Pilot & Instructor’s Guide to the
Instrument Proficiency Check

GET THE COMPETITIVE EDGE
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Introduction

The purpose of the Instrument Proficiency Check is to satisfy the requirements set forth in 14 CFR 61.57(d). The current version of the Practical Test Standards (PTS) for the instrument rating stipulates that the flight portion of an IPC must include certain aeronautical tasks specific to instrument flying. This section offers guidance emphasizing a thorough ground review, and on administering an IPC in an aircraft with advanced avionics.

For your IPC at ATP, be prepared to demonstrate the required knowledge listed in the Ground Review Checklist located in this section. You should also be prepared to accomplish the required flight activities for an IPC listed in Flight Activities Table. Your IPC will be conducted by following the FAA recommended format (included in this section).

1. Review this section and associated references
2. Complete the quiz at the end of the section
3. Bring the quiz, your logbooks, pilot certificates, medical certificate, and your unexpired U.S. PASSPORT with you to training

Feel free to contact your instructor at your training location or the training department at ATP if you have any questions about your IPC training or preparation.

We wish you the best of success in achieving your aviation objectives.

Sincerely,

ATP Training Department
training@allatps.com
Step 1: Preparation

Expectations: Regulations for the flight review (14 CFR 61.56) require a minimum of one hour of ground training and one hour of flight training. While 14 CFR 61.57(d) does not stipulate a minimum time requirement for the IPC, a good rule of thumb is to plan at least 90 minutes of ground time and at least two hours of flight time for a solid evaluation of the pilot’s instrument flying knowledge and skills. Depending on the pilot’s level of instrument experience and currency, you may want to plan on two or more separate sessions to complete an IPC. For pilots with little or no recent instrument flying experience, it is a good idea to schedule an initial session in an appropriate aircraft training device (ATD).

Regulatory Review: The regulations (14 CFR 61.57(d)) state that an IPC must include “a representative number of tasks required by the instrument rating practical test.” A thorough IPC should cover general operating and flight rules for IFR as set out in 14 CFR Part 91 and in the Aeronautical Information Manual (AIM). To make the best use of ground time, ask the pilot to review the Instrument Procedures Handbook (FAA-H-8261-1A), Instrument Flying Handbook (FAA-H-8083-15), and Aviation Weather and Weather Services in advance of your session. Remind the pilot to bring current copies of documents such as the instrument rating PTS, FAR/AIM, charts (en route and instrument approach procedures), Airport/Facility Directory (A/FD), and Pilot’s Operating Handbook (POH) or Airplane Flight Manual (AFM) for the aircraft to be used.

As part of the IPC preparation process, you may want to ask the pilot to complete the IPC Prep Course available in the Aviation Learning Center at www.faasafety.gov. This online course lets the pilot review material at his or her own pace and focus attention on areas of particular interest.

Cross-Country Flight Plan Assignment: Because IFR flying is almost always for transportation purposes, structuring the IPC as an IFR cross-country – ideally one representative of the pilot’s typical IFR flying -- is an excellent way to evaluate real world instrument flying skills. The airport(s) to be used should have published instrument approach procedures. The flight plan should include consideration of all preflight planning elements required by 14 CFR 91.103, as well as appropriate instrument departure, arrival, and approach procedures. It should be based on a standard weather briefing for the day of the discussion and flight. If the ground and flight portions take place on different days, the pilot should have current weather for each session.

To ensure a thorough evaluation of the pilot’s weather interpretation and analysis skills – especially if the weather for the actual IPC is MVFR or better – your own advance preparation might include obtaining a weather briefing for the assigned route on an IFR or low IFR (LIFR) day. You can either provide this IFR briefing to the pilot for advance analysis, or present it during the session for an on-the-spot review and evaluation.

Step 2: Ground Review

Knowledge is key to safe instrument operation, but it needs to be much deeper than the ability to recite rules and regulations. Scenario-based training is a very effective way to test a pilot’s knowledge in the context of real-world IFR flying, so consider using the pre-assigned XC flight plan as a basis for both the ground review and the actual flight. A good ground review technique is to work through rules and “real world” procedures related to each phase of flight from departure to the destination airport. Topics to cover include the following:

✓ Preflight (14 CFR 91.103)

For a flight under IFR, the pilot must become familiar with “all available information.” For the pre-assigned flight plan, the pilot should be able to address the following topics:
Weather (standard briefing)

- **Describe** weather for departure, en route, and arrival, to include discussion of forecast convective activity or freezing levels/cloud bases along the intended route. For example: “Conditions for departure are VFR, but we will encounter MVFR and IFR conditions en route. Conditions for ETA at destination are IFR. There is no convective activity in the forecast, but the freezing level is expected to be just above the filed altitude.”

- **Evaluate** current/forecast weather in terms of:
  - Personal minimums
  - Aircraft equipment
  - Terrain / obstacle avoidance
  - Distance, time, and fuel to nearest VFR conditions

Expected performance & equipment required (airworthiness)

- **Determine** that aircraft is appropriately equipped for proposed flight (14 CFR 91.205(d), 14 CFR 19.171, Kinds of Operations Equipment List (KOEL) if provided in the Aircraft Flight Manual (AFM)).

- **Calculate** expected aircraft performance (takeoff/landing distances and cruise performance) under known and forecast conditions.

- **Describe** operation and failure modes of installed equipment (e.g., GPS, autopilot, avionics), and appropriate pilot response (including the requirement to report failures to ATC).

Alternatives

- **Determine** if weather requires filing an alternate and, if so:

- **Designate** alternates that are not only “legal,” but also appropriate to conditions, pilot experience, needs, etc. If planning to fly a GPS approach to the destination, consider the need to have a non-GPS approach at the alternate unless there is a WAAS-capable GPS. Can the pilot identify viable alternatives for every 25-30nm along the route? Does he or she establish “tripwire” conditions related to personal minimums as triggers for diversion?

Length / lighting of runways to be used

- **Determine** that available runway length is at least 150% of values shown in the POH/AFM, or at least 200% of the POH/AFM numbers for a wet, icy, or otherwise contaminated runway.

- **Explain** LAHSO procedures (AIM 4-3-11), if in effect at the airport(s) to be used.

- **Describe** expected lighting, including lighting as it applies to descent below MDA or DA (14 CFR 91.175).

Traffic delays

- **Determine** whether traffic delays might require holding, and

- **Describe** holding procedures (AIM 5-3-7). During this part of the review, you may want to give the pilot a practice holding clearance and have him or her explain how the entry would be made.
from the en route heading to the holding fix. For aircraft equipped with GPS moving map navigators, does the pilot understand how to set up and use this equipment to fly a non-published (“random”) holding pattern?

How much fuel is required

- **Calculate** fuel requirements sufficient to fly approaches at both the destination and alternate, and
- **Decide** on the amount of reserve fuel (e.g., legal reserve plus safety margin appropriate to reported and forecast weather conditions).

**Risk Management & Personal Minimums**

The ground discussion should include all risk factors that affect the planned flight, as well as the types of trips the pilot typically flies. The PAVE checklist is one way to make a structured identification and analysis. For example:

- **Pilot:** general health, physical / mental / emotional state; proficiency, currency
- **Aircraft:** airworthiness, equipment, performance capability
- **Environment:** weather hazards, terrain, airports / runways to be used, conditions
- **External pressures:** meetings, people waiting at destination, etc.

For each risk factor identified, ask the pilot what strategies can be used to mitigate or eliminate the hazards. This part of the IPC also offers an excellent opportunity to discuss personal minimums, and to help the pilot complete a personal minimums worksheet if he or she has never done so.

**Personal Minimums Checklist:** One of the most important concepts to convey is that safe pilots understand the difference between what is “legal” in terms of the regulations, and what is “smart” or “safe” in terms of pilot experience and proficiency. For this reason, assistance in completing a Personal Minimums Checklist tailored to the pilot’s individual circumstances is perhaps the single most important “takeaway” item you can offer. Use the Personal Minimums Development Worksheet in Appendix 3 to help the pilot work through some of the questions that should be considered in establishing “hard” personal minimums, as well as in preflight and in-flight decision-making for flight under IFR.

It may also be helpful to include key findings from accident data. For example, instrument pilots should be aware that non-precision approaches have an accident rate five times great than precision approaches. Circling approaches, particularly at night, also increase risk, so the pilot should consider such factors as how much of a tailwind can be acceptable in lieu of a circling approach.

**✓ Taxi, Takeoff and Departure**

Even at a familiar airport, departure under instrument meteorological conditions can be challenging. Topics to cover in this part of the review include:
Taxi Procedures and Runway Incursion Avoidance

One of the FAA’s top priorities is to reduce the frequency of runway incursions and the risk of a runway collision, so be sure that the pilot can correctly identify airport markings. Give the pilot a practice taxi clearance from ramp to runway, and ask him or her to show you on the airport diagram how to execute it. If the airports to be used have only a single runway, give the pilot taxi instructions for a more complex airport.

The FAA’s Runway Safety Office (http://www.faa.gov/runwaysafety/) offers links to a number of resources available to help pilots operate safely on the airport surface. Sections 4-3-18 and 4-3-19 of the Aeronautical Information Manual (AIM) also offer guidance on safe taxi procedures, including taxi during low visibility conditions.

Instrument Departures (AIM 5-2-7)

All departure procedures (DPs) provide a way to depart the airport and transition safely to the en route structure, but proficient instrument pilots need to understand the difference between obstacle departure procedures (ODPs) and standard instrument departure procedures (SIDs). If the airport to be used has a SID, ask the pilot to explain how he or she would file and fly that specific procedure. Other questions to ask:

**Obstacle Departure Procedures:**

- What is an ODP, and where do you find it?
- What functions does the ODP serve?
- Do you need an ATC clearance to fly an ODP?
- Can ATC assign an ODP for departure from a non-towered airport?
- When should you fly an ODP?
- When departing from an airport without an ODP or SID, how will you ensure terrain/obstacle clearance until reaching a published MEA?

**Standard Instrument Departure Procedures:**

- What is a SID, and where do you find it?
- What functions does the SID serve?
- Can you fly a SID without ATC clearance?
- How do you file a SID (e.g., how is it stated in the flight plan)?

✓ **En Route**

Topics to review in connection with en route IFR operations include the following:

**Airways and Route Systems**

Using the proposed route of flight on the appropriate IFR en route chart, ask the pilot to talk you through the journey. Be sure that the pilot is familiar with standard terms and symbols (e.g., MEA, MOCA, MORA, COP). Most pilots are familiar with the airway system defined by VOR facilities, but if your client flies 3-4 and AIM 5-1-8(d) on RNAV routes. Questions to ask:

- What is a published RNAV (Q) route, and who can use it?
- What is an “unpublished” RNAV route, and when can you fly it?
- What is the Magnetic Reference Bearing (MRB), and what are the limitations on its use?
En Route Navigation (AIM 1-1-19)

This portion of the ground review should focus on use of the specific navigational equipment installed in the aircraft to be used for the IPC. For IPCs in aircraft equipped with GPS moving map navigators, special emphasis topics include:

- What requirements must your GPS meet before you can use it for IFR (e.g., equipment / installation approvals; operation in accordance with approved AFM or flight manual supplement, etc.)
- Under what conditions can you use GPS in place of ADF or DME equipment?
- Under what circumstances must you have (and use) means of navigation other than GPS?
- What is RAIM, and when is it required?
- What are GPS NOTAMs (1-1-19), and how do you find them?
- Must your database be current?
- How and where are GPS database updates logged?
- How does course and distance information on a GPS navigation display differ from data presented on navigational charts and conventional instrumentation?

En Route Weather

Since weather is at the heart of IFR flying, no IPC ground review can be complete without ensuring that the pilot is thoroughly familiar with sources of in flight weather information. A competent instrument pilot should know how to contact, address, and use the En Route Flight Advisory Service. As described in AIM 7-1-5, EFAS, or “Flight Watch,” is a service specifically designed to provide timely, meaningful, and pertinent weather, as well as to collect and distribute pilot reports (PIREPs). EFAS is available on 122.0 between 5,000 MSL and 17,500 MSL; frequencies for other altitudes are listed in the AIM. Pilots should also be familiar with AIM 7-1-15 on ATC In flight Weather Avoidance Assistance, including ATC descriptive terminology for convective activity and weather radar echoes. Be sure to note that there have been recent changes to the terminology that ATC uses to describe weather radar echoes.

Whether via approved installation or a portable handheld unit, weather datalink (AIM 7-1-11) provides both textual and graphical information that can help improve pilot situational awareness. While datalink has significant potential to improve GA safety, realization of these safety benefits depends heavily upon the pilot’s understanding of the specific system’s capabilities and limitations. With datalink, IFR pilots should pay particular attention to such system limitations as:

- **Latency.** Where would you find the time stamp or “valid until” time on the particular datalink weather information displayed in the cockpit? (Note: since initial processing and transmission of NEXRAD data can take several minutes, pilots should assume that datalink weather information will always be a minimum of seven to eight minutes older than shown on the time stamp and use datalink weather radar images for broad strategic avoidance of adverse weather.)

- **Coverage.** What coverage limitations are associated with the type of datalink network being used? (For example, ground-based systems that require a line-of-sight may have relatively limited coverage below 5,000 feet AGL. Satellite-based datalink weather systems can have limitations stemming from whether the network is in geosynchronous orbit or low earth orbit (LEO). Also, National Weather Service coverage has numerous gaps, especially in the western states.)

- **Content/format.** Since service providers often refine or enhance datalink products for cockpit display, pilots must be familiar with the content, format, and meaning of symbols and displays in the specific system.
Abnormal Procedures and Emergencies

An IPC ground review of abnormal/emergency procedures for IFR operations should include the following topics:

- **Loss of two-way radio communications (AIM 6-4-1).** As stated in the AIM, a pilot who experiences a radio communications failure in VFR conditions should remain VFR and land as soon as practicable. In IFR conditions, the pilot should continue via the route assigned, vectored, expected, and at the highest of the following altitudes or flight levels for the route segment being flown: MEA, assigned, expected. Be sure to review the AIM guidance on clearance limits.

- **Loss of avionics/equipment (AIM 5-3-3; 14 CFR 91.185; 14 CFR 91.187):** Any loss of navigational capability (e.g., loss of one VOR in a dual VOR installation) during operations in controlled airspace should be reported to ATC, along with information on the degree to which the problem affects the aircraft’s ability to operate under IFR in the ATC system.

- **Loss of PFD/MFD/Autopilot:** Many pilots today operate with the situational awareness advantage of moving map navigators, “glass cockpit” avionics, and capable autopilots. If your client uses such equipment, or if it is installed in the aircraft to be used for the IPC, have the pilot describe failure modes and recommended procedures for each piece of equipment. The pilot should also be able to describe how one failure may affect other installed components (e.g., how would failure of the AHRS or ADC affect the autopilot?).

✓ Arrival and Approach Procedures

Check for the pilot’s understanding of the ways to fly an instrument approach:

- **Via pilot navigation (“own nav”):**
  - Where are the IAFs?
  - Which IAFs require a course reversal, and how should it be flown?

- **Via vectors**
  - What are minimum vectoring altitudes?
  - How can you maintain position awareness relative to nearby terrain?

- **Via direct to IF (intermediate fix)**
  - Is a course reversal required if a racetrack is depicted at the IF?
  - What are the requirements for a controller to issue a clearance direct to the IF?

Standard Terminal Arrival Procedures (AIM 5-4-1)

In reviewing the basics of flying a standard terminal arrival procedure (STAR), points to cover include the following:

- How do you file a STAR?
- When navigating a STAR, when may you descend?
- What does it mean if ATC instructs you to “descend via” the STAR?
- Do you need the approved chart in order to fly a STAR?
- What is an RNAV STAR?
Terminal Arrival Areas (AIM 5-4-5)

Some pilots may not be familiar with the concept of terminal arrival areas, which have been designed to provide a seamless transition from the en route structure to the terminal environment for aircraft equipped with GPS or Flight Management System (FMS) navigational equipment. Questions to ask:

- How are TAA lateral boundaries identified?
- How can the pilot determine which area of the TAA the aircraft will enter?
- When ATC clears you to enter the TAA, what are you expected to do?

Instrument Approach Procedures (AIM 5-4-5)

In addition to reviewing the terms, symbols, and basic steps for flying a conventional instrument approach procedure (e.g., ILS, LOC, VOR, NDB), you will also want to see whether the pilot understands RNAV (GPS) procedures and charting formats, with special emphasis on the minimums section. For example:

- What is LPV?
  - How do you know if you can fly to LPV minimums?
  - Does it include a DA or MDA?
  - At what point does the missed approach begin?

- What is LNAV/VNAV?
  - How do you know if you can fly to LNAV/VNAV minimums?
  - Does it include a DA or MDA?
  - What limitations (e.g., temperature) apply if using a WAAS receiver?
  - Can you use a remote altimeter setting with a WAAS receiver?

- What is LNAV+V?
  - At what point does the vertical glide path intercept the MDA?

- What is LNAV?
  - How do you know if you can fly to LNAV minimums?
  - Does it include a DA or MDA?

Another area to cover is the use of visual descent points (VDPs), which are described in AIM 5-5-5. For example:

- What is a VDP?
  - How is the VDP identified on the chart?
  - What techniques are required to fly a procedure with a VDP?
  - If the approach includes a VDP, when may you descend below MDA?

✓ Missed Approach Procedures

Missed Approach (AIM 5-4-21 and AIM 5-5-5)

The missed approach procedure (MAP) is one of the most challenging maneuvers a pilot can face, especially when operating alone (single pilot) in IMC. Safely executing the MAP requires a precise and disciplined transition that involves not only aeronautical knowledge and skill – the natural areas of focus in most training programs – but also a crucial psychological shift. There is little room for error on instrument missed approach procedures, and a pilot who hesitates due to deficits in procedural knowledge, aircraft
control, or mindset can quickly come to grief. Important MAP topics to cover in the IPC ground review include:

- At what point must you execute the MAP:
  - When flying a precision approach?
  - When flying a non-precision approach?

- What is the proper procedure if the decision to miss is made prior to reaching the MAP?

- Do rules and procedures require you to fly to the filed alternate after a missed approach at the intended destination?

- After executing the missed approach, what factors should you consider when deciding whether to make a second attempt, as opposed to proceeding to an alternate?

**Step 3: Flight Activities**

A proficient instrument pilot must possess knowledge and skill in three distinct, but interrelated, areas:

- **Aircraft control skills** (i.e., basic attitude instrument flying, or (BAI) – crosscheck (including effective scan), interpret, and control. If the pilot flies in “glass cockpit” aircraft, the discussion should include appropriate and effective scanning techniques for these aircraft.

- **Aircraft systems knowledge** (i.e., knowledge and proficiency in instrument procedures and aircraft systems, including GPS/FMS, autopilot, datalink);

- **Aeronautical decision-making (ADM) skills** (i.e, higher-order thinking skills, flight planning & flight management, cockpit organization, weather analysis/anticipation).

There may be a temptation to focus the flight portion of the IPC on the first of these three areas (aircraft control), and to proceed sequentially through the required items chart in the PTS (FAA-S-8081-4D). While these activities can provide a snapshot of the pilot’s aircraft control skills, a series of approaches and other maneuvers conducted “out of context” will tell you little about the pilot’s knowledge of avionics and other aircraft systems, and even less about the pilot’s ability to make safe and appropriate decisions in real-world instrument flying.

Having the pilot fly the cross-country trip you assigned and discussed in the ground review is a good way to make a more thorough and integrated assessment of the pilot’s knowledge, skills, and judgment. Since ATC procedures are a critical part of instrument flying, ask the pilot to file and fly one leg “in the system.” A leg that involves flying from departure to destination gives you an opportunity to evaluate the pilot’s communication skills, systems knowledge and day-to-day decision-making skills, including risk management.

The other leg (which can come first, depending on how you choose to organize the exercise) can focus more on basic attitude instrument (BAI) flying, approaches, and holding patterns. For example, you might fly the return leg of the cross-country under VFR, putting the pilot under the hood for BAI exercises. At some point, give the pilot a scenario that requires a diversion (e.g., mechanical problem, unexpected weather below minimums). Ask the pilot to choose an alternate destination and, using all available and appropriate resources (e.g, chart, basic rules of thumb, “nearest” and “direct to” functions on the GPS) to calculate the approximate course, heading, distance, time, and fuel required to reach the new destination. Proceed to that point and, if feasible, do some of the basic aircraft control work (approaches, including circling approach, missed approach, and holding) at the unexpected alternate.
The diversion exercise has several benefits. First, it generates “teachable moments,” which those times when the learner is most aware of the need for certain information or skills, and therefore most receptive to learning what you want to teach. Diverting to an airport surrounded by high terrain, for example, provides a “teachable moment” on the importance of obstacle awareness and terrain avoidance planning.

Second, the diversion exercise quickly and efficiently reveals the pilot’s level of skill in each of the three areas:

- **Aircraft control skills:** The PTS task chart requires one precision approach and one non-precision approach, plus loss of primary flight instruments. Does the pilot maintain control of the aircraft when faced with a major distraction, and/or when flying the missed approach procedure? Consider as well asking the pilot to remove the hood and land out of a practice approach to DA or MDA. For a satisfactory IPC, the pilot should be able to perform all maneuvers in accordance with the Practical Test Standards (PTS) for the pilot certificate that he or she holds. If the pilot is flying a multi-engine aircraft for the check, a single-engine approach is essential.

- **Aircraft systems knowledge:** Does the pilot demonstrate knowledge and proficiency in using avionics and aircraft systems, including GPS moving map navigators and the autopilot? The pilot should be thoroughly familiar with both normal and abnormal operation of all systems, and understand how they work together in IFR flying. In technically advanced aircraft, does the pilot understand the significance of indicators for “ENR,” “TERM,” and “APR?” Does the pilot correctly manage the sequence for selecting navigation source and arming the autopilot’s approach mode? Does the pilot effectively access and manage the information available in onboard databases?

- **Aeronautical decision-making (ADM) skills:** Give the pilot multiple opportunities to make decisions. Asking questions about those decisions is an excellent way to get the information you need to evaluate ADM skills, including risk management. For example, ask the pilot to explain why the alternate airport selected for the diversion exercise is a safe and appropriate choice. What are the possible hazards, and what can the pilot do to mitigate them? Be alert to the pilot’s information and automation management skills as well. For example, does the pilot perform regular “common sense” crosschecks of what the GPS and/or the autopilot are doing? Does the pilot always keep track of position when being vectored, using cross radials? Does the pilot maintain awareness of weather, personal minimums and alternates at all times?

**Step 4: Post-Flight Debriefing**

Most instructors have experienced the traditional model of training, in which the teacher does all the talking and hands out “grades” with little or no student input. There is a place for this kind of debriefing; however, a collaborative critique is a more effective way to determine that the pilot has not only aircraft control skills and systems knowledge, but also the situational awareness and judgment needed for sound aeronautical decision-making. Here is one way to structure a collaborative post flight critique:

**Replay:** Rather than starting the IPC post flight briefing with a laundry list of areas for improvement, ask the pilot to verbally replay the flight for you. Listen for areas where your perceptions are different, and explore why they don’t match. This approach gives the pilot a chance to validate his or her own perceptions, and it gives you critical insight into his or her judgment abilities.

**Reconstruct:** The reconstruct stage encourages the pilot to learn by identifying the “would’a could’a should’a” elements of the flight – that is, the key things that he or she would have, could have, or should have done differently.
Reflect: Insights come from investing perceptions and experiences with meaning, which in turn requires reflection on these events. For example:

- What was the most important thing you learned today?
- What part of the session was easiest for you? What part was hardest?
- Did anything make you uncomfortable? If so, when did it occur?
- How would you assess your performance and your decisions?
- Did you perform in accordance with the Practical Test Standards?

Redirect: The final step is to help the pilot relate lessons learned in this flight to other experiences, and consider how they might help in future flights. Questions:

- How does this experience relate to previous flights?
- What might you do to mitigate a similar risk in a future flight?
- Which aspects of this experience might apply to future flights, and how?
- What personal minimums should you establish, and what additional proficiency flying and training might be useful?

Step 5: Instrument Practice Plan

Offer the pilot an opportunity to develop a personalized IFR skill maintenance and improvement plan. Such a plan should include consideration of the following elements:

Personal Minimums Checklist: As noted earlier, one of the most important concepts to convey in the flight review is that safe pilots understand the difference between what is “legal” in terms of the regulations, and what is “smart” or “safe” in terms of pilot experience and proficiency. For this reason, assistance in completing a personal minimums checklist tailored to the pilot's individual circumstances is perhaps the single most important “takeaway” item you can offer. The Personal Minimums Development Worksheet in Appendix 3 is one tool you can use to help the pilot work through issues that should be considered in establishing “hard” personal minimums, as well as in preflight and in-flight decision-making.

Instrument Proficiency Practice Plan: Many pilots would appreciate your help in developing a plan for maintaining and improving basic instrument flying skills.

Training Plan: Discuss and schedule any additional training the pilot may need to achieve individual flying goals. For example, the pilot’s goal might be to develop the competence and confidence needed to fly IFR at night, or to lower personal minimums in one or more areas. Use the form in Appendix 7 to document the pilot’s aeronautical goals and develop a specific training plan to help him or her achieve them.

The IPC is a vital link in the general aviation safety chain. As a person authorized to conduct this review, you play a critical role in ensuring that it is a meaningful and effective tool for maintaining and enhancing GA safety.
IPC Checklist

References

14 CFR 61.57(d) — *Instrument proficiency check.*

Except as provided in paragraph (e) of this section, a person who does not meet the instrument experience requirements of paragraph (c) of this section within the prescribed time, or within 6 calendar months after the prescribed time, may not serve as pilot in command under IFR or in weather conditions less than the minimums prescribed for VFR until that person passes an instrument proficiency check consisting of a representative number of tasks required by the instrument rating practical test.

(1) The instrument proficiency check must be—
   (i) In an aircraft that is appropriate to the aircraft category;
   (ii) For other than a glider, in a flight simulator or flight training device that is representative of the aircraft category; or
   (iii) For a glider, in a single-engine airplane or a glider.

(2) The instrument proficiency check must be given by—
   (i) An examiner;
   (ii) A person authorized by the U.S. Armed Forces to conduct instrument flight tests, provided the person being tested is a member of the U.S. Armed Forces;
   (iii) A company check pilot who is authorized to conduct instrument flight tests under part 121, 125, or 135 of this chapter or subpart K of part 91 of this chapter, and provided that both the check pilot and the pilot being tested are employees of that operator or fractional ownership program manager, as applicable;
   (iv) An authorized instructor; or
   (v) A person approved by the Administrator to conduct instrument practical tests.
Checklist for Instrument Proficiency Check

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STEP 2: Ground Review
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STEP 4: Postflight Discussion
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Step 5: Instrument Practice Plan
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- Instrument Proficiency Practice Plan
- Training Plan (if desired)
# Ground Review

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<td>91.171</td>
<td>Equipment check (VOR)</td>
</tr>
<tr>
<td>91.185</td>
<td>IFR two-way radio communications failure</td>
</tr>
<tr>
<td>91.187</td>
<td>Malfunction reports</td>
</tr>
<tr>
<td>91.205</td>
<td>Required instruments and equipment</td>
</tr>
<tr>
<td>91.207</td>
<td>ELT</td>
</tr>
<tr>
<td>91.209</td>
<td>Aircraft lights</td>
</tr>
<tr>
<td>91.213</td>
<td>Inoperative instruments and equipment</td>
</tr>
<tr>
<td>91.411</td>
<td>Altimeter and pitot-static system tests</td>
</tr>
<tr>
<td>91.413</td>
<td>ATC transponder tests</td>
</tr>
</tbody>
</table>
## ENVIRONMENT

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>91.123</td>
<td>ATC Instructions</td>
</tr>
<tr>
<td>91.169</td>
<td>IFR flight plan</td>
</tr>
<tr>
<td>91.173</td>
<td>ATC clearance and flight plan</td>
</tr>
<tr>
<td>91.175</td>
<td>TO and LDG in IFR</td>
</tr>
<tr>
<td>91.177</td>
<td>Minimum IFR altitudes</td>
</tr>
<tr>
<td>91.179</td>
<td>IFR cruising altitudes</td>
</tr>
<tr>
<td>91.181</td>
<td>Course to be flown</td>
</tr>
<tr>
<td>91.183</td>
<td>IFR two-way communications</td>
</tr>
</tbody>
</table>

AIM 1 Navigation aids

AIM 4 Air traffic control

AIM 5 Air traffic procedures

## EXTERNAL PRESSURES

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
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<tbody>
<tr>
<td>91.185</td>
<td>IFR two-way radio communications failure</td>
</tr>
</tbody>
</table>

AIM 6 Emergency procedures

AIM 5-6 National security and interception procedures
# Flight Activities

<table>
<thead>
<tr>
<th>AREA OF OPERATION</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. PREFLIGHT PREPARATION</strong></td>
<td></td>
</tr>
<tr>
<td>A. Weather Information</td>
<td></td>
</tr>
<tr>
<td>B. Cross-Country Flight Planning</td>
<td></td>
</tr>
<tr>
<td><strong>II. PREFLIGHT PROCEDURES</strong></td>
<td></td>
</tr>
<tr>
<td>A. Aircraft Systems Related to IFR Operations</td>
<td></td>
</tr>
<tr>
<td>B. Aircraft Flight Instruments and Navigation Equipment</td>
<td></td>
</tr>
<tr>
<td>C. Instrument Cockpit Check</td>
<td></td>
</tr>
<tr>
<td><strong>III. AIR TRAFFIC CONTROL CLEARANCES AND PROCEDURES</strong></td>
<td></td>
</tr>
<tr>
<td>A. Air Traffic Control Clearances</td>
<td></td>
</tr>
<tr>
<td>B. Compliance with Departure, En Route, and Arrival Procedures and Clearances</td>
<td></td>
</tr>
<tr>
<td>C. Holding Procedures</td>
<td></td>
</tr>
<tr>
<td><strong>IV. FLIGHT BY REFERENCE TO INSTRUMENTS</strong></td>
<td></td>
</tr>
<tr>
<td>A. Basic Instrument Flight Maneuvers</td>
<td></td>
</tr>
<tr>
<td>B. Recovery from Unusual Flight Attitudes</td>
<td></td>
</tr>
<tr>
<td><strong>V. NAVIGATION SYSTEMS</strong></td>
<td></td>
</tr>
<tr>
<td>A. Intercepting/Tracking Navigational Systems and DME Arcs</td>
<td></td>
</tr>
</tbody>
</table>
### VI. INSTRUMENT APPROACH PROCEDURES

<table>
<thead>
<tr>
<th>Date</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Non-precision Approach (NPA)</td>
<td></td>
</tr>
<tr>
<td>B. Precision Approach (PA)</td>
<td></td>
</tr>
<tr>
<td>C. Missed Approach</td>
<td></td>
</tr>
<tr>
<td>D. Circling Approach</td>
<td></td>
</tr>
<tr>
<td>E. Landing from a Straight-in or Circling Approach</td>
<td></td>
</tr>
</tbody>
</table>

### VII. EMERGENCY OPERATIONS

<table>
<thead>
<tr>
<th>Date</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Loss of Communications</td>
<td></td>
</tr>
<tr>
<td>B. One Engine Inoperative During Straight-and-Level Flight and Turns (Multiengine Airplane)</td>
<td></td>
</tr>
<tr>
<td>C. One Engine Inoperative—Instrument Approach (Multiengine Airplane)</td>
<td></td>
</tr>
<tr>
<td>D. Loss of Primary Flight Instrument Indicators</td>
<td></td>
</tr>
</tbody>
</table>

### VIII. POSTFLIGHT PROCEDURES

<table>
<thead>
<tr>
<th>Date</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Checking Instruments and Equipment</td>
<td></td>
</tr>
</tbody>
</table>
Pilot’s Instrument Experience Summary

Pilot’s Name:__________________________ CFI:_______________________
Address:_________________________________________________________
Phone(s):____________________________ e-mail:______________________

Type of Pilot Certificate(s):
Private______ Commercial_____ ATP_______ Flight Instructor_______

Rating(s):
Instrument_____ Multiengine _________

Experience (Pilot):
Total time_________ Last 6 months_______ Avg hours/month_________
Time logged since last IPC_________

Experience (Aircraft):
Aircraft type(s) you fly______________________________________________
________________________________________________________________
Aircraft used most often........................................................................
For this aircraft:
Total time_______ Last 6 months_______ Avg hours/month_______

Experience (Flight environment):
Approximately how many hours have you logged in:
Day VFR_________ Day IFR__________ IMC_________________________
Night VFR________ Night IFR_________ Approaches___________________
Approaches to minimums ________ Approaches in last 6 months_________

Type of Flying (External factors):
What percentage of your flying is for:
Pleasure_________ Business______ Local_______ XC_______

Personal Skills Assessment:
What are your strengths as a pilot?___________________________________
What do you most want to practice/improve?___________________________
What are your aviation goals?_______________________________________
Personal Minimums Worksheet

Developing Personal Minimums

Think of personal minimums as the human factors equivalent of reserve fuel. Personal minimums should provide a solid safety buffer between:

- Skills required for the specific flight, and
- Skills available to you through your training, experience, currency, and proficiency.

Step 1 – Review Weather Minimums

Step 2 – Assess Weather Experience and Personal Comfort Level

Step 3 – Consider Winds and Performance

Step 4 – Assemble Baseline Values

Step 5 – Adjust for Specific Conditions

Step 6 – Stick to the Plan!
Step 1: Review Definitions for VFR & IFR Weather Minimums

<table>
<thead>
<tr>
<th>Category</th>
<th>Ceiling</th>
<th>Visibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>VFR</td>
<td>greater than 3,000 feet AGL</td>
<td>and greater than 5 miles</td>
</tr>
<tr>
<td>Marginal VFR</td>
<td>1,000 to 3,000 feet AGL</td>
<td>and/or 3 to 5 miles</td>
</tr>
<tr>
<td>IFR</td>
<td>500 to below 1,000 feet AGL</td>
<td>and/or 1 mile to less than 3 miles</td>
</tr>
<tr>
<td>LIFR</td>
<td>below 500 feet AGL</td>
<td>and/or less than 1 mile</td>
</tr>
</tbody>
</table>

Step 2(a): Record certification, training, and recent experience.

<table>
<thead>
<tr>
<th>CERTIFICATION LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate level</td>
</tr>
<tr>
<td>(e.g., private, commercial, ATP)</td>
</tr>
<tr>
<td>Ratings</td>
</tr>
<tr>
<td>(e.g., instrument, multiengine)</td>
</tr>
<tr>
<td>Endorsements</td>
</tr>
<tr>
<td>(e.g., complex, high performance, high altitude)</td>
</tr>
</tbody>
</table>
### TRAINING SUMMARY

<table>
<thead>
<tr>
<th>Flight review (e.g., certificate, rating, Wings)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrument Proficiency Check</td>
</tr>
<tr>
<td>Time since checkout in airplane 1</td>
</tr>
<tr>
<td>Time since checkout in airplane 2</td>
</tr>
<tr>
<td>Time since checkout in airplane 3</td>
</tr>
<tr>
<td>Variation in equipment</td>
</tr>
<tr>
<td>(e.g., GPS navigators, autopilot)</td>
</tr>
</tbody>
</table>

### EXPERIENCE

<table>
<thead>
<tr>
<th>Total flying time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years of flying experience</td>
</tr>
</tbody>
</table>

### RECENT EXPERIENCE (last 12 months)

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours in this airplane (or identical model)</td>
</tr>
<tr>
<td>Landings (Normal/Crosswind)</td>
</tr>
<tr>
<td>Night (Hours/Landings)</td>
</tr>
<tr>
<td>Hours flown in Mountainous Terrain/High Density Altitude</td>
</tr>
<tr>
<td>IFR hours</td>
</tr>
<tr>
<td>IMC hours (actual conditions)</td>
</tr>
<tr>
<td>Approaches (actual or simulated)</td>
</tr>
<tr>
<td>Time with specific GPS navigator</td>
</tr>
<tr>
<td>Time with specific autopilot</td>
</tr>
</tbody>
</table>
### Step 2 (b): Enter values for weather experience/ “comfort level.”

<table>
<thead>
<tr>
<th>Experience &amp; “Comfort Level” Assessment Combined VFR &amp; IFR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weather Condition</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>Ceiling</td>
</tr>
<tr>
<td>Day</td>
</tr>
<tr>
<td>Night</td>
</tr>
<tr>
<td>Visibility</td>
</tr>
<tr>
<td>Day</td>
</tr>
<tr>
<td>Night</td>
</tr>
</tbody>
</table>

### Step 3(a): Enter values for experience / comfort in turbulence

<table>
<thead>
<tr>
<th>Experience &amp; “Comfort Level” Assessment Wind &amp; Turbulence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turbulence</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>Surface wind speed</td>
</tr>
<tr>
<td>Surface wind gusts</td>
</tr>
<tr>
<td>Crosswind component</td>
</tr>
</tbody>
</table>
Step 3 (b) Enter values for performance.

<table>
<thead>
<tr>
<th>Experience &amp; “Comfort Level” Assessment Performance Factors</th>
<th>SE</th>
<th>ME</th>
<th>Make/Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shortest runway</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highest terrain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highest density altitude</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Step 4: Assemble and evaluate baseline personal minimums

<table>
<thead>
<tr>
<th>Baseline Personal Minimums</th>
<th>VFR</th>
<th>MVFR</th>
<th>IFR</th>
<th>LIFR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weather Condition</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Ceiling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>daytime</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Night</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Visibility</td>
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<td></td>
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</tr>
<tr>
<td>daytime</td>
<td></td>
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<tr>
<td>Night</td>
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<tr>
<td>Turbulence</td>
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<tr>
<td>SE</td>
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</tr>
<tr>
<td>ME</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Make/Model</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wind Speed</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Surface</td>
<td></td>
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<tr>
<td>Wind Gust</td>
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<tr>
<td>Crosswind</td>
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<td>Component</td>
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<td>Performance</td>
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<td>Shortest runway</td>
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<tr>
<td>Highest terrain</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Highest density altitude</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
### Step 5: Adjust for specific conditions

<table>
<thead>
<tr>
<th></th>
<th>If you are facing:</th>
<th>Adjust baseline personal minimums to:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pilot</strong></td>
<td>Illness, medication, stress, or fatigue; lack of currency (e.g., haven’t flown for several weeks)</td>
<td>Add At least 500 feet to ceiling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Add At least ½ mile to visibility</td>
</tr>
<tr>
<td><strong>Aircraft</strong></td>
<td>An unfamiliar airplane, or an aircraft with unfamiliar avionics/equipment:</td>
<td>Sub At least 500 ft to runway length</td>
</tr>
<tr>
<td><strong>enVironment</strong></td>
<td>Airports and airspace with different terrain or unfamiliar characteristics</td>
<td></td>
</tr>
<tr>
<td><strong>External</strong></td>
<td><em>Must meet</em> deadlines, passenger pressures; etc.</td>
<td>Sub At least 5 knots from winds</td>
</tr>
<tr>
<td><strong>Pressures</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3-P Risk Management Process

Good aeronautical decision-making includes risk management, a process that systematically identifies hazards, assesses the degree of risk, and determines the best course of action. There are many models for risk management, including charts that generate a numerical "score." Although these tools can be useful, numbers-based tools suggest a level of precision that may be misleading.

An alternative method is the Perceive – Process – Perform risk management and aeronautical decision-making model developed by the FAA Aviation Safety Program. There are three basic steps in this model:

**PERCEIVE** hazards
**PROCESS** to evaluate level of risk
**PERFORM** risk management

**PERCEIVE:** The goal is to identify hazards, which are events, objects, or circumstances that could contribute to an undesired event. You need to consider hazards associated with:

- Pilot
- Aircraft
- Environment
- External Pressures.

**PROCESS:** Ask questions to determine what can hurt you. In short, why do you have to **CARE** about these hazards?

- What are the **Consequences**?
- What are the **Alternatives** available to me?
- What is the **Reality** of the situation facing me?
- What kind of **External** pressures may affect my thinking?

**PERFORM:** Change the situation in your favor. Your objective is to make sure the hazard does not hurt **ME** or my passengers, so work to either

- Mitigate the risk involved, or
- Eliminate the risk involved.
Instrument Planning Flow Chart

Determine destination and proposed route of flight
Possible Tools: AOPA RTFP, Aero Planner

Check Big Picture overview
Possible Tools: TWC, SkyVector

ADDS items to review:
- TAFs and METARs (dep, dest, enr)
- Winds & temps aloft
- Radar
- Freezing levels

Evaluate for compliance with personal minimums & aircraft capability:

<table>
<thead>
<tr>
<th></th>
<th>Personal Minimums</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceiling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
If consistent with personal minimums, continue flight planning process

<table>
<thead>
<tr>
<th>Departure</th>
<th>En Route</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escapes/Alternates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reserve Fuel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terrain Avoidance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger Plan</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Call Flight Service or DUATS:

- Request standard briefing
- File IFR flight plan
- Verify information / picture gained from other sources
- Modify plans as necessary
Regional / Seasonal Factors List

Location: ________________

Topograph

☐ Mountains: highest elevation __________________________
☐ Bodies of water: _____________________________________
☐ Other Features: _____________________________________

Seasonal Weather Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Winter</th>
<th>Spring</th>
<th>Summer</th>
<th>Autumn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average temps</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wind direction</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Wind velocity</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>TS activity</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Icing potential</td>
<td></td>
<td></td>
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<tr>
<td>Other</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Most Important “Local Knowledge” Tips

________________________________________________________________________
________________________________________________________________________
Instrument Training and Proficiency Plan

Pilot’s Name: ____________________________ CFI: _________________________
Date: _____________________________ Review Date: __________________

Instrument Training Goals

_______ Certificate Level (Private, Commercial, ATP)
_______ Ratings (Instrument, AMEL, ASES, AMES, etc)
_______ Phase in Pilot Proficiency (Wings) Program
_______ Instructor Qualifications (CFI, CFI-I, MEI, AGI, IGI)

Other: __________________________________________________________________________

Instrument Proficiency Goals

_______ Lower personal minimums to:

- Ceiling
- Visibility
- Winds
- Precision Approach Minimums
- Non-Precision Approach Minimums

_______ Fly IFR / IMC at least:

- Times per month
- Hours per month
- Hours per year
- XC flights per year
- Night hours per month

_______ Make an IFR / IMC XC trip to:

_____________________________

Other: __________________________________________________________________________

Aeronautical Training Plan

_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________

Airlines Training Plan

_______________________________________________________________________________
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_______________________________________________________________________________
Resources

Aviation Digital Data Service (ADDS)
http://adds.aviationweather.noaa.gov/

Beyond the Buttons: Mastering Our Marvelous Flying Machines

Currency and Additional Qualification Requirements for Certificated Pilots
(AC 61-98A)

Flight Service (Lockheed Martin)
http://www.afss.com/

GA Pilot's Guide to Preflight Weather Planning, Weather Self-Briefings, and
Weather Decision-Making
www.faa.gov/pilots/safety/media/ga_weather_decision_making.pdf

Online Resources for CFIs
www.faasafety.gov

Risk Management and System Safety Modules
www.faa.gov/education_research/training/fits/training/flight_instructor/

Runway Safety / Airport Diagrams
http://www.faa.gov/runwaysafety/naco.cfm

SkyVector
www.skyvector.com

Teaching Practical Risk Management
IPC QUIZ
(This is an open book quiz to be completed prior to your arrival for your IPC. You and your instructor will review your answers in your ground training.)

1. (61.57) What are the recency-of-experience requirements to be PIC of a flight under IFR?
   a. A biennial flight review
   b. To carry passengers, ___ takeoffs and landings within the preceding ___ days
   c. Within the preceding ___ calendar months:
      i. At least ___ instrument approaches
      ii. Holding procedures
      iii. Intercepting and tracking courses through the use of navigation systems.

2. (91.3) Who is responsible for determining that the altimeter system and other required inspections have been completed and that they meet the FAR requirements for a particular flight?
   a. Owner
   b. Operator
   c. Pilot in command
   d. An FAA-certified mechanic

3. (91.103) Before beginning any flight under IFR, the pilot in command must become familiar with all available information concerning the flight. In addition the pilot must
   a. List an alternate airport on the flight plan and become familiar with the instrument approaches to that airport.
   b. List an alternate airport on the flight plan and confirm adequate takeoff and landing performance at the destination airport.
   c. Be familiar with the runway lengths at airports of intended use, and the alternates available if the flight cannot be completed.

4. (AIM 8-1-5) A pilot is more subject to spatial disorientation if
   a. Kinesthetic senses are ignored.
   b. Eyes are moved often in the process of cross-checking the flight instruments.
   c. Body signals are used to interpret flight attitude.

5. (AIM 8-1-5) Which procedure is recommended to prevent or overcome spatial disorientation?
   a. Reduce head and eye movements as much as possible.
   b. Rely on kinesthetic sense.
   c. Rely on the indications of the flight instruments.
6. (91.167) What are the minimum fuel requirements in IFR conditions, if the first airport of intended landing is forecast to have 1,500-foot ceiling and 3 visibility at flight-planned ETA? Fuel to fly to the first airport of intended landing,
   a. And fly thereafter for 45 minutes at normal cruising speed.
   b. Fly to the alternate, and fly thereafter for 45 minutes at normal cruising speed.
   c. Fly to the alternate, and fly thereafter for 30 minutes at normal cruising speed.

7. (91.171) When must an operational check on the aircraft VOR equipment be accomplished when used to operate under IFR?
   a. Within the preceding 10 days or 10 hours of flight time.
   b. Within the preceding 30 days or 30 hours of flight time.
   c. Within the preceding 30 days.

8. (91.171) What data must be recorded in the aircraft log by a pilot making a VOR operational check for IFR operations?
   a. VOR name or identification, date of check, amount of bearing error, and signature.
   b. Place of operational check, amount of bearing error, date of check, and signature.
   c. Date of check, VOR name or identification, place of operational check, and amount of bearing error.

9. (91.185) Which procedure should you follow if you experience two-way communications failure while holding at a holding fix with an EFC time? (The holding fix is not the same as the approach fix)
   a. Depart the holding fix to arrive at the approach fix as close as possible to the EFC time.
   b. Depart the holding fix at the EFC time.
   c. Proceed immediately to the approach fix and hold until EFC.

10. (91.185) You enter a holding pattern (at a fix that is not the same as the approach fix) with an EFC time of 1530. At 1520 you experience complete two-way communications failure. Which procedure should you follow to execute that approach to a landing?
    a. Depart the holding fix to arrive at the approach fix as close as possible to the EFC time and complete the approach.
    b. Depart the holding fix at the EFC time, and complete the approach.
    c. Depart the holding fix at the earliest of the flight planned ETA or the EFC time, and complete the approach.

11. (91.187) (True/False) As PIC operating under an IFR flight plan in controlled airspace you are required to report any malfunctions of navigational, approach, or communication equipment to ATC as soon as practical.
12. (91.205) What minimum navigation equipment is required for IFR flight?
   a. VOR/LOC receiver, transponder, and DME.
   b. VOR receiver and, if in ARTSIII environment, a coded transponder equipped for altitude reporting.
   c. Navigation equipment appropriate to the ground facilities to be used.

13. (91.205) Where is DME required under IFR?
   a. At or above 24,000 feet MSL if VOR navigational equipment is required.
   b. In positive control airspace.
   c. Above 18,000 feet MSL.

14. (91.205) An aircraft operating during IFR under 14CFR Part 91 is required to have which of the following?
   a. Radar altimeter
   b. Dual VOR system
   c. Gyroscopic direction indicator

15. (91.207) ELT batteries must be replaced or recharged after one cumulative hour of use or
   a. After three years.
   b. When the shelf life of the battery has expired.
   c. After the manufacturer's recommended replacement date.
   d. When one half of the useful life of the battery has expired.

16. (91.209) Aircraft position lights must be illuminated from
   a. Sunrise to sunset.
   b. Sunset to sunrise.
   c. One hour after sunset to one hour after sunrise.
   d. One hour before sunset to one hour before sunrise.

17. (91.213) (True/False) Instruments and equipment required by an airworthiness directive to be in operable condition may not be included in a Minimum Equipment List (MEL).

18. (91.411) An aircraft altimeter system test and inspection must be accomplished within
   a. 12 calendar months
   b. 18 calendar months
   c. 24 calendar months

19. (91.413) An ATC transponder is not to be used unless it has been tested, inspected and found to comply with regulations within the preceding
   a. 30 days
   b. 12 calendar months
   c. 24 calendar months
20. (91.123) While on an IFR flight, a pilot has an emergency which causes a deviation from an ATC clearance. What action must be taken?
   a. Notify ATC of the deviation as soon as possible
   b. Squawk 7700 for the duration of the emergency
   c. Submit a detailed report to the chief of the ATC facility within 48 hours.

21. (91.123) During an IFR flight in IMC, a distress condition is encountered, (fire, mechanical, or structural failure). The pilot should
   a. Not hesitate to declare an emergency and obtain an amended clearance.
   b. Wait until the situation is immediately perilous before declaring an emergency.
   c. Contact ATC and advise that an urgency condition exists and request priority consideration.

22. (91.169) When are you required to file an alternate?
   a. If from 1 hour before to 1 hour after your planned ETA at the destination airport, the weather is forecast to be below 2000-foot ceilings and less than 3 miles visibility.
   b. If from 1 hour before to 1 hour after your planned ETA at the destination airport, the weather is forecast to be at below 3000-foot ceilings and less than 2 miles visibility.
   c. All IFR flight plans require an alternate to be filed.
   d. When the weather is forecast to be below 3000-foot ceilings.

23. (91.169) What minimums are to be used on arrival at the alternate?
   a. 2000-foot ceilings, 3 miles visibility
   b. If an instrument procedure is published for that airport, the minimums specified in that procedure to be used.
   c. No minimums are required because it is your alternate
   d. 1000-foot ceilings, 3 miles visibility

24. (91.169) What are the alternate minimums that must be forecast at the ETA for an airport that has a precision approach procedure?
   a. 400-foot ceiling and 2 miles visibility
   b. 600-foot ceiling and 2 miles visibility
   c. 800-foot ceiling and 2 miles visibility

25. (91.173) To operate an aircraft under IFR, a flight plan must have been filed and an ATC clearance received prior to
   a. Controlling the aircraft solely by use of instruments
   b. Entering weather conditions in any airspace
   c. Entering controlled airspace
26. (91.173) No person may operate an aircraft in controlled airspace under IFR unless he/she files a flight plan
   a. And receives a clearance by telephone prior to takeoff.
   b. Prior to takeoff and requests the clearance upon arrival on an airway.
   c. And receives a clearance prior to entering controlled airspace.

27. (91.173) When departing from an airport located outside controlled airspace during IMC, you must file an IFR flight plan and receive a clearance before
   a. Takeoff
   b. Entering IFR conditions
   c. Entering Class E airspace

28. (91.175) What are the standard takeoff minimums for takeoffs under IFR for aircraft having two engines or less?
   a. 2 statute miles visibility
   b. 3 statute miles visibility
   c. 1 statute mile visibility
   d. ½ mile visibility

29. (91.177) Except when necessary for takeoff or landing or unless otherwise authorized by the Administrator, the minimum altitude for IFR flight is
   a. 3,000 feet over all terrain.
   b. 3,000 feet over designated mountainous terrain; 2,000 feet over terrain elsewhere.
   c. 2,000 feet above the highest obstacle over designated mountainous terrain; 1000 feet above the highest obstacle over terrain elsewhere.

30. (91.179) While operating in uncontrolled airspace below 18,000 feet under an IFR flight plan in level cruising flight on a 090 magnetic course, you shall maintain
   a. An odd thousand foot MSL altitude (3,000, 5,000, or 7,000)
   b. An even thousand foot MSL altitude (4,000, 6,000, or 8,000)
   c. An odd thousand foot MSL altitude plus 500 (3,500, 5,500, 7,500)
   d. An even thousand foot MSL altitude plus 500 (4,500, 6,500, 8,500)

31. (91.181) (True/False) Regarding courses to be flown when operating IFR, you are expected to fly a direct route between navigational aids or fixes defining the route.

32. (91.183) The pilot in command of an aircraft on an IFR flight plan in controlled airspace is required to report
   a. Entering VFR conditions.
   b. Changing heading onto a new airway.
   c. Any unforecasted weather conditions encountered.
33. (AIM 1) A particular VOR station is undergoing routine maintenance. This evident by 
   a. Removal of navigation feature 
   b. Broadcasting a maintenance alert signal on the voice channel. 
   c. Removal of the identification feature. 

34. (AIM 1) Full scale deviation of a CDI occurs when the course deviation bar or needle 
   a. Deflects from left side of the scale to the right side of the scale. 
   b. Deflects from the center of the scale to either far side of the scale. 
   c. Deflects from half scale left to half scale right. 

35. (AIM 1) During IFR operation using an approved GPS system for navigation, 
   a. No other navigation system is required. 
   b. Active monitoring of an alternate navigation system is always required. 
   c. The aircraft must have an approved and operational alternate navigation system 
      appropriate for the route. 

36. (AIM 4-4-6) What response is expected when ATC issues an IFR clearance to pilots of 
   airborne aircraft? 
   a. Read back the entire clearance as required by the regulation. 
   b. Read back those parts containing altitude assignments or vectors and any part 
      requiring verification. 
   c. Read-back should be unsolicited and spontaneous to confirm that the pilot 
      understands all instructions. 

37. (AIM 4-3-21) If, during VFR practice instrument approach, Radar Approach Control 
   assigns an altitude or heading that will cause you to enter the clouds, what action should 
   be taken? 
   a. Enter the clouds, since ATC authorization for practice approaches is considered 
      an IFR clearance. 
   b. Avoid the clouds and inform ATC that altitude/heading will not permit VFR. 
   c. Abandon the approach. 

38. (AIM 4-1-19) When should your transponder be on Mode C while on an IFR flight? 
   a. Only when ATC requests Mode C. 
   b. At all times if the equipment has been calibrated, unless requested otherwise by 
      ATC. 
   c. When passing 12,500 feet MSL. 

39. (AIM 5-1-3) What is the purpose of FDC NOTAMs? 
   a. To provide the latest information on the status of navigational facilities to all FSS 
      facilities for scheduled broadcasts. 
   b. To issue notices for all airports and navigation facilities in the shortest time 
      possible. 
   c. To advise of changes in flight data which affect instrument approach procedures 
      (IAP), aeronautical charts, and flight restrictions prior to normal publication.
40. (AIM 5-1-14) When may a pilot cancel the IFR flight plan prior to completing the flight?
   a. Any time.
   b. Only if an emergency occurs.
   c. Only in VFR conditions when not in Class A airspace.

41. (AIM 5-1-14) How is your flight plan closed when your destination airport has IFR conditions and there is no control tower or flight service station (FSS) on the field?
   a. The ARTCC controller will close your flight plan when you report the runway in sight.
   b. You may close your flight plan any time after starting the approach by contacting any FSS or ATC facility.
   c. Upon landing, you must close your flight plan by radio or by telephone to any FSS or ATC facility.

42. (AIM 6-3-2) A pilot in distress or lost, should consider taking which of the following immediate actions?
   a. Climb, if possible, for improved communications, and better radar and finding detection.
   b. Maintain altitude, and attempt to regain communications as quickly as possible.
   c. Descend, if possible for improved communications.

43. (AIM 6-4-1) While operating under an IFR flight plan in IMC conditions, you experience a two-way radio communications failure. What route should you fly?
   a. By the route assigned in the last ATC clearance received
   b. Divert immediately and land as soon as possible at the nearest airport
   c. Immediately enter a hold and at your present position until two-way radio communications are once again established.

44. (AIM 5-6-1) (True/False) Aircraft operating within an ADIZ (Air Defense Identification Zone) are required have an IFR or DVFR flight plan filed with an appropriate aeronautical facility.

45. (AIM 5-6-1) If intercepted by the U.S. military and flares are dispensed in the area of the aircraft, you should
   a. Continue onto flight planned destination without delay.
   b. Contact ATC immediately on the local frequency or on VHF guard 121.5 and follow the intercept’s visual ICAO signals.
   c. Follow the intercept’s flight path, no communications are required.