator.

*IR.VI.C.S7* Maintain the recommended **airspeed  $\pm 10$  knots**; heading, course, or **bearing  $\pm 10^\circ$** ; and **altitude(s)  $\pm 100$  feet** during the missed approach procedure.

*IR.VI.C.S8* Use an MFD and other graphical navigation displays, if installed, to monitor position and track to help navigate the missed approach.

*IR.VI.C.S9* **Demonstrate SRM.**

### **Task** **D. Circling Approach**

**References** 14 CFR parts 61, 91; FAA-H-8083-15; IFP; AIM

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with performing a circling approach procedure.

**Knowledge** The applicant demonstrates understanding of:

*IR.VI.D.K1* Elements related to circling approach procedures and limitations including approach categories and related airspeed restrictions.

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

*IR.VI.D.R1* Failure to follow prescribed circling approach procedures.

*IR.VI.D.R2* Executing a circling approach at night or with marginal visibility.

*IR.VI.D.R3* Losing visual contact with an identifiable part of the airport.

*IR.VI.D.R4* Failure to manage automated navigation and autoflight systems.

*IR.VI.D.R5* Failure to maintain an appropriate airspeed while circling.

*IR.VI.D.R6* Low altitude maneuvering including stall, spin, or CFIT.

*IR.VI.D.R7* Executing an improper missed approach after the MAP while circling.

**Skills** The applicant demonstrates the ability to:

*IR.VI.D.S1* Select and comply with the circling approach procedure considering turbulence, windshear, and the maneuvering capabilities of the airplane.

*IR.VI.D.S2* Confirm the direction of traffic and adhere to all restrictions and instructions issued by ATC or the evaluator.

*IR.VI.D.S3* Maneuver the airplane, at or above the MDA,  $90^\circ$  or more from the final approach course, on a flightpath permitting a normal landing on a suitable runway.

*IR.VI.D.S4* Avoid circling beyond visibility requirements and maintain the appropriate circling altitude until in a position from which a descent to a normal landing can be made.

*IR.VI.D.S5* Establish the approach and landing configuration for the situation and maintain altitude  **$+100/-0$  feet** until a descent to a normal landing can be made.

*IR.VI.D.S6* **Demonstrate SRM.**

### **Task** **E. Landing from an Instrument Approach**

**References** 14 CFR parts 61, 91; FAA-H-8083-15; AIM

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with performing the procedures for a landing from an instrument approach.

**Knowledge** The applicant demonstrates understanding of:

*IR.VI.E.K1* Elements related to the pilot's responsibilities, and the environmental, operational, and meteorological factors that affect landing from a straight-in or circling approach.

*IR.VI.E.K2* Airport signs, markings and lighting, to include approach lighting systems.

**Risk Management** The applicant demonstrates the ability **to identify, assess and mitigate risks, encompassing:**

- IR.VI.E.R1* Attempting to land from **an unstable approach**.
- IR.VI.E.R2* Flying **below the glidepath**.
- IR.VI.E.R3* Transitioning from instrument to visual references for landing.
- Skills** The applicant demonstrates the ability to:
- IR.VI.E.S1* Transition at the DA/DH, MDA, or visual descent point VDP to a visual flight condition, allowing for safe visual maneuvering and a normal landing.
- IR.VI.E.S2* Adhere to all ATC or evaluator advisories, such as NOTAMs, windshear, wake turbulence, runway surface, braking conditions, and other operational considerations.
- IR.VI.E.S3* Complete the appropriate checklist.
- IR.VI.E.S4* Maintain positive airplane control throughout the landing maneuver.
- IR.VI.E.S5* Demonstrate SRM.

## **VI. Emergency Operations**

### **Task A. Loss of Communications**

**References** 14 CFR parts 61, 91; AIM

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with loss of communications while operating solely by reference to instruments.

**Knowledge** The applicant demonstrates understanding of:

*IR.VII.A.K1* Procedures to follow in the event of lost communication during various phases of flight, including techniques for reestablishing communications, when it is acceptable to deviate from an IFR clearance, and when to begin an approach at the destination.

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

*IR.VII.A.R1* Possible reasons for loss of communication.

*IR.VII.A.R2* Failure to follow procedures for lost communications.

**Skills** The applicant demonstrates the ability to:

*IR.VII.A.S1* Recognize a simulated loss of communication.

*IR.VII.A.S2* Simulate actions to re-establish communication.

*IR.VII.A.S3* Determine whether to continue to flight plan destination or deviate.

*IR.VII.A.S4* Determine appropriate time to begin an approach.

**Task** **D. Approach with Loss of Primary Flight Instrument Indicators**

**References** 14 CFR parts 61, 91; FAA-H-8083-15; IFP

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with performing an approach solely by reference to instruments with the loss of primary flight control instruments.

**Knowledge** The applicant demonstrates understanding of:

*IR.VII.D.K1* Recognizing if primary flight instruments are inaccurate or inoperative, and advising ATC or the evaluator.

*IR.VII.D.K2* Common failure modes of vacuum and electric attitude instruments and how to correct or minimize the effect of their loss.

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

*IR.VII.D.R1* Use of secondary flight displays when primary displays have failed.

*IR.VII.D.R2* Failure to maintain airplane control.

*IR.VII.D.R3* Distractions, loss of situational awareness, and/or improper task management.

**Skills** The applicant demonstrates the ability to:

*IR.VII.D.S1* Advise ATC or the evaluator of if unable to comply with a clearance.

*IR.VII.D.S2* Complete a nonprecision instrument approach without the use of the primary flight instruments using the skill elements of the nonprecision approach Task (See [Area of Operation VI, Task A](#)).

*IR.VII.D.S3* Demonstrate SRM.

## VII. Postflight Procedures

**Task** **A. Checking Instruments and Equipment**

**References** 14 CFR parts 61, 91

**Objective** To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with checking flight instruments and equipment during postflight.

**Knowledge** The applicant demonstrates understanding of:

*IR.VIII.A.K1* Procedures for checking the functionality of all installed instruments and navigation equipment.

**Risk Management** The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:

*IR.VIII.A.R1* Failure to perform a proper postflight inspection and properly document airplane discrepancies.

**Skills** The applicant demonstrates the ability to:

*IR.VIII.A.S1* Conduct a **postflight inspection**, and document discrepancies and servicing requirements, if any.

## Practical Test Checklist (Applicant) Appointment with Evaluator

Evaluator's Name: \_\_\_\_\_

Location: \_\_\_\_\_

Date/Time: \_\_\_\_\_

### Acceptable Aircraft

- Aircraft Documents:
  - Airworthiness Certificate
  - Registration Certificate
  - Operating Limitations
- Aircraft Maintenance Records:
  - Logbook Record of Airworthiness Inspections and AD Compliance
- Pilot's Operating Handbook, FAA-Approved Aircraft Flight Manual

### Personal Equipment

- View-Limiting Device
- Current Aeronautical Charts (May be electronic)
- Computer and Plotter
- Flight Plan Form
- Flight Plan Form and Flight Logs (printed or electronic)
- Chart Supplements, Airport Diagrams and Appropriate Publications (regulations, AIM, etc.)

### Personal Records

- Identification—Photo/Signature ID
- Pilot Certificate
- Current Medical Certificate or BasicMed qualification
- Completed FAA Form 8710-1, Airman Certificate and/or Rating Application with Instructor's Signature or completed IACRA form
- Original Airman Knowledge Test Report
- Pilot Logbook with appropriate Instructor Endorsements
- FAA Form 8060-5, Notice of Disapproval (if applicable)
- Letter of Discontinuance (if applicable)
- Approved School Graduation Certificate (if applicable)
- Evaluator's Fee (if applicable)

## Use of Checklists

Throughout the practical test, the applicant is evaluated on the use of an appropriate checklist.

Assessing proper checklist use depends upon the specific Task. In all cases, the evaluator should determine whether the applicant appropriately divides attention and uses proper visual scanning. In some situations, reading the actual checklist may be impractical or unsafe. In such cases, the evaluator should assess the applicant's performance of published or recommended immediate action "memory" items along with his or her review of the appropriate checklist once conditions permit.

In a single-pilot airplane, the applicant should demonstrate the crew resource management (CRM) principles described as single-pilot resource management (SRM). Proper use is dependent on the specific Task being evaluated. The situation may be such that the use of the checklist while accomplishing elements of an Objective would be either unsafe or impractical in a single-pilot operation. In this case, a review of the checklist after the elements have been accomplished is appropriate. Use of a checklist should also consider visual scanning and division of attention at all times.

## Use of Distractions

Numerous studies indicate that many accidents have occurred when the pilot has been distracted during critical phases of flight. The evaluator should incorporate realistic distractions during the flight portion of the practical test to evaluate the pilot's situational awareness and ability to utilize proper control technique while dividing attention both inside and outside the flight deck.

## Positive Exchange of Flight Controls

There must always be a clear understanding of who has control of the aircraft. Prior to flight, the pilots involved should conduct a briefing that includes reviewing the procedures for exchanging flight controls.

The FAA recommends a positive three-step process for exchanging flight controls between pilots:

- When one pilot seeks to have the other pilot take control of the aircraft, he or she will say, "You have the flight controls."
- The second pilot acknowledges immediately by saying, "I have the flight controls."
- The first pilot again says, "You have the flight controls," and visually confirms the exchange.

Pilots should follow this procedure during any exchange of flight controls, including any occurrence during the practical test. The FAA also recommends that both pilots use a visual check to verify that the exchange has occurred. There must never be any doubt as to who is flying the aircraft.

## Aeronautical Decision-Making, Risk Management, Crew Resource Management and Single-Pilot Resource Management

Throughout the practical test, the evaluator must assess the applicant's ability to use sound aeronautical decision-making procedures in order to identify hazards and mitigate risk. The evaluator must accomplish this requirement by reference to the risk management elements of the given Task(s), and by developing scenarios that incorporate and combine Tasks appropriate to assessing the applicant's risk management in making safe aeronautical decisions. For example, the evaluator may develop a scenario that incorporates weather decisions and performance planning.

In assessing the applicant's performance, the evaluator should take note of the applicant's use of CRM and, if appropriate, SRM. CRM/SRM is the set of competencies that includes situational awareness, communication skills, teamwork, task allocation, and decision-making within a comprehensive framework of standard operating procedures (SOP). SRM specifically refers to the management of all resources onboard the aircraft as well as outside resources available to the single pilot.

Deficiencies in CRM/SRM almost always contribute to the unsatisfactory performance of a Task. While evaluation of CRM/SRM may appear to be somewhat subjective, the evaluator should use the risk management elements of the given Task(s) to determine whether the applicant's performance of the Task(s) demonstrates both understanding and application of the associated risk management elements.

## Operational Requirements, Limitations, & Task Information

### V. Navigation Systems

While the applicant is expected to be able to fly DME Arcs, they may be selected for testing only if they are

charted and available.

## VI. Instrument Approach Procedures

### Stabilized Approach Criteria

A stabilized approach is characterized by a constant angle, constant rate of descent approach profile ending near the touchdown point, where the landing maneuver begins.

### Use of RNAV or GPS System

If the practical test is conducted in an airplane equipped with an approach-approved RNAV or GPS system or FSTD that is equipped to replicate an approved RNAV or GPS system, the applicant must demonstrate approach proficiency using that system. If the applicant has contracted for training in an approved course that includes GPS training, and the airplane/FSTD has a properly installed and operable GPS, the applicant must demonstrate GPS approach proficiency.

### Localizer Performance with Vertical Guidance (LPV Minimums)

Localizer performance with vertical guidance (LPV) minimums with a decision altitude (DA) greater than 300 feet height above touchdown (HAT) may be used as a nonprecision approach; however, due to the precision of its glidepath and localizer-like lateral navigation characteristics, an LPV minimums approach can be used to demonstrate precision approach proficiency if the DA is equal to or less than 300 feet HAT.

### Vertical or Lateral Deviation Standard

The standard is to allow no more than a ¾ scale deflection of either the vertical or lateral deviation indications during the final approach. As markings on flight instruments vary, a ¾ scale deflection of either vertical or lateral guidance is deemed to occur when it is displaced three-fourths of the distance that it may be deflected from the indication representing that the aircraft is on the correct flight path.

### Task A. Nonprecision Approach

The evaluator will select nonprecision approaches representative of the type that the applicant is likely to use. The choices must use at least two different types of navigational aids.

Examples of acceptable nonprecision approaches include: VOR, VOR/DME, LOC procedures on an ILS, LDA, RNAV (RNP) or RNAV (GPS) to LNAV, LNAV/VNAV or LPV line of minima as long as the LPV DA is greater than 300 feet HAT. The equipment must be installed and the database must be current and qualified to fly GPS-based approaches.

The applicant must accomplish at least two nonprecision approaches in simulated or actual weather conditions.

- One must include a procedure turn or, in the case of a GPS-based approach, a Terminal Arrival Area (TAA) procedure.
- At least one must be flown without the use of autopilot and without the assistance of radar vectors. The yaw damper and flight director are not considered parts of the autopilot for purposes of this Task.
- One is expected to be flown with reference to backup or partial panel instrumentation or navigation display, depending on the aircraft's instrument avionics configuration, representing the failure mode(s) most realistic for the equipment used.

The evaluator has discretion to have the applicant perform a landing or a missed approach at the completion of each non precision approach.

### Task B. Precision Approach

The applicant must accomplish a precision approach to the decision altitude (DA) using aircraft navigational equipment for centerline and vertical guidance in simulated or actual instrument conditions. Acceptable instrument approaches for this part of the practical test are the ILS and GLS. In addition, if the installed equipment and database is current and qualified for IFR flight and approaches to LPV minima, an LPV minima approach can be flown to demonstrate precision approach proficiency if the LPV DA is equal to or less than 300 feet HAT.

The evaluator has discretion to have the applicant perform a landing or a missed approach at the completion of the precision approach.



## Appendix 9: References

This ACS is based on the following 14 CFR parts, FAA guidance documents, manufacturer's publications, and other documents.

14 CFR part 61	Certification: Pilots, Flight Instructors, and Ground Instructors
14 CFR part 91	General Operating and Flight Rules
AC 00-6	Aviation Weather
AC 00-45	Aviation Weather Services
AC 61-136	FAA Approval of Aviation Training Devices and Their Use for Training and Experience
AC 68-1	Alternative Pilot Physical Examination and Education Requirements
AC 91-74	Pilot Guide: Flight in Icing Conditions
AC 91.21-1	Use of Portable Electronic Devices Aboard Aircraft
AC 120-108	Continuous Descent Final Approach
AFM	Airplane Flight Manual
AIM	Aeronautical Information Manual
FAA-H-8083-2	Risk Management Handbook
FAA-H-8083-3	Airplane Flying Handbook
FAA-H-8083-15	Instrument Flying Handbook
FAA-H-8083-16	Instrument Procedures Handbook
FAA-H-8083-25	Pilot's Handbook of Aeronautical Knowledge
IFP	Instrument Flight Procedures
POH/AFM	Pilot's Operating Handbook/FAA-Approved Airplane Flight Manual
Other	Chart Supplements Navigation Charts NOTAMs

**Note:** Users should reference the current edition of the reference documents listed above. The current edition of all FAA publications can be found at [www.faa.gov](http://www.faa.gov).



## Appendix 10: Abbreviations and Acronyms

The following abbreviations and acronyms are used in the ACS.

Abb./Acronym	Definition
14 CFR	Title 14 of the Code of Federal Regulations
AATD	Advanced Aviation Training Device
AC	Advisory Circular
ACS	Airman Certification Standards
ADM	Aeronautical Decision-Making
AELS	Aviation English Language Standard
AFM	Airplane Flight Manual
AFS	Flight Standards Service
AIM	Aeronautical Information Manual
AKTR	Airman Knowledge Test Report
AMEL	Airplane Multiengine Land
AMES	Airplane Multiengine Sea
AOO	Area of Operation
ASEL	Airplane Single-Engine Land
ASES	Airplane Single-Engine Sea
ASI	Aviation Safety Inspector
ATC	Air Traffic Control
ATD	Aviation Training Device
ATP	Airline Transport Pilot
BATD	Basic Aviation Training Device
CDFA	Constant Descent Final Approach
CDI	Course Deviation Indicator
CFIT	Controlled Flight Into Terrain
CFR	Code of Federal Regulations
CRM	Crew Resource Management
DA	Decision Altitude
DH	Decision Height
DME	Distance Measuring Equipment
DP	Departure Procedures
DPE	Designated Pilot Examiner
FAA	Federal Aviation Administration
FFS	Full Flight Simulator
FMS	Flight Management System
FSDO	Flight Standards District Office
FSTD	Flight Simulation Training Device
FTD	Flight Training Device
GPS	Global Positioning System
HAT	Height Above Threshold (Touchdown)
IACRA	Integrated Airman Certificate and Rating Application
ICAO	International Civil Aviation Organization
IFO	International Field Office
IFP	Instrument Flight Procedures
IFR	Instrument Flight Rules

Abb./Acronym	Definition
IFU	International Field Unit
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
ICP	Instrument Rating Airplane <i>Canadian Conversion</i>
IPC	Instrument Proficiency Check
IR	Instrument Rating
IRA	Instrument Rating Airplane
LDA	Localizer-Type Directional Aid
LOA	Letter of Authorization
LOC	ILS Localizer
LPV	Localizer Performance with Vertical Guidance
LSC	Learning Statement Codes
MAP	Missed Approach Point
MDA	Minimum Descent Altitude
MFD	Multi-function Display
NAS	National Airspace System
NOTAMs	Notices to Airmen
NSP	National Simulator Program
PAR	Private Pilot Airplane
PFD	Primary Flight Display
PIC	Pilot-in-Command
POA	Plan of Action
POH	Pilot's Operating Handbook
QPS	Qualification Performance Standard
RAIM	Receiver Autonomous Integrity Monitoring
RNAV	Area Navigation
RNP	Required Navigation Performance
SMS	Safety Management System
SOP	Standard Operating Procedures
SRM	Single-Pilot Resource Management
STAR	Standard Terminal Arrival
UTC	Coordinated Universal Time
VDP	Visual Descent Point
VFR	Visual Flight Rules
V <sub>MC</sub>	Minimum Control Speed with the Critical Engine Inoperative
VOR	Very High Frequency Omnidirectional Range
WAAS	Wide Area Augmentation System