

Flight Instructor - Instrument Airplane

Lost Communications, Approaches with Loss of Primary Flight Instrument Indicators, and Emergency Procedures

Scenario:

You are going to fly to a nearby airport to deliver a package to a branch office of his business. This package is critical to a deal being negotiated. You decide to take your student along with you to get some instrument flight time in actual conditions. After delivering the package, you will be returning to the departure airport. (The instructor will play the role of the student being trained.)

The weather for this flight is such as an instrument flight plan will have to be filed and an instrument approach will be necessary at the destination airport. Because of the weather your student should select an alternate with a precision approach should it become required.

When reviewing the aircraft discrepancy records for the airplane, you notice there has been a previous write-up about a faulty attitude indicator (or primary flight display). The mechanic who checked out the airplane could not duplicate the problem and noted that all systems checked ok on the ground. It has flown three flights since this happened with no discrepancy noted.

Before departing you test to make sure all the avionics and instruments are working prior to takeoff. At this time, everything is working fine and you elect to proceed.

Lesson Objectives:

The purpose of this lesson is for the student instructor to learn to effectively perform and analyze lost communication procedures, instrument approach procedures without the use of primary flight displays, and emergency operations. If a multiengine airplane is being used, to also effectively perform and analyze engine out operations and approaches.

The student instructor will also be able to assess the risks associated with this flight and be able to explain how to manage those risks to insure a safe training flight is conducted.

Pre-Briefing:

The student instructor will review the desired outcomes, discuss the scenario for the flight, and discuss the key elements of each maneuver to be flown. The student instructor will develop a maneuver lesson that describes and utilizes

the scenario prescribed for this lesson. During the preflight briefing, the instructor will play the role of the student being trained and respond accordingly.

The student instructor should be able to explain the risks associated with simulated instrument flight using view limiting devices and the risks associated with partial panel instrument flying.

If a multiengine airplane is being used, the student instructor shall review the procedures used for simulating an engine failure, the procedures to be used in the event of an actual engine failure, and the risks associated with simulated engine failures during training.

Completion Standards:

This lesson will be complete when the student instructor can perform, teach and analyze each maneuver to the level shown on the desired outcome table and within the tolerances specified by the Flight Instructor Instrument Practical Test Standard for Airplane.

De-Briefing:

The debriefing will be lead by the student instructor using the Learner-Centered Grading method. The student instructor will critique the instructor about the instructor's "simulated student" performance. Then the student instructor will critique his/her own performance using the Desired Outcomes Grading sheet as a guide. The instructor and student instructor will discuss any discrepancies in their respective evaluations.

Notes to the Instructor:

In this scenario, you should play the role of the student during the preflight briefing and during the flight. The flight should simulate an IFR flight to a nearby airport that has an instrument approach. During the first part of the flight, the student instructor should simulate a loss of communications and assess your knowledge of how to continue the flight in accordance with lost communication procedures. After determining if you know how to proceed and when to begin your instrument approach, you and the student instructor can assume communications has been regained.

Next, the student instructor should simulate a failure of the primary flight instruments and you should fly the flight as a student. This failure can be preceded by an indication of a system failure that would cause the loss of the primary flight instruments. Fly an instrument approach without the primary flight instruments to a full stop landing. After landing, have the student instructor analyze your performance and instruct you on corrective actions that you need to take to improve your performance.

After the debriefing, have the student instructor take the controls and depart the airport for the return trip.

If the flight is being conducted in a single-engine airplane, have the student instructor demonstrate how to simulate the loss of the primary flight instruments and perform an instrument approach with those instruments.

If the flight is being conducted in a multiengine airplane, have the student instructor demonstrate the proper way to simulate an engine failure and teach while demonstrating flying with an engine inoperative including an instrument approach. It doesn't matter whether you fly a precision or non-precision approach. The approach should result in a landing.

After the landing, the student instructor should takeoff and demonstrate flying without the primary flight displays. The student instructor should then demonstrate an instrument approach without the use of the primary flight instruments.

Your decision to actually wear the view limiting device while playing the role of the student should be based on the actual flight environment and traffic situation. Do not compromise your duties as PIC or safety while playing the student role.

Be sure of the safety aspects of this flight. It is recommended that this flight be conducted in visual meteorological conditions. Care must be taken to provide realistic simulations of the instrument failures that can occur with a particular PFD/MFD system. Some systems allow for reversionary modes to be displayed. Others will not.

Be careful of the requirements needed to re-initialize a system once it has been failed. Always follow the manufacturer's recommendations regarding simulating instrument failures if they are available. Improperly failing some systems can cause damage.