

SAMPLE INSTRUMENT RATING AMEL PRACTICAL TEST SCENARIO

Scenario:

The purpose of this flight is to fly to a meeting where the PT is going to receive an award. The PT is a newly instrument rated pilot and wishes to practice IFR procedures while on this flight. A business partner of the PT is going along to attend the same meeting. (The intended destination should be such that the flight time would be approximately one and a half hours for flight planning purposes. The actual route of flight will be diverted in the course of the scenario).

This is the first flight in a small airplane for the business partner. His only experience flying has been on commercial airlines.

The destination airport has a TFR issued because of a visit by the Vice-President of the United States, but the TFR is supposed to be lifted approximately 30 minutes after the planned departure time.

The plan is to remain overnight so each person is bringing a small overnight bag. Hotel reservations and a car rental have been secured and deposits prepaid.

Event Triggers:

Event triggers are those actions that the inspector/examiner will take to cause the pilot to take some action that was not part of the original flight plan. Events that will trigger a diversion, if required by the PTS, should be realistic and not just limited to deteriorating weather. These triggers could be, but are not limited to, a system problem with the airplane, a passenger becoming ill, a loose fuel cap, or an approach aid becoming unavailable. Event triggers could also be something like a runway suddenly closing, requiring an unplanned go-around, failure of a nav-aid on an approach, or conflicting traffic in a traffic pattern.

Event triggers should be realistic and create a situation where the PT will have to demonstrate competency in SRM to deal with the changing situation.

Specific event triggers are listed in the ground and/or flight portion of the plan of action.

Single Pilot Resource Management Behaviors:

During the ground and flight portions of the practical test, the PT should exhibit the following behaviors as appropriate to the scenario.

AERONAUTICAL DECISION MAKING

References: FAA-H-8083-25, AC 60-22, FAA-H-8083-15A

Objective: To determine the applicant exhibits sound aeronautical decision making during the planning and execution of the planned flight. The applicant should:

1. Use a sound decision making process, such as the DECIDE model, 3P model, or similar process when making critical decisions that will have an effect on the outcome of the flight. The applicant should be able to explain the factors and alternative courses of action that were considered while making the decision.
2. Recognize and explain any hazardous attitudes that may have influenced any decision.
3. Decide and execute an appropriate course of action to properly handle any situation that arises that may cause a change in the original flight plan in such a way that leads to a safe and successful conclusion of the flight.
4. Explain how the elements of Risk Management, CFIT Awareness, overall Situational Awareness, use of Automation, and Task Management influenced the decisions made and the resulting course of action.

RISK MANAGEMENT

References: FAA-H-8083-25 (Michele's book here)

Objective: To determine the applicant can utilize risk management tools and models to assess the potential risk associated with the planned flight during preflight planning and while in flight. The applicant should:

1. Explain the four fundamental risk elements associated with the flight being conducted in the given scenario and how each one was assessed.
2. Use an tool, such as the PAVE checklist to help assess the four risk elements
3. Use a personal checklist, such as the "I'MSAFE" checklist, to determine personal risks.
4. Use weather reports and forecasts to determine weather risks associated with the flight.
5. Explain how to recognize risks and how mitigate those risks throughout the flight.

6. Use the “5-P” model to assess the risks associated with each of the 5 factors.

TASK MANAGEMENT

References: FAA-H-8083-15A

Objective: To determine the applicant can prioritize the various tasks associated with the planning and execution of the flight. The applicant should:

1. Explain how to prioritize tasks in such a way to minimize distractions from flying the airplane.
2. Complete all tasks in a timely manner considering the phase of flight without causing a distraction from flying.
3. Execute all checklists and procedures in a manner that does not increase workload at critical times, such as intercepting the final approach course.

SITUATIONAL AWARENESS

References: FAA-H-8083-25, References: FAA-H-8083-15A

Objective: To determine the applicant can maintain situational awareness during all phases of the flight. The applicant should:

1. Explain the concept of situational awareness and associated factors.
2. Explain the dangers associated with becoming fixated on a particular problem to the exclusion of other aspects of the flight.
3. State the current situation at anytime during the flight in such a way that displays an accurate assessment of the current and future status of the flight, including weather, terrain, traffic, ATC situation, fuel status, and airplane status.
4. Uses the navigation displays, traffic displays, terrain displays, weather displays and other features of the airplane to maintain a complete and accurate awareness of the current situation and any reasonably anticipated changes that may occur.

CONTROLLED FLIGHT INTO TERRAIN AWARENESS

Reference: Controlled Flight Into Terrain Training Aid:

website:

www.faa.gov/education_research/training/media/cfit/volume1/titlepg.pdf

Objective: To determine the applicant can accurately assess risks associated with terrain and obstacles, maintain accurate awareness of terrain and obstacles, and can use appropriate techniques and procedures to avoid controlled flight into terrain or obstacles by using all resources available. The applicant should:

1. Use current charts and procedures during the planning of the flight to insure the intended flight path avoids terrain and obstacles.
2. Be aware of potential terrain and obstacle hazards along the intended route.
3. Explain the terrain display, TAWS, and/or GPWS as installed in the airplane.
4. Use the terrain display, TAWS, and/or GPWS of the navigation displays as appropriate to maintain awareness and to avoid terrain and obstacles.
5. Plan departures and arrivals to avoid terrain and obstacles.
6. Alter flight as necessary to avoid terrain.
7. Plan any course diversion, for whatever reason, in such a way to insure proper terrain and obstruction clearance to the new destination.
8. Explain and understand airplane performance limitations associated with CFIT accidents.

AUTOMATION MANAGEMENT

References: FAA-H-8083-15A

Objective: To determine the applicant can effectively use the automation features of the airplane, including autopilot and flight management systems, in such a way to manage workload and can remain aware of the current and anticipated modes and status of the automation. The applicant should:

1. Explain how to recognize the current mode of operation of the autopilot/FMS.
2. Explain how to recognize anticipated and unanticipated mode or status changes of the autopilot/FMS.
3. State at any time during the flight the current mode or status and what the next anticipated mode or status will be.
4. Use the autopilot/FMS to reduce workload as appropriate for the phase of flight, during emergency or abnormal operations.

5. Recognize unanticipated mode changes in a timely manner and promptly return the automation to the correct mode.

Ground Portion of the Practical Test:

During the ground portion of this evaluation, the questions typically asked during instrument rating airplane test pilot should be used but in the context of the scenario to the extent possible.

This scenario has several elements embedded in it that are designed to allow for testing in several areas. This are:

- Pressure to complete the trip because of the award being given.
- A TFR that is supposed to be lifted before the arrival time.
- A passenger who has never flown in a light airplane before.
- Hotel reservations and car rentals that have been secured and prepaid.

Event Triggers

- The passenger declares he/she is somewhat nervous about the flight. Assess the PT's ability to assess the risks associated with a nervous passenger in instrument flight conditions.
- During a review of the aircraft records, it is noted that one a couple of recent flights, autopilot was written up as being unreliable. The maintenance personnel who checked the system could not duplicate the problem and all maintenance checks show the system is operational. This will allow for the evaluation of potential changes to automation management and task management during the flight. The PT should assess the risks associated with the possibility of the autopilot becoming inoperative during the flight.

Flight Portion of the Practical Test:

During the preflight, start, taxi and run-up, allow the PT to perform as they normally would evaluate the appropriate Areas of Operation and Tasks as you normally would but in the context of the scenario.

Allow the PT to conduct the flight according to the flight plan. In most cases, this will be using the programmed GPS route and using the autopilot as appropriate.

Event Triggers

- Approximately 20 minutes after departure, simulate a message from ATC that the TFR at the destination airport will be in effect approximately 30 minutes longer than anticipated and instruct the PT as ATC would to the nearest fix where holding can be accomplished and give an EFC of 30 minutes after entering holding. Evaluate the use of automation management, task management, aeronautical decision making, situational awareness and CFIT awareness during this reroute and the reprogramming of the GPS or other navigation equipment.
- After the PT has entered the holding pattern, simulate ATC informing the pilot that the TFR has been extended for another 3 hours because of an unanticipated change in the Vice-President's departure. Simulate ATC asking the PT if they would like to continue holding for that time or would he/she prefer to execute an approach at another airport and take the delay on the ground. (This is setting up the PT to perform one of the required approaches.) Allow the PT to select the approach to be performed. The examiner should let the PT choose which airport he/she will divert to. A well planned scenario will limit the PT's choices to airports that have an approach appropriate to the PTS requirements. If the PT chooses an airport that that would not allow the PT to demonstrate all required approaches, the examiner can (while playing ATC) come up with a reason for that airport to be unavailable.
 - If the PT elects to perform a non-precision approach, simulate an autopilot failure thereby requiring the PT to hand fly the approach.
- During the approach, simulate a weather report from the tower or a preceding airplane (in the case of an uncontrolled airport or from AWOS) that the weather is below minimums and the preceding airplane executed a missed approach.
- Sometime during the missed approach procedure, fail the primary flight instruments (in a glass cockpit a PDF failure or in a traditional cockpit, failure of the vacuum pump), necessitating the next approach to be on the back up instruments. During this approach, it is expected the PT will use the autopilot, if available (the situation causing the problem rectified itself and is now working properly if it was simulated to be failed during the first approach.)

NOTE: Some glass cockpit avionics systems, when actually failed, require significant time on the ground to re-initialize for subsequent use. Other systems can re-initialize in-flight. Be sure to plan for this when actually failing a primary

flight display. If it becomes necessary to land and wait for the system to re-initialize, be sure to do so in a place where other traffic will not be blocked or delayed from taxiing or departing.

- Sometime during the approach, simulate ATC or another airplane report an obstruction on the straight-in runway necessitating a circling approach. If the actual winds or runways at the airport dictate a circling approach, there is no need to simulate this. This approach can end in an actual landing (necessary if required to re-initialize the PFD) or can result in another missed approach.

NOTE: After this approach is terminated either with a missed approach or a landing, the scenario should be change such that the PT returns to the departure airport to perform the final approach. This can be done by simulating a message from ATC that the original airport will be closed for an indefinite period because of the TFR.

The scenario will continue by returning to the original departure airport. At some point during the return to the airport, suspend the scenario to perform the unusual attitude recovery task, and then resume the scenario through the completion of the final approach and postflight procedures. At this point the scenario is concluded.