

# LESSON PLAN

## Introduction (3 minutes)

**ATTENTION:** Relate aircraft accident in which a multi-engine airplane ran off the end of the runway. This could have been avoided by correctly computing the landing distance. Relate similar personal experience of the same type of mishap.

**MOTIVATION:** Tell students how landing distance can affect them (any aircraft, plus future application).

**OVERVIEW:** Explain what will be learned. Explain how the lesson will proceed. Define landing distance and explain the normal landing distance chart. Then, demonstrate how to solve for landing distance. The students will practice the procedure: at least once with supervision and at least once with as little help as possible. Next, the students will be evaluated according to the standards. Finally, the lesson will conclude with questions and answers, followed by a brief summary.

## Body (29 minutes)

**EXPLANATION DEMONSTRATION:**  
**(8 minutes)** Define landing distance. Explain the normal landing distance chart to include the scale and interpolation. Ensure students can see demonstration and encourage questions. Demonstrate the procedure using °C with a headwind and °F with a tailwind. Show the normal landing distance chart with given data in the following order:

1. temperature
2. pressure altitude
3. gross weight
4. headwind-tailwind component
5. read ground roll distance from graph

**PERFORMANCE SUPERVISION:**  
**(15 minutes)** Review standards. Hand out chart and practice problems. Remind students to use a pencil, to make small tick marks, and to work as accurately as possible. Explain that they should follow the procedure on the chart to work the practice problems. Encourage students to ask questions. Check progress of each student continually so they develop skill proficiency within acceptable standards. Reteach any area(s) of difficulty to the class as they go along.

**EVALUATION:**  
**(6 minutes)** Review procedure again from the chart. Reemphasize standards of acceptable performance including time available. Prepare area for evaluation by removing the task step chart and practice problem sheets, and by handing out the evaluation problems. Ask students to work the three problems according to conditions and standards specified. Terminate evaluation after 6 minutes. Evaluate each student's performance and tactfully reveal results. Record results for use in reteaching any area(s) of difficulty in the summary.

## Conclusion (3 minutes)

**SUMMARY:** Review lessons with emphasis on any weak area(s).

**REMOTIVATION:** Remind students that landing distance will be an important consideration in any aircraft they fly.

**CLOSURE:** Advise students that this lesson will be used as a starting point for the next lesson. Assign study materials for the next lesson.

## Flight 6

Student: Judy Smith

### DUAL-LOCAL

(7 to 10 knot crosswind conditions required)

#### SEQUENCE:

1. Preflight Orientation
2. Flight
3. Postflight Evaluation

#### LESSON OBJECTIVE:

During the lesson, the student will review crosswind landing techniques in actual crosswind conditions and attempt to increase understanding and proficiency during their execution. The principle of a stabilized landing approach will be emphasized.

#### LESSON REVIEW:

1. Slips
2. Crosswind Landings

#### COMPLETION STANDARDS:

The student will demonstrate an understanding of how the slip is used to perform crosswind landings. In addition, the student will demonstrate safe crosswind landings in light crosswind conditions.

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NOTES: Emphasize that the runway, airplane path, and longitudinal axis of airplane must be aligned at touchdown. Have the student establish a slip early on the final approach rather than crabbing and establishing slip just prior to touchdown. This should allow the student to concentrate on keeping the upwind wing low while maintaining runway alignment during the flare.

In this example, the lesson plan is specifically intended to help a student who is having difficulty with crosswind approaches and landings.

# GROUND LESSON 8 — PCATD

## OBJECTIVE

- Review of VOR concepts, intercepts, and tracks.

## EMPHASIS

- Situational awareness; requires pilot constantly asking: Where am I? Where am I going? What am I going to do next?
- VOR utilization

## SET-UP

- Choose an unfamiliar environment in which to fly (from the database map).
- Set airplane location off of a line between 2 NAVAID(s) about 40 miles apart (save as file for future use); configuration can be cruise flight or normal maneuvering flight regime.
- Utilize cockpit instrument check to set frequencies.
- Review terminology: bearing vs. radial, tracking inbound vs. outbound.

## EXERCISES and MANEUVERS

- Determine position by orientation of TO/FROM and CDI centering; have student identify position on chart (paper) before looking at map screen, verify on map screen; discuss errors.
- Re-position airplane on the map screen, determine and note changes in CDI centering.
- Fly direct to selected NAVAID(s).
- Intercept a dictated radial:
  - Tune/identify NAVAID(s).
  - Determine location with respect to bearing by turning to the heading of course dictated; note on which side of airplane is desired course.
  - Determine intercept angle and turn to intercept heading.
  - Demonstrate bracketing techniques.

## COMPLETION STANDARDS

- Correctly determine location and orientation TO/FROM NAVAID(s).
- Correctly determine appropriate intercept angle and heading.
- Recognize that the ability to track is heavily dependent on accurate maintenance of heading.
- Ability to visualize position.

This example lesson plan may be used for ground training in a personal computer-based aviation training device (PCATD) or a flight training device (FTD).

## OBJECTIVE

- To familiarize the student with the stall warnings and handling characteristics of the airplane as it approaches a stall. To develop the student's skill in recognition and recovery from stalls.

## CONTENT

- Configuration of airplane for power-on and power-off stalls.
- Observation of airplane attitude, stall warnings, and handling characteristics as it approaches a stall.
- Control of airplane attitude, altitude, and heading.
- Initiation of stall recovery procedures.

## SCHEDULE

- Preflight Discussion :10
- Instructor Demonstrations :25
- Student Practice :45
- Postflight Critique :10

## EQUIPMENT

- Chalkboard or notebook for preflight discussion.

## INSTRUCTOR'S ACTIONS

- Preflight — Discuss lesson objective.
- Inflight — Demonstrate elements. Demonstrate power-on and power-off stalls and recovery procedures. Coach student practice.
- Postflight — Critique student performance and assign study material.

## STUDENT'S ACTIONS

- Preflight — Discuss lesson objective and resolve questions.
- Inflight — Review previous maneuvers including slow flight. Perform each new maneuver as directed.
- Postflight — Ask pertinent questions.

## COMPLETION STANDARDS

- Student should demonstrate competency in controlling the airplane at airspeeds approaching a stall. Student should recognize and take prompt corrective action to recover from power-on and power-off stalls.

This is a typical lesson plan for flight training which emphasizes stall recognition and recovery procedures.

# MULTIENGINE TRANSITION—LESSON THREE

**OBJECTIVE:** To complete the Baron systems instruction, review procedures for abnormal situations, including systems failures, and further review multi-engine aerodynamics and concepts. In addition, complete IFR proficiency in the ground trainer, and develop the pilot's skill and comfort operating the Baron in a variety of situations.

**ELEMENTS:**

- ground instruction
  - systems
    - electrical
    - landing gear
  - procedures
    - systems failures
    - other abnormal and emergency checklists
  - multi-engine considerations / aerodynamics
    - zero sideslip
    - drag effects
- flight training device or flight simulator
  - any further training needed on IFR skills
  - utilize to practice engine failure after takeoff and single-engine go-around procedures
- flight
  - engine failure on ground
  - $V_{MC}$  demo
  - drag demo
  - engine failure in cruise, descent
  - systems failures including manual gear extension
  - IFR procedures / single-engine approaches

**COMPLETION STANDARDS:** The lesson is complete when the student demonstrates understanding of all Baron systems and emergency procedures, and demonstrates a level of proficiency, as judged by the instructor, to cease training in the instrument ground trainer.

**FURTHER STUDY:** Baron POH (Chapter 3, Chapter 7)

This is a specialized flight training lesson plan for multi-engine transition.

# LESSON PLAN

## AVIATION MAINTENANCE TRAINING

**INSTRUCTOR:** William Brown

**METHOD OF INSTRUCTION:** Lecture, Audio Visuals, and Demonstration

**TITLE:** Flight line, Hangar, and Shop Safety

**OBJECTIVE No 1:** Recognize and neutralize or avoid (as appropriate) safety hazards that may be found in flight line, hangar, and maintenance shop areas.

**OBJECTIVE No 2:** Consistently apply safety practices on forming various aircraft maintenance functions.

### **MATERIALS YOU PLAN TO USE:**

**Visuals:** Videos, overheads, and photographs showing safe and unsafe practices/conditions and their consequences.

**Tools/Equipment:** Power and hand tools, aircraft and aircraft systems, parts, and appliances, test and inspection tools, protective clothing and equipment, fire extinguishers, and chemicals commonly used in performing aircraft maintenance.

**References:** Material Safety Data Sheets (MSDS), aircraft maintenance manuals, government and industry published safety data, and equipment manufacturer's instructions.

### **PRESENTATION:**

#### **Topics/Steps: Personal Safety**

- Key Points:**
1. Safety related terms.
  2. General safety practices.
  3. Causes of accidents.
  4. Steps to be followed after an accident.
  5. Accident report completion.

#### **Flight Line, Shop, and Hangar Safety**

- Key Points:**
1. Recognizing and identifying safety color codes and signs and their correct application.
  2. Performing a safety inspection of flight line, hangar, and shop areas.
  3. Identifying hazardous parts of various power tools.
  4. Rules for safe use of hand and power tools and shop equipment.
  5. Demonstrate proper use of power tools and shop equipment.

#### **Chemical Safety**

- Key Points:**
1. Using hazardous materials.
  2. Using MSDS and manufacturer's instructions.

#### **Fire Safety**

- Key Points:**
1. Classes of fire.
  2. Types of fire extinguishers and their inspection.
  3. Matching fire extinguishing agents to classes of fires.
  4. Proper techniques for using fire extinguishers.

**PRACTICE:** Identifying flight line, shop, and hangar safety hazards.  
Safe use of hand and power tools, and flight line, shop, and hangar equipment.

**ASSESSMENT:** Written test covering category key points. Practical test covering practice items.