

Instrument Airplane Single-Engine

Basic Attitude Instruments

Slow Flight, Stalls, Recovery from Unusual Flight Attitudes

Scenario:

You have just finished your private pilot certificate and decided to purchase a new airplane. You are not sure about whether or not you should buy a newer one with a “glass panel” or an older one with the analog “round dials.” You have asked your instructor to accompany you on a rental flight to check out flying instruments in a “glass panel” airplane. After this flight, you intend to do the same in an airplane with “round dials”.

Because you have not yet been exposed to instrument approaches and other procedures, you decide to concentrate on maneuvers with which you are already familiar. You figure that by doing this, you will get the best “feel” for which type of airplane to buy.

You will accomplish this flight by flying out to a nearby airport land and then return, with you flying “under the hood” while going each way.

Lesson Objectives:

This training scenario will introduce the PT to the preflight preparation and procedures associated with local IFR flight activities and acquaint them with the aircraft and equipment that they will be training. During the flight the instructor will help develop the PT’s scan and instrument interpretation skills as well as familiarize the student with the systems and instruments associated with IFR flight. Allow plenty of time for the PT to review basic attitude instrument flying. During the navigation portion of the flight, have the PT demonstrate constant rate/airspeed climbs and descents as well as turns to headings and other instrument flight procedures. Slow flight and stalls will be practiced so the PT has the opportunity to perform those maneuvers solely by reference to instruments.

Pre-Briefing:

Discuss the methods of flying by instruments, the control-performance method and the concept of primary and supporting instruments. Discuss the risks associated with simulated instrument training and the use of a view-limiting device. Discuss the procedures and techniques used with each maneuver or procedure.

Completion Standards:

This lesson will be complete when the student can demonstrate the maneuvers and procedures listed below to the performance level indicated and within the standards listed in the Instrument Rating Practical Test Standard for Airplane.

IR-ASEL: Basic Attitude Instruments Desired Outcome Grade Sheet			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice/Decide
Scenario Activities	Task	Desired Performance							
Preflight Preparation	Weather Information								
	Flight Planning								
	SRM								
Preflight Procedures	Aircraft Systems Related to IFR Operations								
	Aircraft Flight Instruments and Navigation Equipment								
	Instrument Cockpit Check								
	SRM								
Air Traffic Control Clearances and Procedures	Air Traffic Control Clearances								
	Compliance with Departure, En Route, and Arrival Procedures and Clearances								
	SRM								
Flight by Reference to Instruments	Basic Instrument Flight Maneuvers								
	Constant Rate Climbs and Descents								
	Constant Airspeed Climbs and Descents								
	Turns to Headings								
	Slow Flight								
	Stalls								
	Recovery from Unusual Flight Attitudes								
SRM									
Post-flight Procedures	Checking Instruments and Equipment								
	SRM								

De-Briefing:

Solicit a self-critique from the student about their personal performance by having them grade their performance based on the desired outcomes for the flight. Compare the student's self evaluation to your own and discuss why you either agreed or disagreed with the student's assessment. Use this information to direct your analysis of their flight. Additionally, discuss the role SRM played in the training activity and why it is critical to always consider how a flight or a situation could have been better managed to achieve the optimal outcome. Provide guidance on what the tasks and objectives will be for the next training activity and how they should prepare for it.

Notes to the Instructor:

This flight should be done in VMC conditions.

You will assist the PT conduct the instrument cockpit check and demonstrate how each navigation system and electronic flight instrument display's operational status is checked. Allow the student to handle all ATC communications, including IFR clearances, and provide assistance when necessary.

You may need to demonstrate the correct method or procedure for performing each maneuver and which instrument should be used to control the airplane. The PT can then perform each maneuver or procedure.

During the navigation portion of the flight, have the PT demonstrate constant rate/airspeed climbs and descents as well as turns to headings and other instrument flight procedures.

Discuss the control and performance method and the primary and supporting method and explain how each technique is used during basic attitude instrument flying.

During stalls and slow flight discuss spin awareness and the importance of coordinated aircraft control.

When demonstrating and performing unusual attitude recoveries, try to use realistic methods of creating the unusual attitude. One method is to have the PT try to fly some turns and climbs while reading a chart, or have them try to retrieve something from the back seat while trying to fly the airplane. One method is to have them put their head down and close their eyes while performing turns per your instructions.