

INSTRUMENT RATING - AIRPLANE ASEL

Ref: FAA-S-8081-4E, - January 2010

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*This POA is to be used as a DPE guide for the Instrument Rating Practical Test.
Other factors/references should be considered as this is not a stand alone document.
As always, the PTS is the official guide.*

A. ADMINISTRATIVE (Preflight)

NAME: _____ PHONE/CELL: _____ DATE For EXAM: _____

INSTRUCTOR'S NAME: _____ PHONE/CELL _____

AIRCRAFT: _____ RETAKE Y/N: ____ LOCATION: _____

Applicants ICARA FTN# _____

1. Overview of test
 - a. Approximate time required.
 - b. Advise of note taking/use of POA.
 - c. Rules regarding PIC for the flight. FAR 61.47 An examiner represents the administrator for the purpose of conducting the test. ...to observe the applicants ability to perform the areas of concentration on the practical test. States that the examiner is not the pilot in command.
 - d. Rules for discontinuance of the test.
2. Grading criteria
 - a. Practical Test Standards, maneuvers based on Instrument Rating PTS.
 - b. Oral testing may take place during flight.

3. Ask for any questions from the applicant.

Eligibility

1. Application – 8710-1 in IACRA
2. Pilot Certificate- signed
3. Identification - Picture ID, AC 61-65C.
4. Logbook properly endorsed for Practical Test, 61.65 and 61.39 or 61.49 (retest)
5. Medical certificate - third class.
6. English - read, write, & converse fluently in English, 61.103(b)
7. Written Test Results within 24 months.
8. Aeronautical Experience, 61.65(d)

- (1) 50 hrs x-c time as PIC
 - 10 hrs in airplanes toward instrument rating airplane
- (2) 40 hrs instrument
 - 15 hrs training by CFII
 - 3 hrs by CFII within 60 days
- (3) 1 x-c flight under IFR
 - 250 NM along airways or ATC directed route, with 3 different types of instrument approaches at the airports along the route.

9. Required equipment:

- a. Aircraft Documents - **(AROW)**
- b. Aircraft Maintenance Records
 - 1. Logbook record of airworthiness inspections
 - 2. AD compliance
- c. POH or FAA approved AFM.
- d. Personal Equipment
 - 1. View limiting device
 - 2. Current aeronautical charts
 - 3. Computer & plotter
 - 4. Flight plan form
 - 5. Flight logs
 - 6. Current AIM, A/FD, AIM, FARs, & PTS

10. Examiner's Responsibilities

- a. Examiner may not assist applicant in the management of the aircraft, radio communications, navigational equipment, and navigational charts.
- b. Collision Avoidance
- c. Examiner shall use proper ATC terminology when simulating ATC clearances.
- d. Examiner shall determine if applicant is using visual clues during partial panel tasks.

COLLECT FEE

B. GROUND PHASE

I. AREA OF OPERATION: PREFLIGHT PREPARATION

NOTE: All questions pertain to operations as an INSTRUMENT PILOT. The Examiner should use his/her discretion about the number of questions to ask the applicant in each TASK.

A. PILOT QUALIFICATIONS

- () What are the recent flight experience requirements for an instrument pilot?
- () What must you do if your recent instrument rating flight experience has not been met?
- () What records should you keep in your log book ?

B. WEATHER INFORMATION

Reference: 14 CFR part 61; AC 00-6, AC 00-45; AIM.

- [] Name two types of weather charts? AC 61-23B, p. 151. Surface analysis, Weather Depiction, Radar Summary, & Significant Weather Prognostic Chart.
- [] Where could you obtain PIREPS and under what conditions would you initiate one? FSS, AIM
- [] What is a SIGMET? An AIRMET? AIM Glossary, p. S-2 & A-4
- [] What is a NOTAM? AIM Glossary, p. N-2
- [] Where to do obtain the location/altitude of the freezing level? AIRMET Zulu, SIG PRG, or FD
- [] To whom and how would you report a wind shear encounter? AIM, para. 7-22.
- [] GO/NO-GO/Alternate Decision -- Provide current forecast weather information. Have applicant determine if an alternate is required and why.
- [] Describe what you would do if you inadvertently penetrated a thunderstorm. IFH 11-1
- [] Describe what you would do if you inadvertently flew into icing conditions. IFH 11-2
- () Explain the importance of the ILS critical area and what are the weather conditions when the ILS/LOC critical area is effective. 800/2 & 200/1& or 2000 RVR or less. AIM chapter 1, page 361.

NOTE: For Cross Country planning: Use actual or simulated weather condition for area to be flown.

C. CROSS-COUNTRY FLIGHT PLANNING

Reference: 14 CFR parts 61, 91; AC 61-27, AC 61-23, AC 90-94; AFD; AIM, IFH.

- [] Plan a flight from _____ to _____ via _____. Applicant must obtain weather. Flight should be planned for considering fuel, loading, weather, NOTAMs, and regulatory requirements.

- [] Selects and uses current and appropriate en-route charts, instrument departure procedures (DP's), Standard Terminal Arrival (STAR), and Standard Instrument Approach Procedure Charts (IAP).
- [] Selects appropriate radio navigation aids?
- [] What is the MEA along your route? What is MOCA?
- [] Describes and interprets symbols located on appropriate charts.
- [] Describe Preferred IFR Routes, and where they can be obtained? AFD, Jepp IAP, FSS
- [] Completes navigation log?
- [] Completes and files a IFR flight plan?
- () What is destination WX min. for planning? 2000/3 +- 1hr FAR 91
- () What is the Alt. wx criteria for planning? 600/2, 800/2 @ETA FAR 91
- [] Describes GPS CDI sensitivities.
 - Enroute Mode (ENR) = 5 NM
 - Terminal Mode (TERM) = 1 NM
 - Approach Mode (APPR) = .3 NM
- [] What is Receiver Autonomous Integrity Monitoring (RAIM), and what does it check?
 1. Signal Strength
 2. Number of Satellites
 3. Satellite Geometry
- [] How can you obtain NOTAMs? FSS, when specifically asked for
- () IFR fuel requirements?
- () Pilots should file an IFR flight plan at least _30_ mins prior to ETD.
- () Position reports. ID, position, time, altitude, ETA and name if next, name of succeeding point, remarks.
- () Instrument approach category. Category A: less than 91kts. B: 91 – 121 kts.
- () What is the requirement for VOR equipment checks? 91.171 30 days in the log there must be date, place, bearing error, and signature of person making the test.
- () When IDing DMEs remember the ID only runs every 30 secs while the VOR ID runs continuously.
- () Under part 91.175 when may a pilot operate an airplane below the DH or MDA?
 - (1)The airplane is continuously in a position from which a descent to a landing on the intended runway can be made at a normal rate of descent using normal maneuvers.
 - (2) the flight vis is not less than the visibility is not less than that prescribed in the approach.

(3) when at least one of the following visual references for the intended runway is distinctly visible and identifiable to the pilot: a. the approach light system, except that the pilot may not descend below 100 feet above the touchdown zone elevation using the approach lights as a reference unless the red terminating bars or the red side row bars are also distinctly identifiable. (Only ALSF-1 lighting system have red terminating bars, Only ALSF-2 have red side row bars placed along the last 1,000 ft before the threshold to the left and right of the centerline lights.)

- () What is your responsibility to your passengers with regard to safety belts? 91.107
- () What is the range and altitude boundaries for a L (low altitude) VOR? From 1,000 AGL up to and including 18,000 AGL at radial distances to 40 NM. AIM Ch.1, nav aids

II. AREA OF OPERATION: PREFLIGHT PROCEDURES

A. AIRCRAFT SYSTEMS RELATED TO IFR OPERATIONS

Reference: 14 CFR parts 61, 91; AC 61-27, AC 61-84, aircraft POH, IFH.

- () What is the max altimeter error allow for IFR Flight? 75 feet – Instrument flying handbook ch 3
- () How much does WAAS increase sensitivity inside the final approach fix? Inside the final approach fix, WAAS increases the lateral sensitivity from 0.3 NM to 0.02 (40 meters).
- () On the G1000 if the PFD fails, the system automatically switches to reversionary mode. Do you still have any of the critical flight data available. Yes, critical flight data is transferred to the MFD>
- () Does a VASI provide obstruction clearance? If so to what degree? + - 10 degrees, 4NM from threshold.
- () When flying an approach, a non-WAAS GPS, it will activate approach mode at 2 nm from the final approach fix and full scale deflection will reduce to 0.3 nm.
- () When should pilots expect to hold short of the ILS critical area at a controlled field? With weather is less than 800' and 2SM.
- [] Is this aircraft permitted to fly in known icing conditions?
- [] How would you know if you flew in icing conditions? Visible ice on windshield, airframe, or decrease in performance
- [] Describe what you would do if you suspected icing conditions. IFH
- [] Describe anti/de-icing equipment installed on this airplane.
- [] Explain what can be done to prevent icing in the fuel system.
- [] Explain when to use carburetor heat on this aircraft?

B. AIRCRAFT FLIGHT INSTRUMENTS AND NAVIGATION EQUIPMENT

Reference: 14 CFR parts 61, 91; AC 61-27, AC 61-84, AC 90-48, Airplane POH.

- [] Describe the Pitot-Static System for this airplane.
- [] What flight instruments utilize the Pitot-Static System, and how do they operate? POH
- [] Where does the attitude indicator derive its power ? POH
- [] What powers the airspeed indicator?
- () What does the altimeter measure? It measures changes in atmospheric pressure. It is a barometer. Converts the baro. pressure measurement to read Altitude. Inst flying handbook
- [] What powers the attitude gyro in this airplane? POH
- [] Where does the directional gyro receive its power? POH

- [] Explain the errors associated with the magnetic compass. Accelerate, DIP
- [] Describe slant range error.
- [] Explain the Instrument Landing System (ILS). Guidance, Distance, and ALS
- [] Explain the required instruments and equipment/required equipment checks for IFR Flight.
- () Explain the VOT receiver check. VOT, OBS set to 0 the CDI centered, read' from.' Or 180' TO
- () Runway centerline lights- If while landing you saw the runway centerline lights as alternating red and white, what would that mean to you? 2000 ft remaining. Then you saw continuous red lights what would that mean to you? 1000 ft remaining.

C. INSTRUMENT COCKPIT CHECK. (Line check)

III. AREA OF OPERATION: AIR TRAFFIC CONTROL CLEARANCES AND PROCEDURES

- A. Air traffic control clearances (Line check)
- B. Compliance with departure, en route, and arrival procedures & clearances. (Line check)
- C. Holding procedures. (Line check)

IV. FLIGHT BY REFERENCE TO INSTRUMENTS (LINE CHECK)

- A. Basic instrument flight maneuvers (Line check)
- B. Recovery from unusual attitudes. (Line check)
- [] How long would it take to turn 30/45/60/90/180/360 degrees?
- [] Explain how you would recover from a nose high/low unusual attitude?

V. NAVIGATION SYSTEMS

- A. Intercepting and Tracking navigational systems and DME arcs. (Line check)

VI. INSTRUMENT APPROACH PROCEDURES

- [] What is the procedure for flying an approach at an uncontrolled airport? AIM
- A. Nonprecision Approaches (Line check)
- B. Precision Approaches. (Line check)
- C. Missed Approach (Line check)
- D. Circling Approach (Line check)
- E. Landing from a straight in or Circling Approach. (Line check)

VII. EMERGENCY OPERATIONS

A. Loss of Communications

- [] How would you notify ATC that you have lost your radio(s)? AIM
- [] Explain what you would do if you lost communications here (point to en-route chart).
- [] What route would you fly if you lost communications? AIM
- [] What action will you take if we lose communications on this flight? AIM
- [] What altitude would you fly if you lost communications? AIM

B. One engine Inoperative during Straight and level Flight and Turns (Multiengine) (LINE CHECK)

C. One engine inoperative instrument approach (Multiengine) (LINE CHECK)

D. APPROACH WITH LOSS OF PRIMARY FLIGHT INSTRUMENT INDICATORS. (LINE CHECK)

VIII. POSTFLIGHT PROCEDURES

- () How would you check your equipment and instruments on a post flight?

SPECIAL EMPHASIS AREAS

EXAMINERS SHALL PLACE SPECIAL EMPHASIS ON AREAS OF AIRCRAFT OPERATION CONSIDERED CRITICAL

Positive aircraft control: positive exchange of the flight controls: stall/spin awareness: collision avoidance

Wake turbulence avoidance: LAHSO: runway incursion avoidance: CFIT: ADM & risk management

Checklist usage and other areas deemed appropriate to any phase of the practical test.

C. FLIGHT

NAME: _____ DATE: _____

AIRCRAFT M/M: _____ 'N': _____ TIME OFF: _____ ON: _____

PRE-FLIGHT BRIEFING

- PIC—You are the PIC. 61.47.
- Emergencies—Actual & simulated.
- Transfer of flight controls—Positive, If I state, “I have the flight controls,” you respond, “You have the flight controls,” observe that I have them, then release. Any Questions?
- Looking for other traffic.
- Clearing area—clear the area before each maneuver.
- Profile of flight test.
- Oral questions during flight.
- Unsatisfactory maneuvers—continue or discontinue.
- Aircraft documents—return to aircraft.
- QUESTIONS?

I. PREFLIGHT PREPARATION

- A. Pilot Qualifications
- B. Weather Information
- C. Cross-Country Flight Planning

II. PREFLIGHT PROCEDURES

- A. Aircraft Systems Related to IFR Flight
- B. Aircraft Flight Instruments and Navigation Equipment
- C. Instrument Cockpit Check

III. AIRPORT TRAFFIC CONTROL CLEARANCES AND PROCEDURES

- A. Air Traffic Control Clearances
- B. Compliance with Departure, En Route, and Arrival Procedures and Clearances
- C. Holding Procedures

IV. FLIGHT BY REFERENCE TO INSTRUMENTS

- A. Basic Instrument Flight Maneuvers.
- B. Recovery from Unusual Flight Attitudes.

V. NAVIGATION SYSTEMS

- A. Intercepting and Tracking Navigational Systems and DME Arcs

VI. INSTRUMENT APPROACH PROCEDURES

- A. Non-Precision Instrument Approach (must do 2, one with PT)
- B. Precision ILS Instrument Approach (must do 1)
- C. Missed Approach
- D. Circling Approach
- E. Landing From a Straight-In or Circling Approach

VII. EMERGENCY OPERATIONS

- A. Lost Communications
- B. One engine inoperative during straight & level flight and turns. (MEA)
- C. One engine inoperative-instrument approach. (MEA)
- D. Approach with Loss of Primary Flight Instrument Indicators.

VIII. POSTFLIGHT PROCEDURES

- A. Checking Instruments and Equipment

D. ADMINISTRATIVE (Postflight)

Critique

1. Applicant informed of determination.
2. Review areas of weakness.
3. Provide guidance for improvement.
4. Ask if any questions.
5. Schedule for retake if disapproval.

Files

8700.1 Handbook, Chapter 11

To Applicant:

1. Copy of Temporary certificate/notice of disapproval.
2. Return written test results when disapproved.

To AAC-260

1. Original Temporary certificate/notice of disapproval.
2. 8710.1 (fill out back, verify applicant's ID).
3. Written test results, unless disapproval.
4. Superseded Certificate/previous disapproval.

I, _____ have been administered this evaluation and have been advised of the outcome.

Applicant

Date