

## **Flight Instructor Airplane Multiengine**

### **Ground Reference Maneuvers, Short-Field Takeoffs and Landings**

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#### **Scenario:**

You are conducting a training flight with a commercial pilot working on a multiengine rating. Your “student”, who is also a real estate agent, wants to survey property out in the country about 20 miles from the airport. Your mission is to fly out, survey the property using various ground reference maneuvers, and then return to practice short-field (maximum performance) takeoffs and landings.

#### **Lesson Objectives:**

The purpose of this lesson is for the student instructor to learn to effectively perform and analyze the performance elements involved in maneuvers and procedures appropriate for ground reference maneuvers and short-field takeoffs and landings in a multiengine airplane.

#### **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 a new student learning how to fly ground reference maneuvers and while doing takeoffs and landings on a short runway in a multiengine airplane. Discuss how the short runway will be simulated. Discuss how takeoff and landing distance calculations are especially important when doing maximum performance takeoffs and landings in multiengine aircraft. Be sure to review the accelerate-stop and accelerate-go (if appropriate) for the actual conditions for the flight as well as for the simulated runway.

#### **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 Practical Test Standard for Airplane, Multiengine.

FI-ASE-Ground Reference Maneuvers, Short-Field Takeoff and Landings <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Preflight Lesson on a Maneuver to be Performed in Flight.	Maneuver Lesson								
	SRM								
Preflight Procedures	Preflight Inspection								
	Engine Starting								
	Taxiing								
	Before Takeoff Check								
	SRM								
Airport Operations	Radio Communications and ATC Light Signals								
	Traffic Patterns								
	Airport, Runway, and Taxiway Signs, Markings, and Lighting								
	SRM								
Takeoffs and Departure	Short-Field Takeoff and Maximum Performance Climb								
	Airport Departure Procedures								
	SRM								
Ground Reference Maneuvers	Turns Around a Point								
	S-Turns Across a Road								
	Rectangular Course								
	SRM								
Arrival and Landings	Short-Field Approach and Landing								
	Go-Around/Rejected Landing								
	SRM								
Post Flight Procedures	Postflight Procedures								
	SRM								

**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:**

The student instructor is learning how to prepare and to present effective scenario-based instruction. The student instructor may not have received scenario-based instruction and may need to review the information provided on the FAA/FITS website to gain a full understanding of the instructional process and its value.

The student instructor should develop a lesson plan that incorporates this scenario and conduct the flight in accordance with that plan. You should review this lesson plan during the preflight briefing and make any suggestions for improvement at that time.

During the preflight briefing, insure the student instructor can effectively present the elements associated with ground reference maneuvers while you play the role of the "student."

When departing on the flight, the student instructor should demonstrate a maximum performance takeoff and climb. While enroute to the area where the fields to be photographed are located, the student instructor should demonstrate how wind affects the ground track by following a road or other straight line. Upon reaching the fields, the student instructor should demonstrate each of the ground reference maneuvers. Then the student instructor should ask you, in the role of the "student" to perform each of the maneuvers while analyzing and critiquing your performance.

If the airport you are going to practice the takeoffs and landings does not have an actual short runway, denote a certain part of the actual runway and simulate a short runway. Be sure the actual runway length is such that there is an adequate safety margin. While doing the short field takeoff and landing practice, be sure to emphasize the need for a proper takeoff briefing that adequately addresses the accelerate-stop and accelerate-go distances in comparison with the simulated short runway as well as the actual runway. Discuss the role each will play in an actual emergency.