

# Instrument Pilot Flight Instruction Lesson Plan

## ILS and Localizer Approach Procedures

Student: \_\_\_\_\_ Date: \_\_\_\_\_

### Objectives:

Upon completion of this lesson, the student will:

- Be able to fly an LOC only or ILS approach according to the published procedure.
- Be able to identify the missed approach point and initiate the published missed approach procedure.
- Be able to execute a straight-in or circling landing from the missed approach point.

### Elements:

- Use of localizer/glideslope receiver.
- Use of marker beacon receiver.
- Wind drift correction.
- Power, attitude and airspeed management.

### Schedule:

- |  |       |
|--|-------|
| • Pre-lesson briefing  | 00:10 |
| • Pre-Flight and possibly flight to another airport            | 00:20 |
| • Practice localizer only and ILS approaches and return flight | 00:50 |
| • Post-lesson debriefing                                       | 00:10 |
| Total:   | 01:30 |

### Equipment:

- IFR Capable airplane (with Localizer/Glideslope receiver and Marker Beacon receiver)
- View limiting device
- Appropriate departure procedure, en-route, STAR and approach charts.

### Instructor Actions:

1. Pre-lesson briefing
  - Present lesson objective.
  - Describe what will take place during the lesson.
  - Describe general characteristics of localizer and glideslope.
    - Course width and glideslope height
    - Marker beacon indications
    - Glideslope intercept
    - Need for precise and small wind drift correction adjustments.
    - Power management to maintain glideslope
  - Review approaches to be flown during the lesson
    - Procedure turns/holding patterns
    - Step-down fixes
    - Missed approach point identification
    - Missed approach procedure
    - Power, attitude and airspeed management

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2. Pre-flight and possible flight to another airport
  - Observe that the student performs the proper preflight checks of the instruments, navigation equipment and airplane systems appropriate for an IFR flight.
  - Observe that the student determines when the last VOR check was performed on the airplane and determines whether it was within the last 30 days. If not, have the student perform the check.
  - If the approaches are to be flown at another airport, use the time to practice the student's general instrument flying skills. With the student wearing the view limiting device, give him or her instructions to fly various headings, perform standard rate turns, climbs and descents, etc.
3. Practice LOC only and ILS approaches and return flight (start with localizer only).
  - Demonstrate first approach and describe actions being taken.
    - Radio and NAV receiver settings (identification).
    - Indicate arrival at the missed approach point and fly the published missed approach procedure.
  - Have student put on the view limiting device and fly the approach.
    - Issue ATC-like instructions to the student as appropriate to set him or her up for the approach.
    - Coach as necessary through the approach.
  - Have the student identify the missed approach point and fly the missed procedure.
  - Repeat as many times as necessary but have the student complete the approach using straight-in and circling approaches to landing as appropriate.
  - Repeat procedure for full ILS approach.
  - If one is available in the area, perform a back-course approach.
  - If the approaches were performed at another airport, use the time on the flight back to practice the student's general instrument flying skills. With the student wearing the view limiting device, give him or her instructions to fly various headings, perform standard rate turns, climbs and descents, etc.
4. Post Lesson Debriefing
  - Critique student's performance of maneuvers with constructive suggestions to improve technique.
  - Answer student questions.
  - Ask student questions to evaluate what was learned.
  - Explain what will be covered in the next lesson and assign reading material.

### Student Actions:

1. Pre-lesson briefing
  - Ask questions concerning previous lessons and/or this one.
2. Pre-Flight and possible flight to another airport
  - The student performs the proper preflight checks of the instruments, navigation equipment and airplane systems appropriate for an IFR flight.
  - If the approaches are to be flown at another airport, the student will use the time to practice the general instrument flying skills. Wearing the view limiting device, the student will follow instructor given instructions to fly various headings, perform standard rate turns, climbs and descents, etc.

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3. Practice localizer only and ILS approaches and return flight (start with localizer only).
  - Follow instructor demonstration of first approach and description of actions being taken.
  - Student will put on the view limiting device and fly the approach.
    - Student will comply with ATC-like instructions from the instructor as appropriate to set him or her up for the approach.
  - Have the student identify the missed approach point and fly the missed procedure.
  - Repeat as many times as necessary but complete the approach using straight-in and circling approaches to landing as appropriate.
  - Repeat procedure for full ILS approach (back-course also if available)
  - If the approaches were flown at another airport, the student will use the time on the return flight to practice the general instrument flying skills. Wearing the view limiting device, the student will follow instructor given instructions to fly various headings, perform standard rate turns, climbs and descents, etc.
4. Post-flight debriefing.
  - Ask questions about the lesson.

### Completion Standards:

This lesson will be completed when the student is able to:

- Follow an localizer approach course, holding the CDI with no more than a  $\frac{3}{4}$  scale deflection of the CDI.
- Fly a full ILS maintaining the localizer course with no more than a  $\frac{3}{4}$  scale deflection of the CDI and glideslope needles.
- Apply proper power, attitude and airspeed control on the approach.
- Identify the missed approach point and fly the published missed approach procedure.
- Complete the approach using straight-in or circling approaches to landing as appropriate.

### Common Errors:

- Failure to properly identify the localizer and determine whether or not it is operational.
- Failure to apply proper wind correction while following the localizer; chasing the needle.
- Failure to apply proper power, attitude and airspeed management in order to maintain glideslope.

### References:

- Instrument Flying Handbook (FAA-H-8083-15); Pages 7-27 – 7-35
- Instrument Procedures Handbook (FAA-H-8261-1A); Pages 5-50 – 5-56
- INSTRUMENT PTS Area of Operation VI Task C, D, E and F.

### Possible Review Questions: