SPORTY’S®
WHAT YOU SHOULD KNOW® SERIES

INSTRUMENT RATING TRAINING COURSE OUTLINE
(FLIGHT TRAINING SYLLABUS)

Sporty’s Academy, Inc.
Clermont County/Sporty’s Airport
Batavia, OH 45103

© 1995, 2017 by Sporty’s Academy, Inc.
All Rights Reserved
Printed in the United States of America
ISBN 978-0-9715631-6-2

For additional copies reorder #M377A

Call: 1 (USA) 800.SPORTYS (776.7897)

Fax: 1 (USA) 800.359.7794
1 (USA) 513.735.9200

sportys.com
STUDENT INFORMATION

Name ____________________________________________________________
LAST                                                 FIRST                                                   MIDDLE
Address ___________________________________________________________
City __________________________ State________________ ZIP_____________
Telephone ___________________   ___________________   ___________________
MOBILE                                              HOME                                                    WORK
Email ____________________________________________________________
Pilot Cert.   _________________________________________________________
TYPE                                              CERT #                                               DATE ISSUED
Emergency Contact    _________________________________________________
Phone ________________________  Relationship __________________________

ENROLLMENT INFORMATION
Course Title ________________________________________________________
Enrollment Date ________________   Approved School Cert # _______________
Medical Certificate ________________________________________________
Previous School __________________  Course Title _______________________
Training Credit ____________________________________________________
Approval of Training Credit     __________________________________________
Remarks __________________________________________________________

STAGE CHECK / KNOWLEDGE TEST COMPLETION RECORD
Date ______  Stage _____ Ck Pilot ______ Date ______  Stage _____ Ck Pilot ______
Date ______  Stage _____ Ck Pilot ______
Date of Knowledge Test __________  Grade ________________

ENDORSEMENT RECORD
Pre-Training U.S. Citizenship Confirmation or TSA Alien Flight Training Requirements
Completed with Records   Date________   Type _________    Inst. Int. _____________
Complex / High Performance Airplane
Date __________  A/C Type ___________  Inst. Int. ______________

COMPLETION INFORMATION
Completion _______   Transfer _________ Terminated __________
DATE                                              DATE                                                 DATE
Records Certified Correct ________________________
Remarks ___________________________________________________
CHIEF INSTRUCTOR
TRAINING COURSE OUTLINE
INSTRUMENT RATING - AIRPLANE

COURSE OBJECTIVES
The student will obtain the aeronautical skill and experience necessary to meet the requirements for an Airplane Category Instrument Rating.

COURSE COMPLETION STANDARDS
The student must demonstrate through flight tests and school records that the aeronautical skill and experience requirements necessary to obtain an Airplane Category Instrument Rating have been met.
TRAINING COURSE OUTLINE
INSTRUMENT RATING - AIRPLANE

COURSE INTRODUCTION

Sporty’s Training Course Outline for the Instrument Rating – Airplane is the syllabus portion of the Sporty’s Academy 14 CFR Part 141* Approved Instrument Rating Training Course. This outline provides a logical, structured sequence that maximizes learning and meets 14 CFR Part 141 training time requirements. Training times must be increased slightly to meet 14 CFR Part 61* requirements for students training under those rules. This Training Course Outline also contains ground lessons appropriate to the Instrument Rating.

COURSE CONCEPT

The Instrument Rating course utilizes the building-block theory of learning, which recognizes that each item taught must be presented on the basis of previously learned knowledge and skills.

For optimum effectiveness, the ground lessons and viewing of the associated video segments should be completed prior to the respective flight lessons. If a considerable length of time has elapsed between the ground lesson and the associated flight, the instructor may wish to conduct a short review of essential material.

COURSE ELEMENTS

The course includes the latest FAA pilot certification requirements and a maximum of student-oriented instruction. The syllabus and support materials not only provide necessary information, but also guide the student through the course in a logical manner.

STUDENT VIDEO PREPARATION

The Sporty’s Instrument Rating Training Course Outline is based on Sporty’s Complete Flight Training course for the Instrument Rating DVD, Online, or App. It is important that the student view all seven video volumes in the Instrument course. For each ground and flight lesson, specific video sections are indicated for additional study which should be accomplished as part of a self-study program. Additional topics may also be assigned by the instructor. To maximize the learning benefit of the videos, the student should also review the video sections after completion of the lesson. This is particularly true of any subject areas where the student encountered difficulty.

PREFLIGHT ORIENTATION

Prior to each dual lesson, the instructor must provide the student with a thorough overview of the subject matter to be covered during the lesson. The instructor should select a quiet, private place to brief the student and explain the lesson material. It is important that the instructor define unfamiliar terms and explain the maneuvers and objectives of each lesson.

*14 CFR Part 141 and 14 CFR Part 61 refer to the appropriate parts of Title 14 of the Code of Federal Regulations. Title 14 covers aeronautics and space. The regulations in this title are often referred to as the Federal Aviation Regulations or FARs.
FLIGHT TRAINING DEVICE / AVIATION TRAINING DEVICE

Sporty’s Training Course Outline for the Instrument Rating is designed to allow practice of maneuvers and procedures in the airplane only after the student has been introduced to and taught the maneuver or procedure in an approved flight training device (FTD) or approved aviation training device (ATD). FTD / ATD lessons are more effective for initial explanation, discussion, and introduction of new material. The best results are obtained when the student learns a maneuver or procedure prior to flying the airplane. Ideally the airplane should be used to practice what has been learned in the FTD or ATD. Refer to the letter of authorization for the device to determine what may count toward the time required for the Instrument Rating. When procedures and maneuvers are introduced in the airplane the instructor must explain and discuss the new material to insure that the student thoroughly understands the new material.

AIRPLANE PRACTICE

Airplane practice must be conducted so that the student obtains the maximum benefit from each flight. Each flight, where applicable, should begin with a review of previously practiced maneuvers, as deemed necessary by the instructor, before any new maneuvers are reviewed. If the airplane is not equipped for all of the tasks detailed in a particular lesson, the items that cannot be completed for this reason should be discussed. If there is a possibility that the student will use an airplane that is equipped for these tasks during the practical test, the tasks should be successfully demonstrated by the student at some point in the training.

POSTFLIGHT EVALUATION

The postflight evaluation is equally as important as the preflight orientation. During each postflight session, the student must be thoroughly debriefed. Noticeable advancement should be apparent and recommendations should be made for improvement, where appropriate. This action is a valuable instructional technique because it increases retention. The instructor must also discuss the elements of the next lesson. This prepares the student for the video assignment and will enhance the student’s understanding.

LESSON TIMES

Lesson times are specified as a guide to meeting the 14 CFR Part 141 training requirements for the Instrument Rating. Under the building block concept, however, the student must achieve a specific level of proficiency before starting the next lesson. Lessons may be combined or repeated as needed based on the progress made by the student. The Course Time Allocation Table is provided for planning purposes. It is imperative that the instructor and student periodically review the student’s overall progress and determine that the training requirements are consistently being met.

OPTIONAL LESSONS

There are 5 lessons that may be found at the end of this TCO which are optional substitutions for lessons 9, 10, 11, 24, & 26. These lessons include NDB / ADF concepts and may be utilized if the training aircraft is ADF equipped or when otherwise desired.
STUDENT STAGE CHECKS

Stage checks measure the student’s accomplishments during each stage of training. This procedure provides close supervision of training and another opinion on the student’s progress. An examination of the building-block theory of learning will show that it is extremely important for progress and proficiency to be satisfactory before the student enters a new stage of training. Therefore, the next stage should not begin until the student successfully completes the current stage. Failure to follow this progression may defeat the purpose of the stage check and lead to overall course breakdown.

GRADING

Evaluation is an essential part of the teaching process. The student must be apprised of his or her progress. All instructional flights must be graded in accordance with the following criteria.

Each pilot operation will be evaluated at the completion of each flight.

1 = EXCELLENT
The student demonstrates knowledge or skills with no procedural or mechanical errors and the flight instructor does not provide any assistance.

2 = ABOVE AVERAGE
The student demonstrates knowledge or skills that exceed standards. Occasional procedural or mechanical errors are quickly recognized and corrected.

3 = AVERAGE
The student consistently demonstrates knowledge and skills that meet standards with timely recognition of procedural or mechanical errors.

4 = BELOW AVERAGE
The student demonstrates knowledge and skills with difficulty, is slow in recognizing and correcting procedural or mechanical errors.

5 = BELOW ACCEPTABLE STANDARDS
The student does not demonstrate adequate knowledge or skills, is unable to recognize and correct procedural or mechanical errors.

I = INCOMPLETE
The student has not completed the pilot operation listed.

Each lesson will be assigned an overall grade based on the following criteria.

S = SATISFACTORY
The content of the lesson has been completed to the standards outlined in the individual lesson Completion Standards.

U = UNSATISFACTORY
Indicates that all or part of the lesson content was not completed to the standards outlined in the individual lesson Completion Standards. One or more pilot operations graded as a “5” will require an overall grade of unsatisfactory.

I = INCOMPLETE
Indicates the content of the lesson was not completed, but the pilot operations covered were satisfactory. Pilot operations not completed must be indicated with an “I”.

Page iv
GRADING NOTES

1. When a lesson is graded unsatisfactory, only those pilot operations graded as “5” must be repeated to standards during the next lesson.
2. When a lesson is graded incomplete, the pilot operations not performed must be completed prior to attempting the pilot operations for the next lesson.
3. Use the “CRS TOTALS: (F/I/D/FS)” lines within the grading box to total the student’s flight, instrument (in the airplane), ground instruction (discussion), and FTD/simulator times in the course after each lesson.

INSTRUMENT FLIGHT PATTERNS

The instrument flight patterns “A” and “B” and associated text on the following pages have been reprinted from AC 61-27C, the Instrument Flying Handbook that preceded FAA-H-8083-15. AC 61-27C is no longer available, but these patterns are still quite useful in developing a pilot’s ability to control the aircraft while flying solely by reference to the instruments. Aircraft control is the primary goal of using the flight patterns; the patterns are only a teaching tool for this purpose.

The instrument flight patterns are used in Stage I of this Training Course Outline.

TSA ALIEN FLIGHT STUDENT PROGRAM RECORDS

The TSA mandated Alien Flight Student Program (AFSP) has a number of compliance and record keeping requirements. Refer to the TSA website for details. The inside front cover of this book has a place to record that you have completed the requirements. That line is there to serve as a reminder to complete the TSA mandates but does not meet the documentation requirements.

Per the TSA, an instructor may elect to use an endorsement in the Student’s and the Instructor’s logbooks to document confirmation of a Student’s U.S. Citizenship (not allowed for aliens). The Instructor’s copy of the record must be kept for at least 5 years. The recommended text of the endorsement is as follows:

“I certify that [insert student’s name] has presented me a [insert type of document presented, such as a U.S. birth certificate or U.S. passport, and the relevant control or sequential number on the document, if any] establishing that [he or she] is a U.S. citizen or national in accordance with 49 CFR 1552.3(h). [Insert date and instructor’s signature and CFI number.]”

For details or clarification, refer to the TSA’s website.
Pattern “A”

The purpose of both Pattern “A” and Pattern “B” is to further develop the pilot’s ability to control the aircraft without deliberate thought. These patterns help prepare the student for the holding patterns and procedure turns he will fly during radio navigation. Initial practice should be on cardinal headings for simplification; however, as proficiency increases the student should be able to accomplish the patterns on any heading. The instructor may make various changes in the patterns, or, the patterns may be flown over a navigational facility, correcting for drift on each leg.

1. **Brief Student Thoroughly Prior to the Flight**

2. **Performance of Maneuver in the Aircraft**
   a. This maneuver should be performed first with all available instruments, then on partial panel.
   b. Start Pattern “A” and demonstrate through the first three turns, then have the student continue.
   c. Timing should start when the clock second hand is on a cardinal point, preferably the 12 o’clock position.
   d. The timing for this pattern is consecutive in that the time for each leg is started when control pressure is applied to recover from the preceding turn.
   e. After recovery from turns, allow sufficient time for the compass card to stop oscillating, then note the heading and correct if necessary. An exception is the 30-second leg. If you note an error in heading here, compensate for it by lengthening or shortening the time allotted for the next turn.

   ![Diagram of Pattern “A”]

   - 1 MIN. TURN
   - 15 SEC. TURN
   - 15 SEC. TURN
   - 1 MIN. TURN
   - 15 SEC. TURN
   - 1 MIN. 15 SEC. TURN

   f. The turn coordinator and magnetic compass must be observed closely at all times. To correct a heading, use a timed turn (for small heading changes, use a half-standard rate turn).
   g. An efficient cross-check is required during airspeed changes so that corrections may be applied immediately.
Pattern “B”

1. Brief Student Thoroughly Prior to the Flight

2. Performance of Maneuver in the Aircraft
   a. Do not demonstrate unless absolutely necessary.
   b. All available instruments are used.
   c. Roll out on headings regardless of time.
   d. When changing airspeed in turns, simultaneously change bank and power, also pitch if applicable.
   e. The descending final turn is made at an absolute rate.
   f. The final descent is made to a minimum altitude set by the instructor, or until the time expires, whichever comes first.
   g. The emergency pull-up is made as a normal go-around procedure, climbing to the original altitude.
## Course Time Allocation Table

<table>
<thead>
<tr>
<th>STAGE NO.</th>
<th>LESSON</th>
<th>TRAINING TIMES</th>
<th>DISCUSSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>I</td>
<td>2</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>I</td>
<td>3</td>
<td>1.2</td>
<td>1.0</td>
</tr>
<tr>
<td>I</td>
<td>4</td>
<td>1.2</td>
<td>1.0</td>
</tr>
<tr>
<td>I</td>
<td>5</td>
<td>1.2</td>
<td>1.0</td>
</tr>
<tr>
<td>I</td>
<td>6</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>I</td>
<td>7</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>I</td>
<td>8</td>
<td>1.2</td>
<td>1.0</td>
</tr>
<tr>
<td>I</td>
<td>9</td>
<td>1.2</td>
<td>1.0</td>
</tr>
<tr>
<td>I</td>
<td>10</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>I</td>
<td>11</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>I</td>
<td>12</td>
<td>1.2</td>
<td>1.0</td>
</tr>
<tr>
<td>I</td>
<td>13</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>I</td>
<td>14</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>I</td>
<td>15</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>I</td>
<td>16</td>
<td>1.8</td>
<td>1.6</td>
</tr>
<tr>
<td>I</td>
<td>17</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>I</td>
<td>18</td>
<td>1.8</td>
<td>1.6</td>
</tr>
<tr>
<td>I - STG CHK</td>
<td>19</td>
<td>1.4</td>
<td>1.2</td>
</tr>
<tr>
<td>STG I TOTALS</td>
<td></td>
<td>12.2</td>
<td>10.4</td>
</tr>
<tr>
<td>II</td>
<td>20</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>II</td>
<td>21</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>II</td>
<td>22</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>II</td>
<td>23</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>II</td>
<td>24</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>II</td>
<td>25</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>II</td>
<td>26</td>
<td>1.8</td>
<td>1.6</td>
</tr>
<tr>
<td>II</td>
<td>27</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>II</td>
<td>28</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>II</td>
<td>29</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>II</td>
<td>30</td>
<td>2.0</td>
<td>1.8</td>
</tr>
<tr>
<td>II</td>
<td>31</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>II</td>
<td>32</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>II</td>
<td>33</td>
<td>2.0</td>
<td>1.8</td>
</tr>
<tr>
<td>II</td>
<td>34</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>II</td>
<td>35</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>II</td>
<td>36</td>
<td>2.0</td>
<td>1.8</td>
</tr>
<tr>
<td>II</td>
<td>37</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>II</td>
<td>38</td>
<td>2.0</td>
<td>1.8</td>
</tr>
<tr>
<td>II - STG CHK</td>
<td>39</td>
<td>2.0</td>
<td>1.8</td>
</tr>
<tr>
<td>STG II TOTALS</td>
<td></td>
<td>11.8</td>
<td>10.6</td>
</tr>
<tr>
<td>III</td>
<td>40</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>III</td>
<td>41</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>III</td>
<td>42</td>
<td></td>
<td>2.0</td>
</tr>
<tr>
<td>III</td>
<td>43</td>
<td>3.0</td>
<td>2.8</td>
</tr>
<tr>
<td>III</td>
<td>44</td>
<td></td>
<td>2.0</td>
</tr>
<tr>
<td>III</td>
<td>45</td>
<td>4.0</td>
<td>3.8</td>
</tr>
<tr>
<td>III</td>
<td>46</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>III</td>
<td>47</td>
<td>2.0</td>
<td>1.8</td>
</tr>
<tr>
<td>III - STG CHK</td>
<td>48</td>
<td>2.0</td>
<td>1.8</td>
</tr>
<tr>
<td>STG III TOTALS</td>
<td></td>
<td>11.0</td>
<td>10.2</td>
</tr>
<tr>
<td>COURSE TOTALS</td>
<td></td>
<td>35.0</td>
<td>31.2</td>
</tr>
<tr>
<td>COMBINED COURSE TOTALS</td>
<td></td>
<td>45.7</td>
<td>30.0 TOTAL</td>
</tr>
</tbody>
</table>

**Note:** A cross-country flight of at least 250 Nautical Miles along airways or ATC directed routing with one segment of the flight consisting of at least a straight line distance of 100 Nautical Miles between airports is required for Part 141. The flight must involve an instrument approach at each airport and involve 3 different kinds of approaches with the use of navigation systems. Part 61 requires a similar cross-country flight but does not require the 100 miles distance for one segment of the flight.
STAGE I

STAGE OBJECTIVE:

During this stage, the student will learn precise airplane attitude control solely by reference to the airplane instruments.

STAGE COMPLETION STANDARDS:

At the completion of this stage the student will demonstrate precise airplane attitude control by instrument reference only. This will include the use of full panel and partial panel instrument reference. Tolerances for all maneuvers will be in accordance with the Instrument Rating Practical Test Standard.
## LESSON 1

### DUAL - GROUND

### FLIGHT INSTRUMENTS

<table>
<thead>
<tr>
<th>DATE_________</th>
<th>GRADE (Circle One) S U I</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDENT NAME _____________</td>
<td>STUDENT SIGNATURE______________</td>
</tr>
<tr>
<td>INSTRUCTOR # _____________</td>
<td>INSTRUCTOR SIGNATURE______________</td>
</tr>
<tr>
<td>DISCUSSION: (1.2) ___________</td>
<td></td>
</tr>
<tr>
<td>CRS TOTALS: (F/I/D/FS) <strong><strong>/</strong></strong>/<strong><strong>/</strong></strong></td>
<td></td>
</tr>
</tbody>
</table>

### LESSON OBJECTIVE:

During this lesson, the instructor will review the pitot-static and gyroscopic instruments with the student.

### CONTENT:

#### Lesson Introduction

<table>
<thead>
<tr>
<th>Altimeter</th>
<th>Attitude Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of Altitude</td>
<td>Gyro Driven Heading Indicator</td>
</tr>
<tr>
<td>Vertical Speed Indicator</td>
<td>Turn Coordinator / Turn &amp; Bank Indicator</td>
</tr>
<tr>
<td>Airspeed Indicator</td>
<td>Slip &amp; Skid Indicator</td>
</tr>
<tr>
<td>Types of Airspeed</td>
<td>Gyroscopic Instrument Errors</td>
</tr>
<tr>
<td>Pitot-Static Instrument Errors</td>
<td>Glass Panel Flight Instrument Displays</td>
</tr>
</tbody>
</table>

### COMPLETION STANDARDS:

At the completion of this lesson, the student will have a thorough knowledge of the pitot-static and gyroscopic instruments.

### ADDITIONAL STUDY:

- Instrument Rating Airman Certification Standards (Refer to Section 1 of the ACS Study Guide, which accompanies Sporty’s Complete Flight Training Course for the Instrument Rating.)
- Sporty’s Complete Flight Training Course for the Instrument Rating - Video Vol 1: Segments 1-12 (DVD 1-13)

**Note on Video Segment Numbering:** The DVDs, online course, and iOS app for the course contain the same video content at the time of production. The numbering is slightly different on the DVDs due to Introductory segment of each DVD being labeled as a separate Segment 1. This introductory material is included with the first lesson segment on the online and iOS versions thus causing the segment numbers to be different by one.
**STAGE I**

**LESSON 2**

**DUAL - GROUND**

**BAI**

<table>
<thead>
<tr>
<th>DATE_________</th>
<th>GRADE (Circle One) S U I</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>STUDENT NAME ___________</td>
<td>STUDENT SIGNATURE__________</td>
</tr>
<tr>
<td>INSTRUCTOR # ___________</td>
<td>INSTRUCTOR SIGNATURE________</td>
</tr>
</tbody>
</table>

**DISCUSSION: (1.2) ___________**

**CRS TOTALS: (F/I/D/FS) ____/____/____/____**

**Notes:**

---

**LESSON OBJECTIVE:**

During this lesson, the instructor will introduce the student to concepts related to the control of the aircraft using the aircraft instruments.

**CONTENT:**

- **Lesson Introduction**
  - Instrument Scan
  - Instrument Interpretation
  - Aircraft Control
  - Performance Instruments
  - Control Instruments

- **Lesson Introduction**
  - Primary Instruments
  - Supporting Instruments
  - Direct Indicating Instruments
  - Indirect Indicating Instruments
  - Instrument Takeoff

**COMPLETION STANDARDS:**

At the completion of this lesson, the student will have an understanding of controlling the aircraft by reference to the aircraft instruments.

**ADDITIONAL STUDY:**

- FAA-H-8083-15-IFH
- Instrument Rating Airman Certification Standards
- Vol 1: Segments 1-12 (DVD 1-13)
Stage I
Lesson 3
Dual - Aircraft

Lesson Objective:

During this lesson, the instructor will introduce the student to instrument pre-flight procedures, the instrument flight deck check, the instrument scan, and basic attitude instrument (BAI) flying. The instructor will assist the student in filling out the performance desired table with information for the training aircraft.

Content:

<table>
<thead>
<tr>
<th>Lesson Introduction</th>
<th>Lesson Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrument Preflight and Flight Deck Check</td>
<td>Level Standard Rate Turns</td>
</tr>
<tr>
<td>Instrument Scan</td>
<td>Constant Airspeed Climbs</td>
</tr>
<tr>
<td>Instrument Takeoff</td>
<td>Constant Airspeed Descents</td>
</tr>
<tr>
<td>Straight-and-Level Flight</td>
<td>Level-Offs &amp; Trim Use</td>
</tr>
</tbody>
</table>

Completion Standards:

At the completion of this lesson, the student will have a basic knowledge of the instrument preflight procedures, the instrument flight deck check, and the instrument scan.

Additional Study:

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 1: Segments 1-4, 8 (DVD 1-5, 9)

<table>
<thead>
<tr>
<th>Performance Desired</th>
<th>Target IAS or VS</th>
<th>Power Setting</th>
<th>Pitch Attitude (Draw on Horizon Line Below)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straight-and-Level (Low Cruise)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Straight-and-Level (High Cruise)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cruise Climb</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Performance Climb (Best Rate - (V_Y))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cruise Descent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Speed Descent</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:

__________________________________________________________________________________

__________________________________________________________________________________

__________________________________________________________________________________

__________________________________________________________________________________
STAGE I
LESSON 4
DUAL - AIRCRAFT

<table>
<thead>
<tr>
<th>DATE__________</th>
<th>ACFT/FTD ID________</th>
<th>GRADE (Circle One)</th>
<th>S</th>
<th>U</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDENT NAME</td>
<td>STUDENT SIGNATURE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INSTRUCTOR #</td>
<td>INSTRUCTOR SIGNATURE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FLIGHT TIME:</td>
<td>DISCUSSION:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INSTRUMENT:</td>
<td>CRS TOTALS:</td>
<td>F/I/D/FS</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to constant rate climbs and descents, steep turns, and climbing and descending turns.

CONTENT:

**Lesson Introduction**
- Constant Rate Climbs/Descents
- Climbing/Descending Turns
- Steep Turns

**Lesson Review**
- Instrument Preflight
- Instrument Flight Deck Check
- Straight-and-Level
- Standard Rate Turns
- Constant Airspeed Climbs/Descents
- Level-Offs
- Instrument Takeoff

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to perform 45° bank steep turns (180° or 360°) by reference to instruments and have a basic knowledge of constant rate climbs/descents, standard rate turns, and climbing and descending turns. The student will maintain or roll out on assigned headings ±15°, maintain or level off at assigned altitudes ±150', maintain airspeeds ±15 knots, and maintain turning angles of bank ±10°.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 1: Segments 3-8 (DVD 4-9)

Notes:
Stage I
LESSON 5
DUAL - AIRCRAFT

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to instrument flight patterns. Note: Instrument flight patterns are available in the Course Introduction of this book. These patterns are a training tool, not a training goal, as such it is acceptable for the flight instructor to coach the student through the patterns and for the student to have the patterns available for reference during execution.

CONTENT:

Lesson Introduction

_____ Instrument Flight Patterns

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic knowledge of instrument flight patterns. The student will maintain or roll out on assigned headings ±15°, maintain or level off at assigned altitudes ±150', maintain airspeeds ±15 knots, and maintain turning angles of bank ±10°.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 1: Segments 6-8 (DVD 7-9)
STAGE I
LESSON 6
DUAL - GROUND
MAGNETIC COMPASS

DATE_________ GRADE (Circle One) S U I
STUDENT NAME ___________ STUDENT SIGNATURE ___________
INSTRUCTOR # ___________ INSTRUCTOR SIGNATURE ___________
DISCUSSION: (1.2) ___________
CRS TOTALS: (F/I/D/FS) ____/____/____/____

LESSON OBJECTIVE:

During this lesson, the instructor will review the magnetic compass with the student.

CONTENT:

Lesson Introduction

_____ Magnetic Compass Construction
_____ Principles of Magnetic Attraction
_____ Magnetic Dip
_____ Magnetic Variation
_____ Magnetic Deviation
_____ Northerly Turning Error
_____ Acceleration Error
_____ Oscillation Error
_____ Turns to Magnetic Compass Headings

Lesson Introduction

_____ Emergency Alternatives to Magnetic Compass Turns
_____ Calibrating Turn Coordinator
_____ Timed Turns
_____ Partial Panel Instrument Flight
_____ Unusual Attitude Recoveries - Full Panel
_____ Unusual Attitude Recoveries - Partial Panel
_____ Aeromedical Factors for IFR Flight

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a thorough knowledge of the magnetic compass.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 1: Segments 8-12 (DVD 9-13)

Notes:

________________________________________
________________________________________
________________________________________
________________________________________
________________________________________
Stage I  
LESSON 7  
DUAL - FTD / ATD

DATE__________ ACFT/FTD ID_________ GRADE (Circle One)  S  U  I
STUDENT NAME ______________ STUDENT SIGNATURE________________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE________________
FTD/ATD/SIM: (1.5) _______ DISCUSSION: (0.4) _______
CRS TOTALS: (F/I/D/FS) ____/____/____/____

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to magnetic compass turns, timed turns, partial panel instrument flight, and unusual flight attitude recoveries in an FTD or ATD. Simulation will be used to introduce realistic and unexpected system failures and emergency alternatives to magnetic compass turns.

CONTENT:

Lesson Introduction

Magnetic Compass Turns
Partial Panel Instrument Flight
Partial Panel Instrument Flight Scenarios with Realistic Simulated Failures
Timed Turns

Emergency Alternatives to Magnetic Compass Turns
Unusual Attitude Recoveries - Full Panel
Unusual Attitude Recoveries - Partial Panel

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic knowledge of magnetic compass turns, timed turns, partial panel instrument flight, and unusual flight attitude recoveries. The student will maintain or roll out on assigned headings ±15°, maintain or level off at assigned altitudes ±150', maintain airspeeds ±15 knots, and maintain turning angles of bank ±10°.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 1: Segments 8-12 (DVD 9-13)

Notes:
STAGE I
LESSON 8
DUAL - AIRCRAFT

<table>
<thead>
<tr>
<th>DATE__________</th>
<th>ACFT/FTD ID__________</th>
<th>GRADE (Circle One) S U I</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDENT NAME ____________</td>
<td>STUDENT SIGNATURE ____________</td>
<td></td>
</tr>
<tr>
<td>INSTRUCTOR # ____________</td>
<td>INSTRUCTOR SIGNATURE ____________</td>
<td></td>
</tr>
</tbody>
</table>

FLIGHT TIME: (1.2) ______ DISCUSSION: (0.4) ______
INSTRUMENT: (1.0) ____ CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to magnetic compass turns, timed turns, and partial panel instrument flight.

CONTENT:

<table>
<thead>
<tr>
<th>Lesson Introduction</th>
<th>Lesson Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnetic Compass Turns</td>
<td>Instrument Flight Patterns</td>
</tr>
<tr>
<td>Partial Panel Instrument Flight</td>
<td></td>
</tr>
<tr>
<td>Timed Turns</td>
<td></td>
</tr>
<tr>
<td>Emergency Alternatives to Magnetic Compass Turns</td>
<td></td>
</tr>
</tbody>
</table>

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic knowledge of magnetic compass turns, timed turns, and partial panel instrument flight. The student will maintain or roll out on assigned headings ±15°, maintain or level off at assigned altitudes ±150', maintain airspeeds ±15 knots, and maintain turning angles of bank ±10°.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 1: Segments 8-10 (DVD 9-11)
STAGE I  
LESSON 9  
DUAL - AIRCRAFT

During this lesson, the instructor will introduce the student to unusual attitude recoveries.

CONTENT:

Lesson Introduction

Unusual Attitude Recoveries - Full Panel

Unusual Attitude Recoveries - Partial Panel

Lesson Review

Instrument Flight Patterns

Partial Panel Instrument Flight

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic knowledge of unusual attitude recoveries. During partial panel instrument flight, the student will maintain or roll out on assigned headings ±15°, maintain or level off at assigned altitudes ±150', maintain airspeeds ±15 knots, and maintain turning angles of bank ±10°. During full panel instrument flight maneuvers, the student will maintain or roll out on assigned headings ±10°, maintain or level off at assigned altitudes ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH  
Instrument Rating Airman Certification Standards  
Vol 1: Segments 10-12 (DVD 11-13)
STAGE I
LESSON 10
DUAL - GROUND
VOR FUNDAMENTALS

DATE_________          GRADE (Circle One)  S  U  I
STUDENT NAME _____________ STUDENT SIGNATURE_______________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE_____________
DISCUSSION: (1.2) ___________
CRS TOTALS: (F/I/D/FS) ____/____/____/____

LESSON OBJECTIVE:

During this lesson, the instructor will discuss VOR fundamentals with the student.

CONTENT:

Lesson Introduction

_____ VOR Principles of Operation / Transmitter / Receiver / Min Operational Network (MON)
_____ VOR Receiver Accuracy Check
_____ VOR Class Designations & Service Volumes
_____ VOR Errors & Irregularities

Lesson Introduction

_____ VOR Tuning and Identifying
_____ VOR Orientation
_____ VOR Intercepting
_____ VOR Tracking / Wind Correction Techniques
_____ VOR Station Passage

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a thorough knowledge of the VOR and its operating principles. The student will also be able to accurately describe the proper techniques for orientation, intercepting, and tracking a VOR radial and also performing a VOR receiver check.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
AIM
Instrument Rating Airman Certification Standards
Vol 3: Segment 8 (DVD 9)
STAGE I
LESSON 11
DUAL - FTD / ATD

DATE_________ ACFT/FTD ID_________ GRADE (Circle One)  S  U  I
STUDENT NAME _____________ STUDENT SIGNATURE______________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE_____________

LESSON OBJECTIVE:

During this lesson, the instructor will introduce VOR procedures in an FTD or ATD.

CONTENT:

Lesson Introduction

_____ VOR Tuning and Identifying
_____ VOR Orientation, Position, and Station
    Passage
_____ VOR Radial Intercepting and Tracking
    Procedures / Wind Correction Techniques

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic knowledge of VOR procedures. The student will maintain or roll out on assigned headings ±10°, maintain or level off at assigned altitudes ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 3: Segment 8 (DVD 9)
STAGE I
LESSON 12
DUAL - AIRCRAFT

DATE___________ ACFT/FTD ID__________ GRADE (Circle One)  S  U  I  
STUDENT NAME _________________ STUDENT SIGNATURE _________________
INSTRUCTOR # _______________ INSTRUCTOR SIGNATURE _______________
FLIGHT TIME: (1.2) ______ DISCUSSION: (0.4) ______
INSTRUMENT: (1.0) ______ CRS TOTALS: (F/I/D/FS) / / / /

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to VOR procedures in the training aircraft.

CONTENT:

Lesson Introduction

______ VOR Tuning and Identifying
______ VOR Orientation, Position, and Station
______ Passage
______ VOR Radial Intercepting and Tracking
______ Procedures / Wind Correction Techniques
______ Instrument Flight Patterns while Tracking To
______ or From a VOR on a Specified Radial

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic knowledge of VOR procedures. The student will maintain or roll out on assigned headings ±10°, maintain or level off at assigned altitudes ±100’, maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. While tracking a specified VOR course, the student will apply proper correction to maintain the course, allowing no more than 3/4 scale deviation on the CDI.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 1: Review Segments as Needed
Vol 3: Segment 8 (DVD 9)
STAGE I
LESSON 13
DUAL - GROUND
GPS / AUTOPILOT
PRINCIPLES

DATE_________          GRADE (Circle One)  S  U  I
STUDENT NAME _____________ STUDENT SIGNATURE________________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE_____________

DISCUSSION: (1.2) ___________
CRS TOTALS: (F/I/D/FS) ____/____/____/____

Notes:

-----------------------------

Lesson Objective:

During this lesson, the instructor will discuss the principles of GPS operation.

Content:

Lesson Introduction

- GPS Principles of Operation
- Receiver Autonomous Integrity Monitoring (RAIM)
- GPS Errors & Irregularities
- Wide Area Augmentation System (WAAS)
- GPS Modes of Operation
- GPS Use Under IFR
- GPS CDI Scaling (En Route, Terminal, & Approach)
- GPS Waypoints
- GPS Direct-To Operations
- GPS Flight Plan Operations

Lesson Introduction

- GPS Nearest Functions
- Substitution of GPS for Other Navigation Radios Under IFR
- Orientation, Position, and Waypoint Passage / Sequencing
- GPS Course Intercepting and Tracking Procedures / Wind Correction Techniques
- Computer Based GPS Procedures Simulator (from Appropriate GPS Manufacturer)
- Installed GPS Specific Procedures

Completion Standards:

At the completion of this lesson, the student will have knowledge of GPS operation.

Additional Study:

FAA-H-8083-15-IFH
AIM
Appropriate Manuals for the Installed GPS
Instrument Rating Airman Certification Standards
Vol 6: Segment 12 (DVD 13)
STAGE I
LESSON 14
DUAL - FTD / ATD

DATE ______ ACFT/FTD ID ______ GRADE (Circle One) S U I
STUDENT NAME __________ STUDENT SIGNATURE __________
INSTRUCTOR # __________ INSTRUCTOR SIGNATURE __________
FTD/ATD/SIM: (1.5) _______ DISCUSSION: (0.4) _______
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to GPS procedures in an FTD or ATD. VOR procedures will be reviewed as needed.

CONTENT:

Lesson Introduction

_____ GPS Direct-To Operations
_____ GPS Flight Plan Operations
_____ GPS Nearest Functions
_____ GPS Orientation, Position, and Waypoint
_____ Passage / Sequencing
_____ GPS Course Intercepting and Tracking
_____ Procedures / Wind Correction Techniques
_____ Installed GPS Specific Procedures

Lesson Review

_____ VOR Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a working knowledge of GPS and VOR procedures. The student will maintain headings ±10°, maintain altitudes ±100’, maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. While tracking a specified course, the student will apply proper correction to maintain the course, allowing no more than 3/4 scale deviation on the CDI.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 6: Segment 12 (DVD 13)

Notes:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
STAGE I
LESSON 15
DUAL - GROUND
AUTOPilot PRINCIPLES

During this lesson, the instructor will discuss the principles of autopilot operation.

CONTENT:

Lesson Introduction

Autopilot Principles of Operation
Autopilot Errors & Irregularities
Autopilot Disconnect Options

Lesson Introduction

Autopilot Limitations
Installed Autopilot Specific Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will have knowledge of autopilot operation.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
AIM
Appropriate Manuals for the Installed Autopilot
Instrument Rating Airman Certification Standards
Vol 6: Segment 4 (DVD 5)
STAGE I
LESSON 16
DUAL - AIRCRAFT

DATE_________ ACFT/FTD ID_________ GRADE (Circle One) S U I
STUDENT NAME _______________ STUDENT SIGNATURE _______________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE _______________
FLIGHT TIME: (1.8) _______ DISCUSSION: (0.4) _______
INSTRUMENT: (1.6) _______ CRS TOTALS: (F/I/D/FS) __ / __ / __ __

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to GPS and autopilot procedures and review VOR procedures with the student in the training aircraft.

CONTENT:

Lesson Introduction

____ GPS Direct-To Operations
____ GPS Flight Plan Operations
____ GPS Orientation, Position, and Waypoint Passage / Sequencing
____ GPS Course Intercepting and Tracking Procedures / Wind Correction Techniques
____ Autopilot Before Takeoff Checks
____ Autopilot Wing Leveler, Heading, & Navigation Modes (as appropriate)
____ Autopilot Climb, Descent, & Altitude Hold Modes (as appropriate)
____ Autopilot Mode Transitions
____ Autopilot Disconnect Options
____ Instrument Flight Patterns with the Autopilot

Lesson Review

____ VOR Procedures
____ Partial Panel Instrument Flight

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a working knowledge of VOR procedures, and have a basic knowledge of GPS and autopilot procedures. The student will maintain headings ±10°, maintain altitudes ±100’, maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. While tracking a specified course, the student will apply proper correction to maintain the course, allowing no more than 3/4 scale deviation on the CDI.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 1: Segment 10 (DVD 11)
Vol 6: Segments 4 & 12 (DVD 5 & 13)

Notes:

____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
Stage I
Lesson 17
Dual - Ground
FAR/AIM

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to the Federal Aviation Regulations (FARs) contained in 14 CFR and the sections of the Aeronautical Information Manual (AIM) that pertain to instrument flight.

CONTENT:

Lesson Introduction

14 CFR Regulations - Applicable to IFR Flight

Part 1

Part 43

Part 61

Part 91

Part 97

NTSB 830

AIM - Chapters Applicable to IFR Flight

Chapter 1

Chapter 2

Chapter 3

Chapter 4

Chapter 5

Chapter 6

Chapter 7

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic knowledge of the regulations and the sections of the AIM applicable to instrument flight.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
FAR - 14 CFR Aviation Regulations
AIM
Instrument Rating Airman Certification Standards
Vol 1: Segments 1 (DVD 1-2)
Vol 7: Segments 1-13 (DVD 1-14)
Stage I
Lesson 18
DUAL - AIRCRAFT

![Training Course Outline Page 19](image)

**LESSON OBJECTIVE:**

During this lesson, the instructor will review VOR, GPS, and autopilot procedures, steep turns by reference to instruments, instrument flight patterns, and partial panel instrument flight with the student in the training aircraft.

**CONTENT:**

Lesson Review

- Steep Turns
- VOR Procedures
- GPS Procedures
- Autopilot Procedures

Lesson Review

- Partial Panel Instrument Flight
- Instrument Flight Patterns with Autopilot
- Instrument Flight Patterns while Tracking
- VOR Radial (without Autopilot)

**COMPLETION STANDARDS:**

At the completion of this lesson, the student will be able to perform 45° bank steep turns (180° or 360°) by reference to instruments and have a working knowledge of VOR, GPS, and autopilot procedures. The student will maintain headings ±10°, maintain altitudes ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. While tracking a specified course, the student will apply proper correction to maintain the course, allowing no more than 3/4 scale deviation on the CDI.

**ADDITIONAL STUDY:**

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 1: Review Segments as Needed
Vol 6: Segments 4 & 12 (DVD 5 & 13)

---

**Notes:**

________________________________________

________________________________________

________________________________________

________________________________________

________________________________________
PRE-STAGE CHECK – TIME SUMMARY

This page is intended to be used by the student’s flight instructor to summarize the times accumulated through this course of instruction and determine that the times are sufficient for the stage requirements. The check instructor should verify that these times are acceptable for completion of the stage.

Part 141 Note: The instrument time in an approved FTD or AATD used to meet the minimum requirements of Part 141 may not exceed 40% of the total flight training hours required for the course of instruction. Training time in an approved BATD cannot exceed 25% of the total flight training hours required for the course of instruction. The limit is raised to 50% for an approved full flight simulator or a combination of a simulator, an FTD, an AATD, and a BATD (FTD, AATD & BATD time limits still apply).

DATE___________ STUDENT NAME _____________ STUDENT SIGNATURE_______________

INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE_____________

STAGE TOTALS

FLIGHT TIME: ________ (In stage only.)

GROUND/DISCUSSION: ________ (Be sure to include the Ground Lesson times.)

FTD/ATD/SIM: ________ (In stage only.)

INSTRUMENT: ________ (In flight only.)
STAGE I
LESSON 19
STAGE I CHECK

DATE___________ ACFT/FTD ID_________ GRADE (Circle One)  S  U  I
STUDENT NAME ______________ STUDENT SIGNATURE ______________
INSTRUCTOR # ______________ INSTRUCTOR SIGNATURE ______________
FLIGHT TIME: (1.4) _______ DISCUSSION: (1.0) _______
INSTRUMENT: (1.2) _______ CRS TOTALS: (F/I/D/FS) / / / / 

LESSON OBJECTIVE:

This stage check will determine that the student has accomplished the objectives of Stage I.

CONTENT:

Lesson Review

ORAL

_____ Instrument Flight Deck Check
_____ Aircraft Systems
_____ Aircraft Flight Instruments
_____ IFR Required Equipment
_____ Inspection Requirements for IFR Flight
_____ Control & Performance Instruments
_____ Primary & Supporting Instruments
_____ Magnetic Compass Errors

FLIGHT

_____ Instrument Takeoff
_____ Steep Turns
_____ Recovery from Unusual Flight Attitudes
_____ VOR Procedures
_____ GPS Procedures
_____ Autopilot Procedures
_____ Partial Panel Instrument Flight

COMPLETION STANDARDS:

At the completion of this lesson, the student will have proficiency in basic attitude instrument flight as well as VOR, GPS, and autopilot procedures. The student will maintain headings ±10°, maintain altitudes ±100’, maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. While tracking a specified course, the student will apply proper correction to maintain the course, allowing no more than 3/4 scale deviation on the CDI.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 1: Review Segments as Needed
Vol 6: Review Segments as Needed
STAGE II

STAGE OBJECTIVE:

During this stage, the student will learn and refine basic radio navigation procedures, including the intercepting and tracking of courses through the use of VORs, Localizers, and other navigation systems. The student will also learn to perform instrument approaches.

STAGE COMPLETION STANDARDS:

The student will demonstrate positional awareness and the ability to accurately navigate the aircraft by reference to navigation systems. At the completion of this stage the student will be able to perform local instrument flight operations to the current Instrument Rating Airman Certification Standards.
STAGE II
LESSON 20
DUAL - GROUND
HOLDING & IFR CLEARANCES

DATE_________          GRADE (Circle One)  S  U  I
STUDENT NAME _____________ STUDENT SIGNATURE_______________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE_____________
DISCUSSION: (1.2) ___________
CRS TOTALS: (F/I/D/FS) ____/____/____/____

LESSON OBJECTIVE:
During this lesson, the instructor will introduce the student to holding and the associated procedures along with IFR clearances.

CONTENT:

Lesson Introduction

_____ Holding
_____ Purpose of Holding
_____ Holding Airspace
_____ Legs of a Holding Pattern
_____ Standard vs. Nonstandard Holding Patterns
_____ Maximum Holding Speeds
_____ Holding Entry Procedures
_____ Holding Wind Correction Techniques
_____ Holding Clearances
_____ Fix Crossing Check (ST's)
_____ Timing
_____ Use of DME while Holding

Lesson Introduction

_____ Use of GPS while Holding
_____ Intersection Holding
_____ Communication Requirements
_____ Pilot Responsibilities
_____ ATC Responsibilities
_____ Elements of an IFR Clearance
_____ Practical Methods for Copying an IFR Clearance
_____ Datalink IFR Clearances
_____ IFR Clearance Compliance, Limits, and Void Times

COMPLETION STANDARDS:
At the completion of this lesson, the student will have an understanding of holding procedures and IFR clearances.

ADDITIONAL STUDY:
FAA-H-8083-15-IFH
AIM
Instrument Rating Airman Certification Standards
Vol 2: Segments 3-8 (DVD 4-9)
Vol 3: Segment 13 (DVD 14)
Vol 7: Segment 11 (DVD 12)

Notes:
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________

Training Course Outline   Page 23
LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to holding procedures, and IFR clearances.

CONTENT:

Lesson Introduction

- Copying / Understanding IFR Clearances
- ATC Communications
- Holding Pattern Entries
- Holding Patterns (VOR/GPS)

Lesson Introduction

- Fix Crossing Check (5T’s)
- Timing
- Use of DME while Holding
- Intersection Holding

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic understanding of holding procedures and IFR clearances. The student will maintain headings ±10°, maintain altitudes ±100’, maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. While tracking a specified course, the student will apply proper correction to maintain the course, allowing no more than 3/4 scale deviation on the CDI.

ADDITIONAL STUDY:

FAA-H-8261-1-IPH
FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 3: Segment 13 (DVD 14)
Vol 7: Segment 11 (DVD 12)
STAGE II
LESSON 22
DUAL - GROUND
TERMINAL
PROCEDURES

During this lesson, the instructor will introduce the student to Terminal Procedures Publications.

CONTENT:

Lesson Introduction

Terminal Procedures Publication
Aircraft Approach Categories
Inoperative Components or Visual Aids Table
Airport Surface Hot Spots
IFR Take-Off Minimums
Declared Distance Information
Published Departure Procedures
Climb Via SID Clearance
ATC Communication and Compliance with Departure Instructions
Situational Awareness during Departure
Climb & Descent Tables
IFR Alternate Minimums

Lesson Introduction

Radar Instrument Approach Minimums
Pilot Briefing Information Section
Plan View
Profile View
Minimums Section
Airport Sketch & Airport Diagram
Missed Approach Section
Minimum Safe Altitude
Standard vs Expanded Circling Radii
Cold Temperature Restricted Airports / Altitude Corrections
Descent Planning
Standard Terminal Arrival Procedures
Descend Via STAR Clearance

COMPLETION STANDARDS:

At the completion of this lesson, the student will have an understanding of terminal procedures.

ADDITIONAL STUDY:

FAA-H-8261-1-IPH
FAA-H-8083-15-IFH
AIM
Instrument Rating Airman Certification Standards
Vol 3: Segments 1-2 (DVD 1-3)
STAGE II
LESSON 23
DUAL - GROUND
INSTRUMENT
APPROACHES

LESSON OBJECTIVE:
During this lesson, the instructor will introduce the student to various types of instrument approaches without a glideslope.

CONTENT:

Lesson Introduction

Nonprecision Instrument Approaches
Approach Briefing
Missed Approach Procedures
Visibility Minimums
Timed Approaches
Radar Approaches
Visual Approaches

Lesson Introduction

Contact Approaches
Charted Visual Flight Procedures
Visual Descent Point
Circling Approaches
Vectored Approaches
Terminal Arrival Area (TAA) Approaches
Lighting Systems

COMPLETION STANDARDS:
At the completion of this lesson, the student will have an understanding of nonprecision approaches.

ADDITIONAL STUDY:
FAA-H-8261-1-IPH
FAA-H-8083-15-IFH
AIM
Vol 3: Segments 6-17 (DVD 7-18)
STAGE II
LESSON 24
DUAL - FTD / ATD

DATE__________ ACFT/FTD ID_________ GRADE (Circle One) S U I
STUDENT NAME ______________ STUDENT SIGNATURE ______________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE ______________

FTD/ATD/SIM: (1.5) ______ DISCUSSION: (0.4) ______
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to nonprecision approaches and missed approach procedures. Holding procedures will be reviewed.

CONTENT:

Lesson Introduction

- Departure Vectors to Filed Route
- Climb Via SID Operations
- IFR Navigation
- Approach Setup and Briefing
- Descend Via STAR Operations
- VOR Approach
- GPS Approach (LNAV)
- Missed Approach Procedures
- Landing from an Approach

Lesson Review

- Copying / Understanding IFR Clearances
- ATC Communications
- Holding Pattern Entries
- Holding Patterns (VOR/GPS)

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic understanding of holding procedures, nonprecision approach procedures, and missed approach procedures. The student will maintain headings ±10°, maintain altitudes, other than flight at MDA, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. During nonprecision approaches the student will maintain the MDA, when reached, +200/-0 feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8261-1-IPH
FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 3: Segments 8-13 (DVD 9-14)
Vol 4: Review Segments 1-7 (DVD 1-8) as Needed
Vol 7: Segment 11 (DVD 12)

Notes:
STAGE II
LESSON 25
DUAL - GROUND
ATC SYSTEM

<table>
<thead>
<tr>
<th>DATE_________</th>
<th>GRADE (Circle One) S  U  I</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDENT NAME</td>
<td>STUDENT SIGNATURE____________</td>
</tr>
<tr>
<td>INSTRUCTOR #</td>
<td>INSTRUCTOR SIGNATURE_________</td>
</tr>
</tbody>
</table>

DISCUSSION: (1.2) ___________

CRS TOTALS: (F/I/D/FS) ____/____/____/____

Notes:

During this lesson, the instructor will introduce the student to the structure of the Air Traffic Control (ATC) system and its applicability to IFR flight.

CONTENT:

<table>
<thead>
<tr>
<th>Lesson Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearance Delivery</td>
</tr>
<tr>
<td>Ground Control</td>
</tr>
<tr>
<td>Tower Control (Local Control)</td>
</tr>
<tr>
<td>Terminal Approach Control Facilities</td>
</tr>
<tr>
<td>Approach Control</td>
</tr>
<tr>
<td>Departure Control</td>
</tr>
<tr>
<td>Final Controller</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lesson Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Route Traffic Control Centers (ARTCC)</td>
</tr>
<tr>
<td>Tower En Route Control (TEC)</td>
</tr>
<tr>
<td>Federal Airways</td>
</tr>
<tr>
<td>Uncontrolled Airspace</td>
</tr>
<tr>
<td>IFR Flight Planning and Filing Procedures</td>
</tr>
<tr>
<td>Closing an IFR Flight Plan</td>
</tr>
</tbody>
</table>

COMPLETION STANDARDS:

At the completion of this lesson, the student will have an understanding of the ATC structure and how it is structured to provide safe and efficient flow of IFR traffic.

ADDITIONAL STUDY:

FAA-H-8261-1-IPH
FAA-H-8083-15-IFH
AIM
Instrument Rating Airman Certification Standards
Vol 2: Segments 1-12 (DVD 1-13)
Vol 7: Segment 11 (DVD 12)
**Stage II**

**Lesson 26**

**Dual - Aircraft**

<table>
<thead>
<tr>
<th>Date</th>
<th>ACFT/FTD ID</th>
<th>Grade (Circle One)</th>
<th>S</th>
<th>U</th>
<th>I</th>
</tr>
</thead>
</table>

**Student Name**

**Student Signature**

**Instructor #**

**Instructor Signature**

**Crs Totals:** (F/I/D/FS) ______/_____/_____/_____

**Notes:**

**Stage II**

**Lesson Objective:**

During this lesson, the instructor will review IFR navigation, ATC communication procedures, obtaining IFR clearances, performing an approach brief, and executing nonprecision instrument approaches with the student in the training aircraft.

**Content:**

<table>
<thead>
<tr>
<th>Lesson Introduction</th>
<th>Lesson Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filing an IFR Flight Plan</td>
<td>Holding Procedures</td>
</tr>
<tr>
<td>Copying / Understanding IFR Clearances</td>
<td>Descend Via STAR Operations</td>
</tr>
<tr>
<td>ATC Communications</td>
<td>Approach Setup and Briefing</td>
</tr>
<tr>
<td>Departure Vectors to Filed Route or Pilot</td>
<td>VOR Approach</td>
</tr>
<tr>
<td>Nav to Filed Route</td>
<td>GPS Approach (LNAV)</td>
</tr>
<tr>
<td>Climb Via SID Operations</td>
<td>Missed Approach Procedures</td>
</tr>
<tr>
<td>IFR Navigation</td>
<td></td>
</tr>
</tbody>
</table>

**Completion Standards:**

At the completion of this lesson, the student will be able to navigate, hold en route, and perform VOR and GPS approaches with minimal instructor assistance. The student should also be able to perform ATC communications with minimal instructor assistance. The student will maintain headings ±10°, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. During nonprecision approaches the student will maintain the MDA, when reached, +200/-0 feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment.

**Additional Study:**

- FAA-H-8261-1-IPH
- FAA-H-8083-15-IFH
- Instrument Rating Airman Certification Standards
  Vol 3: Segments 6-12 (DVD 7-13)
Stage II
LESSON 27
DUAL - GROUND
PILOT / CONTROLLER RESPONSIBILITIES

DATE_________          GRADE (Circle One)  S  U  I
STUDENT NAME _____________ STUDENT SIGNATURE_____________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE_____________
DISCUSSION: (1.2) ___________
CRS TOTALS: (F/I/D/FS) ____/____/____/____

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to the responsibilities of the Pilot and the Air Traffic Controller.

CONTENT:

Lesson Introduction  Lesson Introduction

Air Traffic Clearance  Wake Turbulence Separations
Contact Approach  Compulsory Reporting Points
Visual Approach  Loss of Communications
Instrument Approach  Land and Hold Short Operations
Missed Approach  Practice Instrument Approaches
Radar Vectors  IFR Separation Standards
Safety Alerts  See and Avoid
Speed Adjustments  Traffic Advisories
Visual Separation  VFR-On-Top
Instrument Departures  Minimum Fuel Advisory

COMPLETION STANDARDS:

At the completion of this lesson, the student will have an understanding of pilot and controller responsibilities.

ADDITIONAL STUDY:

FAA-H-8261-1-IPH
FAA-H-8083-15-IFH
AIM
Instrument Rating Airman Certification Standards
Vol 2: Segments 1-12 (DVD 1-13)
Vol 3: Segments 6-7 (DVD 7-8)
Lesson Introduction

Localizer Principles of Operation
Glideslope Principles of Operation
Marker Beacons
ILS Receiving Equipment
ILS Categories
ILS Errors & Irregularities

Localizer and Glideslope Critical Areas
Simplified Directional Facility
Localizer-Type Directional Aid
Precision Instrument Approaches
Back Course Approaches
APV Instrument Approaches

Completion Standards:

At the completion of this lesson, the student will have a thorough knowledge of the ILS, LDA, SDF, and WAAS systems and their operating principles.

Additional Study:

FAA-H-8261-1-IPH
FAA-H-8083-15-IFH
AIM
Instrument Rating Airman Certification Standards
Vol 3: Segments 1-4 (DVD 1-5)
Stage II
LESSON 29
DUAL - FTD / ATD

DATE__________ ACFT/FTD ID_________ GRADE (Circle One)  S  U  I
STUDENT NAME ______________ STUDENT SIGNATURE_____________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE_____________

FTD/ATD/SIM: (1.5) _______ DISCUSSION: (0.4) _______
CRS TOTALS: (F/I/D/FS) ___ / ___ / ___ / ___

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to ILS and back course approach procedures.

CONTENT:

Lesson Introduction Lesson Review

_____ ILS Approach (Full & Vectored) _____ Missed Approach Procedures
_____ Landing from an ILS Approach
_____ Back Course Approach

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic understanding of ILS and back course approach procedures. The student will maintain headings ±10°, maintain altitudes, other than during the final approach segment, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. During precision approaches the student will avoid descents below the DA/DH before initiating a missed approach procedure or transitioning to a normal landing approach and allow no more than a three-quarter-scale deflection of the localizer or glideslope while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8261-1-IPH
FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 3: Segments 1-4 (DVD 1-5)
Vol 4: Segments 8-9 (DVD 9-10)

Notes:

__________________________________________
__________________________________________
__________________________________________
__________________________________________
__________________________________________
STAGE II
LESSON 30
DUAL - AIRCRAFT

DATE__________ ACFT/FTD ID_________ GRADE (Circle One) S U I
STUDENT NAME _____________ STUDENT SIGNATURE _____________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE _____________
FLIGHT TIME: (2.0) _______ DISCUSSION: (0.4) _______
INSTRUMENT: (1.8) _______ CRS TOTALS: (F/I/D/FS) / / / 

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to ILS, back course, and APV approach procedures in the training aircraft. Holding, VOR and GPS approaches, and missed approach procedures will be reviewed.

CONTENT:

Lesson Introduction Lesson Review

_____ ILS Approach
_____ Back Course Approach
_____ APV Approach (LPV or LNAV/VNAV)

_____ Filing an IFR Flight Plan
_____ Copying / Understanding IFR Clearances
_____ ATC Communications
_____ IFR Navigation
_____ Holding Procedures
_____ Approach Setup and Brief
_____ VOR Approach
_____ GPS Approach (LNAV)
_____ Missed Approach Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to navigate, hold en route, and perform ILS, VOR, and GPS approaches with minimal instructor assistance. The student should also be able to perform ATC communications with minimal instructor assistance. The student will maintain headings ±10°, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. During nonprecision approaches the student will maintain the MDA, when reached, +200/-0 feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment. During precision and APV approaches the student will avoid descents below the DA/DH before initiating a missed approach procedure or transitioning to a normal landing approach and allow no more than a three-quarter-scale deflection of the CDI or glideslope while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8261-1-IPH  Vol 3: Segments 3-12 (DVD 4-13)
Instrument Rating Airman Certification Standards

Notes:

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
STAGE II
LESSON 31
DUAL - GROUND
AUTOPilot
APPROACHES & DME

DATE_________  GRADE (Circle One)  S  U  I
STUDENT NAME _____________ STUDENT SIGNATURE_____________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE_____________

DISCUSSION: (1.2) ___________
CRS TOTALS: (F/I/D/FS) ____/____/____/____

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to distance measuring equipment, the use of the autopilot for approaches, and instrument approaches with loss of primary flight instrument indicators (partial panel).

CONTENT:

Lesson Introduction  Lesson Introduction

_____ Autopilot Approach Operations & Limitations  _____ DME Principles of Operation
_____ Nonprecision Approaches with an Autopilot  _____ DME Errors & Irregularities
_____ APV Approaches with an Autopilot  _____ DME Arc Interception
_____ Precision Approaches with an Autopilot  _____ DME Arc Tracking
_____ Back Course Approaches with an Autopilot  _____ Use of GPS as Substitute for DME
_____ Missed Approach Procedures with an Autopilot  _____ Instrument Approaches with Loss of Primary
_________ Holding Procedures with an Autopilot  Flight Instrument Indicators (Partial Panel)

COMPLETION STANDARDS:

At the completion of this lesson, the student will have an understanding of distance measuring equipment, the use of the autopilot for approaches, and partial panel approaches.

ADDITIONAL STUDY:

FAA-H-8261-1-IPH
FAA-H-8083-15-IFH
AIM
Instrument Rating Airman Certification Standards
Vol 3: Segments 15-17 (DVD 16-18)
Vol 6: Segments 2-4 (DVD 3-5)
STAGE II  
LESSON 32  
DUAL - FTD / ATD

<table>
<thead>
<tr>
<th>DATE__________</th>
<th>ACFT/FTD ID__________</th>
<th>GRADE (Circle One)</th>
<th>S</th>
<th>U</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDENT NAME ___________</td>
<td>STUDENT SIGNATURE ___________</td>
<td>INSTRUCTOR # ___________</td>
<td>INSTRUCTOR SIGNATURE ___________</td>
<td>FTD/ATD/SIM: (1.5) _______</td>
<td>DISCUSSION: (0.4) _______</td>
</tr>
</tbody>
</table>

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to partial panel approaches, DME arcs, and circle to land procedures.

CONTENT:

<table>
<thead>
<tr>
<th>Lesson Introduction</th>
<th>Lesson Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>_______ Nonprecision Approach with Loss of Primary Flight Instrument Indicators (Partial Panel)</td>
<td>_______ DME Arc</td>
</tr>
<tr>
<td>_______ Precision Approach with Loss of Primary Flight Instrument Indicators (Partial Panel)</td>
<td>_______ Circle to Land Procedures</td>
</tr>
</tbody>
</table>

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to perform partial panel VOR approaches, and DME arcs. The student will maintain headings ±10°, maintain altitudes, other than flight at MDA, ±100’, maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. During nonprecision approaches the student will maintain the MDA, when reached, +200/-0 feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8261-1-IPH
FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards Vol 2: Review Segments as Needed Vol 3: Segments 14-17 (DVD 15-18)
STAGE II
LESSON 33
DUAL - AIRCRAFT

DATE___________ ACFT/FTD ID_________ GRADE (Circle One)  S  U  I
STUDENT NAME _______________ STUDENT SIGNATURE_____________
INSTRUCTOR # _______________ INSTRUCTOR SIGNATURE_____________

FLIGHT TIME: (2.0) _______ DISCUSSION: (0.4) _______
INSTRUMENT: (1.8) _______ CRS TOTALS: (F/I/D/FS) / / / 

LESSON OBJECTIVE:

During this lesson, the instructor will review partial panel approaches, DME arcs, nonprecision approaches, precision approaches, and circle to land procedures with the student.

CONTENT:

Lesson Introduction

- Nonprecision Approach with Loss of Primary Flight Instrument Indicators (Partial Panel)
- APV Approach with Loss of Primary Flight Instrument Indicators (Partial Panel)
- Precision Approach with Loss of Primary Flight Instrument Indicators (Partial Panel)
- DME Arcs
- Circle to Land Procedures

Lesson Review

- Nonprecision Approaches - Full & Vectored (Full Panel)
- APV Approaches - Full & Vectored (Full Panel)
- Precision Approaches - Full & Vectored (Full Panel)

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to perform nonprecision approaches, precision approaches, circling procedures, and DME arcs with minimal instructor assistance. The student will maintain headings ±10°, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100’, maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. During nonprecision approaches the student will maintain the MDA, when reached, +100/-0 feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment. During precision and APV approaches the student will avoid descents below the DA/DH before initiating a missed approach procedure or transitioning to a normal landing approach and allow no more than a three-quarter-scale deflection of the CDI or glideslope while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8261-1-IPH
FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 3: Review Segments as Needed

Notes:

________________________________________________________
________________________________________________________
________________________________________________________
________________________________________________________
________________________________________________________
LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to weather conditions associated with icing.

CONTENT:

Lesson Introduction

- Required Conditions for Ice Formation
- Formation of Frost
- Formation of Clear Ice
- Formation of Rime Ice
- Formation of Mixed Ice
- Icing Intensities
- PIREPs Specific to Icing

Lesson Introduction

- AIRMETs Specific to Icing
- SIGMETs Specific to Icing
- Winds / Temps Aloft Forecast
- Deicing and Anti-Icing Equipment
- Icing Avoidance Strategies
- Inadvertent Icing Encounter Strategies
- Flight in Known Icing Conditions

COMPLETION STANDARDS:

At the completion of this lesson, the student will have an understanding of icing associated with IFR flight.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
AIM
Instrument Rating Airman Certification Standards
AC 00-6-AvWx - Aviation Weather
AC 00-45-AvWxSvc - Aviation Weather Services
Vol 5: Segments 1-4 (DVD 1-5)
# Lesson 35

## Dual - Ground

### Stage II

#### Thunderstorms

<table>
<thead>
<tr>
<th>CONTENT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson Introduction</td>
<td>Lesson Introduction</td>
</tr>
<tr>
<td>Conditions Required for Thunderstorms</td>
<td>Hazards Associated with Thunderstorms</td>
</tr>
<tr>
<td>Thunderstorm Lifecycle</td>
<td>Forecasts Associated with Thunderstorms</td>
</tr>
<tr>
<td>Air Mass Thunderstorms</td>
<td>Radar Summary Chart</td>
</tr>
<tr>
<td>Steady State Thunderstorms</td>
<td>Convective SIGMETs</td>
</tr>
<tr>
<td>Squall Line Thunderstorms</td>
<td>Thunderstorm Avoidance Strategies</td>
</tr>
<tr>
<td>Embedded Thunderstorms</td>
<td>Inadvertent Thunderstorm Encounter</td>
</tr>
<tr>
<td>Frontal Thunderstorms</td>
<td>Strategies</td>
</tr>
</tbody>
</table>

### Completion Standards:

At the completion of this lesson, the student will have an understanding of thunderstorms and their associated phenomena.

### ADDITIONAL STUDY:

- FAA-H-8083-15-IFH
- AIM
- Instrument Rating Airman Certification Standards
- AC 00-6-AvWx
- AC 00-45-AvWxSvc
- Vol 5: Segments 4-13 (DVD 5-14)
STAGE II
LESSON 36
DUAL - AIRCRAFT

DATE__________ ACFT/FTD ID__________ GRADE (Circle One)  S  U  I
STUDENT NAME ______________ STUDENT SIGNATURE ________________
INSTRUCTOR # ______________ INSTRUCTOR SIGNATURE ______________

FLIGHT TIME: (2.0) ______ DISCUSSION: (0.4) ______
INSTRUMENT: (1.8) ______ CRS TOTALS: (F/I/D/FS) _____ / _____ / _____ / _____

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to approaches using the autopilot and review nonprecision, APV, and precision approaches, holding, and missed approach procedures with the student.

CONTENT:

Lesson Introduction

- Nonprecision Approach with an Autopilot
- APV Approach with an Autopilot
- Precision Approach with an Autopilot
- Back Course Approach with an Autopilot
- Missed Approach Procedures with an Autopilot

Lesson Review

- Nonprecision Approach - Full & Vectored
  (Full & Partial Panel)
- APV Approach - Full & Vectored (Full & Partial Panel)
- Precision Approach - Full & Vectored (Full & Partial Panel)
- Back Course Approach
- Holding Procedures
- ATC Procedures
- Missed Approach Procedures
- Circle To Land Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to perform instrument approaches with minimal instructor assistance. The student will maintain headings ±10°, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100’, maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. During nonprecision approaches the student will maintain the MDA, when reached, +100/-0 feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment. During precision and APV approaches the student will avoid descents below the DA/DH before initiating a missed approach procedure or transitioning to a normal landing approach and allow no more than a three-quarter-scale deflection of the CDI or glideslope while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 3: Review Segments as Needed
Vol 6: Segments 2-4 (DVD 3-5)

Notes:

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

Training Course Outline
STAGE II
LESSON 37
DUAL - GROUND FORECASTS & REPORTS

DATE_________          GRADE (Circle One)  S  U  I
STUDENT NAME _____________ STUDENT SIGNATURE_____________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE_____________
DISCUSSION: (1.2) ___________
CRS TOTALS: (F/I/D/FS) ____/____/____/____

LESSON OBJECTIVE:

During this lesson, the instructor will review weather forecasts with the student.

CONTENT:

Lesson Introduction

Graphical Forecasts for Aviation
Terminal Aerodrome Forecasts
METARs
Winds / Temperatures Aloft
Pilot Reports
Radar Summary Chart
Surface Analysis Chart
Weather Depiction Chart / Ceiling and Visibility Analysis (CVA)

Lesson Introduction

Freezing Level Chart
Upper Level Charts
Significant Weather Prognostic Charts
SIGMETs, AIRMETs, & Convective SIGMETs
Recognition of Critical Weather Situations
Windshear Avoidance

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a thorough understanding of weather forecasts.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
AIM
Instrument Rating Practical Standard
AC 00-6-AvWx
AC 00-45-AvWxSvc
Vol 7: Segments 1-3 (DVD 1-4)

Notes:

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
STAGE II
LESSON 38
DUAL - AIRCRAFT

DATE__________ ACFT/FTD ID__________ GRADE (Circle One) S U I
STUDENT NAME ______________ STUDENT SIGNATURE ______________
INSTRUCTOR # ______________ INSTRUCTOR SIGNATURE ______________
FLIGHT TIME: (2.0) ______ DISCUSSION: (0.4) ______
INSTRUMENT: (1.8) ______ CRS TOTALS: (F/I/D/FS) / / / 

LESSON OBJECTIVE:

During this lesson, the instructor will review approaches using the autopilot, nonprecision approaches, APV approaches, precision approaches, holding, and missed approach procedures with the student.

CONTENT:

Lesson Review

- Nonprecision Approach with an Autopilot
- Precision Approach with an Autopilot
- Missed Approach Procedures with an Autopilot
- Nonprecision Approach - Full & Vectored (Full & Partial Panel)
- APV Approach - Full & Vectored (Full & Partial Panel)

Lesson Review

- Precision Approach - Full & Vectored (Full & Partial Panel)
- Back Course Approach
- Holding Procedures
- ATC Communications
- Missed Approach Procedures
- Circle to Land Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to perform instrument approaches with minimal instructor assistance. The student will maintain headings ±10°, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. During nonprecision approaches the student will maintain the MDA, when reached, +100/-0 feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment. During precision and APV approaches the student will avoid descents below the DA/DH before initiating a missed approach procedure or transitioning to a normal landing approach and allow no more than a three-quarter-scale deflection of the CDI or glideslope while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 3: Review Segments as Needed
Vol 4: Segments 10-13 (DVD 11-14)
Vol 5: Segments 10-13 (DVD 11-14)
PRE-STAGE CHECK – TIME SUMMARY

This page is intended to be used by the student’s flight instructor to summarize the times accumulated through this course of instruction and determine that the times are sufficient for the stage requirements. The check instructor should verify that these times are acceptable for completion of the stage.

Part 141 Note: The instrument time in an approved FTD or AATD used to meet the minimum requirements of Part 141 may not exceed 40% of the total flight training hours required for the course of instruction. Training time in an approved BATD cannot exceed 25% of the total flight training hours required for the course of instruction. The limit is raised to 50% for an approved full flight simulator or a combination of a simulator, an FTD, an AATD, and a BATD (FTD, AATD & BATD time limits still apply).

DATE____________ STUDENT NAME _____________ STUDENT SIGNATURE___________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE_____________

STAGE TOTALS
FLIGHT TIME: ________ (In stage only.)
GROUND/DISCUSSION: ________ (Be sure to include the Ground Lesson times.)
FTD/ATD/SIM: ________ (In stage only.)
INSTRUMENT: ________ (In flight only.)

COURSE TOTALS
FLIGHT TIME: ________ (In course only.)
GROUND/DISCUSSION: ________ (Be sure to include the Ground Lesson times.)
FTD/ATD/SIM: ________ (In course only.)
INSTRUMENT: ________ (In flight only.)
STAGE II
LESSON 39
STAGE II CHECK

DATE____________ ACFT/FTD ID_______ GRADE (Circle One)  S  U  I
STUDENT NAME _____________ STUDENT SIGNATURE_________________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE_________________

FLIGHT TIME: (2.0) _______ DISCUSSION: (1.0) _______
INSTRUMENT: (1.8) ____ CRS TOTALS: (F/I/D/FS) / / / 

LESSON OBJECTIVE:

During this lesson, the student will complete a stage check covering approaches and holding procedures.

CONTENT:

Lesson Review

ORAL

_____ Weather Information
_____ Holding Procedures
_____ Terminal Procedures Publication
_____ Approach Procedures
_____ Published Departure Procedures
_____ Standard Terminal Arrival Procedures
_____ Instrument Approaches with Loss of Primary Flight Instrument Indicators (Partial Panel)

Lesson Review

FLIGHT

_____ ATC Clearances
_____ Clearance Compliance
_____ Holding Procedures
_____ Nonprecision Approach
_____ APV Approach
_____ Precision Approach
_____ Missed Approach Procedures
_____ Nonprecision Approach with Loss of Primary Flight Instrument Indicators
_____ APV Approach with Loss of Primary Flight Instrument Indicators
_____ Precision Approach with Loss of Primary Flight Instrument Indicators
_____ Nonprecision Approach with Autopilot
_____ Missed Approach Procedures with an Autopilot
_____ Circling Approach
_____ Landing from Straight-In / Circling Approach

COMPLETION STANDARDS:

The student shall perform all maneuvers to the standards established by the Instrument Rating Airman Certification Standards. The student should demonstrate at least the number of approaches indicated in the ACS. Additional approaches within the capability of the aircraft are desirable.

ADDITIONAL STUDY:

Instrument Rating Airman Certification Standards
Vol 1-7: Review Segments as Needed

Notes:
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
STAGE III

STAGE OBJECTIVE:

During this stage, the student will plan and perform IFR cross-country flights while refining the basic IFR skills required to operate in the instrument environment.

STAGE COMPLETION STANDARDS:

The student will demonstrate positional awareness and the ability to accurately navigate the aircraft by reference to navigation systems. At the completion of this stage the student will be able to perform instrument flight operations to the current Instrument Rating Airman Certification Standards.
STAGE III
LESSON 40
DUAL - GROUND
CHART REVIEW &
EN ROUTE PROCEDURES

DATE_______ GRADE (Circle One) S U I
STUDENT NAME _____________ STUDENT SIGNATURE_____________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE_____________
DISCUSSION: (1.2) ___________
CRS TOTALS: (F/I/D/FS) ____/____/____/____

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to en route IFR publications and procedures.

CONTENT:

Lesson Introduction

_____ Chart Supplement US (formerly A/FD)
_____ VFR / IFR Low Altitude Planning Chart
_____ En Route Low Altitude IFR Chart
_____ En Route Chart Symbology
_____ Air Traffic Service (ATS) Route System
_____ Intersections and Changeover Points

Lesson Introduction

_____ ATS Route Course Changes
_____ Cockpit Management
_____ Position Reporting Requirements
_____ Additional Reporting Requirements
_____ Loss of Communications Procedures (IMC and VMC)

COMPLETION STANDARDS:

At the completion of this lesson, the student will have an understanding of IFR navigation charts.

ADDITIONAL STUDY:

FAA-H-8261-1-IPH
FAA-H-8083-15-IFH
AIM
Instrument Rating Airman Certification Standards
Vol 4: Segments 1-13 (DVD 1-14)
STAGE III
LESSON 41
DUAL - GROUND
IFR CROSS-COUNTRY PLANNING

DATE_________          GRADE (Circle One)  S  U  I
STUDENT NAME _____________ STUDENT SIGNATURE_____________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE_____________
DISCUSSION: (1.2) ___________
CRS TOTALS: (F/I/D/FS) ____/____/____/____

Notes:

Stage III

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to IFR cross-country flight planning.

CONTENT:

Lesson Introduction

_____ Charts & Publications
_____ Weather Briefing
_____ NOTAMs
_____ Determination of an Alternate
_____ Preferred IFR Routes
_____ DPs / STARs
_____ Takeoff Minimums

Lesson Introduction

_____ Cruising Altitudes
_____ Aircraft Performance
_____ Flight Plan Filing
_____ Cockpit Management
_____ Aeronautical Decision Making & Judgment
_____ Crew Resource Management

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to plan an IFR cross-country flight.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
AIM
Instrument Rating Airman Certification Standards
Vol 4: Segments 1-5 (DVD 1-6)
Vol 7: Segments 4-13 (DVD 5-14)
STAGE III
LESSON 42
DUAL - FTD / ATD
CROSS-COUNTRY

DATE___________ ACFT/FTD ID_________ GRADE (Circle One)  S  U  I
STUDENT NAME _____________ STUDENT SIGNATURE_______________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE_____________

FTD/ATD/SIM: (2.0) _______ DISCUSSION: (0.4) _______
CRS TOTALS: (F/I/D/FS) ___ / ___ / ___ / ___

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to IFR cross-country flight planning and review executing instrument approaches.

CONTENT:

Lesson Introduction | Lesson Review
--- | ---
En Route Navigation Including Lost Communications Procedures | Copying / Understanding IFR Clearances
Dealing with En Route & Terminal Weather - Planning an Alternate | Nonprecision Approach
Preparation of an IFR Navigation Log | Precision Approach
Planning Departures and Arrivals | Missed Approach Procedures
Power / Fuel Management | Circle to Land Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to plan an IFR cross-country flight and complete an IFR navigation log. The student will maintain headings ±5° en route/±10° on approaches, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. During nonprecision approaches the student will maintain the MDA, when reached, +100/-0 feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment. During precision approaches the student will avoid descents below the DA/DH before initiating a missed approach procedure or transitioning to a normal landing approach and allow no more than a three-quarter-scale deflection of the localizer or glideslope while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 4: Review Segments as Needed
Vol 6: Segments 1-4 (DVD 1-5)

Notes:
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
STAGE III
LESSON 43
DUAL - AIRCRAFT
CROSS-COUNTRY

DATE___________ ACFT/FTD ID_________ GRADE (Circle One)  S  U  I
STUDENT NAME _______________ STUDENT SIGNATURE_______________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE_____________

FLIGHT TIME: (3.0) _______ DISCUSSION: (0.4) _______
INSTRUMENT: (2.8) _______ CRS TOTALS: (F/I/D/FS) / / / /

LESSON OBJECTIVE:

During this lesson, the instructor will review IFR cross-country flight planning and executing instrument approaches with the student. The cross-country should be planned to multiple airports with at least one airport more than 75 nautical miles from the departure airport. All airports should be sufficiently spaced to allow the student at least some realistic en route time.

CONTENT:

Lesson Introduction

Dealing with En Route Weather
Preparation of an IFR Navigation Log
Planning Departures and Arrivals
Power / Fuel Management

Lesson Review

Filing an IFR Flight Plan
Copying / Understanding IFR Clearances
Nonprecision Approach
APV Approach
Precision Approach
Missed Approach Procedures
Circle to Land Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to perform an IFR cross-country with minimal assistance from the instructor. The student will maintain headings ±5° en route/±10° on approaches, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. During nonprecision approaches the student will maintain the MDA, when reached, +100/-0 feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment. During precision approaches the student will avoid descents below the DA/DH before initiating a missed approach procedure or transitioning to a normal landing approach and allow no more than a three-quarter-scale deflection of the localizer or glideslope while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 2: Review Segments as Needed
Vol 3: Review Segments as Needed
Vol 5: Review Segments as Needed
Vol 6: Segments 5-9 (DVD 6-10)

Notes:
STAGE III
LESSON 44
DUAL - FTD / ATD
CROSS-COUNTRY

DATE___________ ACFT/FTD ID_________ GRADE (Circle One)  S  U  I
STUDENT NAME _______________ STUDENT SIGNATURE _______________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE _______________
FTD/ATD/SIM: (2.0) _______ DISCUSSION: (0.4) _______
CRS TOTALS: (F/I/D/FS) _____ / _____ / _____ / _____

LESSON OBJECTIVE:

During this lesson, the instructor will review IFR cross-country flight planning and decision making and executing instrument approaches.

CONTENT:

Lesson Review

- Dealing with En Route & Terminal Weather
- Preparation of an IFR Navigation Log
- Planning Departures and Arrivals
- Lost Communications Procedures
- Copying / Understanding IFR Clearances

Lesson Review

- DME Arc
- Nonprecision Approach - Partial Panel
- Precision Approach
- Missed Approach Procedures
- Circle to Land Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to plan an IFR cross-country flight and complete an IFR navigation log. The student will maintain headings ±5° en route/±10° on approaches, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100’, maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. During nonprecision approaches the student will maintain the MDA, when reached, +100/-0 feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment. During precision approaches the student will avoid descents below the DA/DH before initiating a missed approach procedure or transitioning to a normal landing approach and allow no more than a three-quarter-scale deflection of the localizer or glideslope while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 3: Segments 14-17 (DVD 15-18)
Vol 4: Review Segments as Needed

Notes:

__________________________
__________________________
__________________________
__________________________
__________________________

STAGE III
LESSON 45
DUAL - AIRCRAFT
CROSS-COUNTRY

LESSON OBJECTIVE:

During this lesson, the instructor will review IFR cross-country flight planning and executing instrument approaches with the student. The student will also perform a cross-country flight of at least 250 nautical miles along airways or an ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 100 nautical miles between airports; involving an instrument approach at each airport; and involving three different kinds of approaches with the use of navigation systems. The autopilot should be used where appropriate to assist in management of the aircraft.

CONTENT:

Lesson Review

- Filing an IFR Flight Plan
- Copying / Understanding IFR Clearances
- Dealing with En Route Weather
- Preparation of an IFR Navigation Log
- Planning Departures and Arrivals
- Power / Fuel Management

Lesson Review

- Nonprecision Approach
- Precision Approach
- Missed Approach Procedures
- Approaches with an Autopilot (Precision & Nonprecision)
- Circle to Land Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to perform an IFR cross-country with minimal assistance from the instructor. The student will utilize the autopilot as appropriate to assist in managing the aircraft but will not display dependence on it. The student will maintain headings ±5° en route/±10° on approaches, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100’, maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. During nonprecision approaches the student will maintain the MDA, when reached, +100/-0 feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment. During precision approaches the student will avoid descents below the DA/DH before initiating a missed approach procedure or transitioning to a normal landing approach and allow no more than a three-quarter-scale deflection of the localizer or glideslope while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 4: Review Segments as Needed
Vol 6: Review Segments as Needed

Notes:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
STAGE III
LESSON 46
DUAL - GROUND
END OF STAGE REVIEW

The objective of this lesson is to evaluate the student's comprehension of the material presented in the Instrument Pilot Certification ground lessons.

CONTENT:

Lesson Review

- Instrument Pilot Knowledge Test
- Weather Information
- Cross-Country Flight Planning
- Aircraft Systems Related to IFR Flight

Lesson Review

- Aircraft Flight / Navigation Equipment
- Instrument Flight Deck Check
- FARs Related to IFR Flight & Pilot Qualifications

COMPLETION STANDARDS:

In order to complete the ground portion of the Instrument Pilot Certification Course, the student must score at least a 70% on the Instrument Pilot Knowledge Test. The student must have instrument pilot level knowledge of the items listed for review.

Notes:

________________________________________
________________________________________
________________________________________
________________________________________

________________________________________
________________________________________
________________________________________
________________________________________

________________________________________
Stage III Lesson 47
Dual - Aircraft
End of Stage Review

Lesson Objective:
During this lesson, the instructor will review instrument flight procedures with the student in preparation for the final stage check.

Content:

Lesson Review

<table>
<thead>
<tr>
<th>Lesson Review</th>
<th>Lesson Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrument Flight Deck Check</td>
<td>Nonprecision Approach with Loss of</td>
</tr>
<tr>
<td>Compliance with ATC Clearances</td>
<td>Primary Flight Instrument Indicators</td>
</tr>
<tr>
<td>Communications</td>
<td>APV Approach</td>
</tr>
<tr>
<td>Holding Procedures</td>
<td>Precision Approach</td>
</tr>
<tr>
<td>Instrument Flight</td>
<td>Missed Approach Procedures</td>
</tr>
<tr>
<td>Partial Panel Instrument Flight</td>
<td>Missed Approach Procedures with an</td>
</tr>
<tr>
<td>Recovery from Unusual Attitudes</td>
<td>Autopilot</td>
</tr>
<tr>
<td>Intercepting / Tracking Navigation Systems</td>
<td>Circling Approach</td>
</tr>
<tr>
<td>Departure, En route and Arrival Operations</td>
<td>Landing from Straight-In / Circling</td>
</tr>
<tr>
<td>Nonprecision Approach - Full Approach</td>
<td>Approaches</td>
</tr>
<tr>
<td>Nonprecision Approach - Vectored</td>
<td>Loss of Communications</td>
</tr>
<tr>
<td>Nonprecision Approach with an Autopilot</td>
<td>Checking Instruments and Equipment</td>
</tr>
</tbody>
</table>

Completion Standards:
The student shall perform all maneuvers to the standards established by the Instrument Rating Airman Certification Standards.

Additional Study:


Note: The Nonprecision Approach with Loss of Primary Flight Instrument Indicators and the Nonprecision Approach with an Autopilot can be combined with the full and vectored approaches. Just as the practical test standards require, the student should complete at least 2 nonprecision approaches and 1 precision approach during this review session. At least 1 nonprecision approach should include a procedure turn or a full TAA transition. LPV minimums with a DA greater than 300 feet HAT may be used as a nonprecision approach; LPV minimums can be used to demonstrate precision approach proficiency if the DA is equal to or less than 300 feet HAT. While this review flight can be flown as a practice checkride, it is important to ensure that the student is fully prepared for any type of approach that the airplane is capable of flying prior to the checkride thus additional approaches may be appropriate.

Notes:

________________________________________
________________________________________
________________________________________
________________________________________
________________________________________

Page 52 Instrument Rating
PRE-STAGE CHECK – TIME SUMMARY

This page is intended to be used by the student’s flight instructor to summarize the times accumulated through this course of instruction and determine that the times are sufficient for the stage requirements. The check instructor should verify that these times are acceptable for completion of the stage.

Part 141 Note: The instrument time in an approved FTD or AATD used to meet the minimum requirements of Part 141 may not exceed 40% of the total flight training hours required for the course of instruction. Training time in an approved BATD cannot exceed 25% of the total flight training hours required for the course of instruction. The limit is raised to 50% for an approved full flight simulator or a combination of a simulator, an FTD, an AATD, and a BATD (FTD, AATD & BATD time limits still apply).

DATE_________________ STUDENT NAME _______________ STUDENT SIGNATURE_________________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE____________________

STAGE TOTALS
FLIGHT TIME: ________ (In stage only.)
GROUND/DISCUSSION: ________ (Be sure to include the Ground Lesson times.)
FTD/ATD/SIM: ________ (In stage only.)
INSTRUMENT: ________ (In flight only.)

COURSE TOTALS
FLIGHT TIME: ________ (In course only.)
GROUND/DISCUSSION: ________ (Be sure to include the Ground Lesson times.)
FTD/ATD/SIM: ________ (In course only.)
INSTRUMENT: ________ (In flight only.)
STAGE III LEON 48 STAGE III CHECK

DATE___________ ACFT/FTD ID_________ GRADE (Circle One)  S  U  I
STUDENT NAME _____________ STUDENT SIGNATURE________________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE_____________

CRS TOTALS: (F/I/D/FS) ____/____/____/____
FLIGHT TIME: (2.0) _______ DISCUSSION: (1.0) _______
INSTRUMENT: (1.8) _______ CRS TOTALS: (F/I/D/FS) / / / 

LESSON OBJECTIVE:

During this lesson, the student will complete a stage check for the Instrument Rating.

CONTENT:

Lesson Review

**ORAL**
- Weather Information
- Cross-Country Flight Planning
- Aircraft Systems Related to IFR Flight
- Aircraft Flight / Navigation Equipment
- Instrument Flight Deck Check
- FARs Related to IFR Flight & Pilot Qualifications

**FLIGHT**
- Instrument Flight Deck Check
- Compliance with ATC Clearances
- Holding Procedures
- Instrument Flight
- Partial Panel Instrument Flight
- Recovery from Unusual Flight Attitudes
- Intercepting / Tracking Navigation Systems

**COMPLETION STANDARDS:**

The student shall perform all maneuvers to the standards established by the Instrument Rating Airman Certification Standards.

**ADDITIONAL STUDY:**

Instrument Rating Airman Certification Standards
Vol 1-7: Review Segments as Needed

**Note:** The Nonprecision Approach with Loss of Primary Flight Instrument Indicators and the Nonprecision Approach with an Autopilot can be combined with the full and vectored approaches. Just as the airman certification standards require, the student should complete at least 2 nonprecision approaches and 1 precision approach during this stage check. At least 1 nonprecision approach should include a procedure turn or a full TAA transition. LPV minimums with a DA greater than 300 feet HAT may be used as a nonprecision approach; LPV minimums can be used to demonstrate precision approach proficiency if the DA is equal to or less than 300 feet HAT.

Notes:

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
### RECORD OF EXTRA TRAINING

<table>
<thead>
<tr>
<th>DATE</th>
<th>ACFT/FTD ID</th>
<th>GRADE (Circle One)</th>
<th>S</th>
<th>U</th>
<th>I</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>STUDENT NAME</th>
<th>STUDENT SIGNATURE</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>INSTRUCTOR #</th>
<th>INSTRUCTOR SIGNATURE</th>
</tr>
</thead>
</table>

**FLIGHT TIME:** ________ **DISCUSSION:** ___________

**CRS TOTALS:** (F/I/D/FS) ____/____/____/____

**CONTENT:**

---
---
---
---
---
---
---
---
---
---
RECORD OF EXTRA TRAINING

DATE________ ACFT/FTD ID________ GRADE (Circle One) S U I
STUDENT NAME __________ STUDENT SIGNATURE____________
INSTRUCTOR # ___________ INSTRUCTOR SIGNATURE____________

FLIGHT TIME: ________ DISCUSSION: ___________
CRS TOTALS: (F/I/D/FS) ____/____/____/____

CONTENT:

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
# RECORD OF EXTRA TRAINING

<table>
<thead>
<tr>
<th>DATE</th>
<th>ACFT/FTD ID</th>
<th>GRADE (Circle One)</th>
<th>S</th>
<th>U</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**STUDENT NAME:** ___________

**STUDENT SIGNATURE:** ________________

**INSTRUCTOR #:** ___________

**INSTRUCTOR SIGNATURE:** ________________

**FLIGHT TIME:** _______

**DISCUSSION:** ___________

**CRS TOTALS:** (F/I/D/FS) ____/____/____/____

## CONTENT:

<table>
<thead>
<tr>
<th>___</th>
<th>___</th>
<th>___</th>
<th>___</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

---

---

---

---

---

---

---
# RECORD OF EXTRA TRAINING

<table>
<thead>
<tr>
<th>DATE</th>
<th>ACFT/FTD ID</th>
<th>GRADE (Circle One)</th>
<th>STUDENT NAME</th>
<th>STUDENT SIGNATURE</th>
<th>INSTRUCTOR #</th>
<th>INSTRUCTOR SIGNATURE</th>
<th>FLIGHT TIME</th>
<th>DISCUSSION</th>
<th>CRS TOTALS: (F/I/D/FS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>S U I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CONTENT:**

<table>
<thead>
<tr>
<th>____</th>
<th>__________________</th>
<th>____</th>
<th>__________________</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>______________</td>
<td></td>
<td>___________________</td>
</tr>
<tr>
<td></td>
<td>__________________</td>
<td></td>
<td>___________________</td>
</tr>
<tr>
<td></td>
<td>__________________</td>
<td></td>
<td>___________________</td>
</tr>
<tr>
<td></td>
<td>__________________</td>
<td></td>
<td>___________________</td>
</tr>
<tr>
<td></td>
<td>__________________</td>
<td></td>
<td>___________________</td>
</tr>
<tr>
<td></td>
<td>__________________</td>
<td></td>
<td>___________________</td>
</tr>
</tbody>
</table>

---

---

---

---

---

---

---

---

---
RECORD OF EXTRA TRAINING

DATE__________ ACFT/FTD ID_________ GRADE (Circle One) S U I
STUDENT NAME ___________ STUDENT SIGNATURE____________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE_____________

FLIGHT TIME: ________ DISCUSSION: __________
CRS TOTALS: (F/I/D/FS) ____/____/____/____

CONTENT:

_________________________ __________
_________________________ __________
_________________________ __________
_________________________ __________
_________________________ __________
_________________________ __________
_________________________ __________
_________________________ __________

_________________________ __________
_________________________ __________
_________________________ __________
_________________________ __________
_________________________ __________

_________________________ __________
_________________________ __________

_________________________ __________
_________________________ __________

_________________________ __________

_________________________ __________

_________________________ __________

_________________________ __________

_________________________ __________

_________________________ __________

_________________________ __________
RECORD OF EXTRA TRAINING

DATE__________ ACFT/FTD ID________ GRADE (Circle One) S U I
STUDENT NAME________ STUDENT SIGNATURE________
INSTRUCTOR #________ INSTRUCTOR SIGNATURE________

FLIGHT TIME: ______ DISCUSSION: __________
CRS TOTALS: (F/I/D/FS) ____ / / / 

CONTENT:

__________________________
__________________________
__________________________
__________________________
__________________________
__________________________
__________________________
RECORD OF EXTRA TRAINING

DATE___________ ACFT/FTD ID__________ GRADE (Circle One) S  U  I
STUDENT NAME ___________ STUDENT SIGNATURE________________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE________________

FLIGHT TIME: ________ DISCUSSION: ___________

CRS TOTALS: (F/I/D/FS) ____/____/____/____

CONTENT:

_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________

_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________

_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________

_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________

_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________

_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________

_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
_________________________  ____________________________
RECORD OF EXTRA TRAINING

DATE__________ ACFT/FTD ID__________ GRADE (Circle One) S  U  I
STUDENT NAME ___________ STUDENT SIGNATURE____________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE____________

FLIGHT TIME: ________ DISCUSSION: ___________

CRS TOTALS: (F/I/D/FS) ____/____/____/____

CONTENT:

_________________________ ___________ _______________________
_________________________ ___________ _______________________
_________________________ ___________ _______________________
_________________________ ___________ _______________________
_________________________ ___________ _______________________
_________________________ ___________ _______________________
_________________________ ___________ _______________________
## RECORD OF EXTRA TRAINING

<table>
<thead>
<tr>
<th>CONTENT:</th>
</tr>
</thead>
</table>

|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

| CRS TOTALS: (F/I/D/FS) | / | / | / |
STAGE I
LESSON Optional 9a
DUAL - GROUND
NDB FUNDAMENTALS

DATE_________  GRADE (Circle One)  S  U  I
STUDENT NAME _____________ STUDENT SIGNATURE_________________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE_____________
DISCUSSION: (1.2) ___________
CRS TOTALS: (F/I/D/FS) ____/____/____/____
Notes:

LESSON OBJECTIVE:

During this lesson, the instructor will discuss NDB fundamentals with the student. This lesson is considered optional and is not considered a part of the 141 required times. It can be taught at the discretion of the flight instructor if the training aircraft is equipped with an ADF.

CONTENT:

Lesson Introduction

______ NDB Principles of Operation
______ NDB Transmitter
______ ADF
______ Types of NDBs & Service Volumes
______ NDB Errors & Irregularities
______ NDB Tuning, Identifying, and Monitoring

Lesson Introduction

______ NDB Orientation, Position and Station
______ NDB Orientation, Position and Station
______ Intercepting NDB Bearings
______ Tracking NDB Bearings / Wind Correction Techniques

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a thorough knowledge of the NDB and its operating principles. The student will also be able to accurately describe the proper techniques for orientation, intercepting, and tracking an NDB bearing.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
A I M - Aeronautical Information Manual
Instrument Rating Airman Certification Standards
Vol 3: Segments 10-11 (DVD 11-12)
STAGE I  
LESSON Optional 10a  
DUAL - FTD / ATD  

DATE__________ ACFT/FTD ID__________ GRADE (Circle One)  S  U  I  
STUDENT NAME ___________ STUDENT SIGNATURE ___________  
INSTRUCTOR # ____________ INSTRUCTOR SIGNATURE ____________  
FTD/ATD/SIM: (1.5) _______ DISCUSSION: (0.4) _______  
CRS TOTALS: (F/I/D/FS) __ / __ / __ / __  

Notes:  

STUDENT NAME ___________ STUDENT SIGNATURE ___________  
INSTRUCTOR # ____________ INSTRUCTOR SIGNATURE ____________  
FTD/ATD/SIM: (1.5) _______ DISCUSSION: (0.4) _______  
CRS TOTALS: (F/I/D/FS) __ / __ / __ / __  

LESSON OBJECTIVE:  
During this lesson, the instructor will introduce NDB procedures in an FTD or ATD. This lesson is considered 
optional and is not considered a part of the 141 required times. It can be taught at the discretion of the flight 
instructor if the training aircraft is equipped with an ADF.  

CONTENT:  

Lesson Introduction  
______ NDB Tuning, Identifying, and Monitoring  
______ NDB Orientation, Position, and Station Passage  
______ NDB Intercepting and Tracking Procedures / Wind Correction Techniques  

COMPLETION STANDARDS:  
At the completion of this lesson, the student will have a basic knowledge of NDB procedures. The student 
will maintain or roll out on assigned headings ±10°, maintain or level off at assigned altitudes ±100’, maintain 
airspeeds ±10 knots, and maintain turning angles of bank ±5°.  

ADDITIONAL STUDY:  
FAA-H-8083-15-IFH  
Instrument Rating Airman Certification Standards  
Vol 3: Segments 10-11 (DVD 11-12)
STAGE I
LESSON Optional 11a
DUAL - AIRCRAFT

DATE__________ ACFT/FTD ID__________ GRADE (Circle One)  S  U  I
STUDENT NAME _____________ STUDENT SIGNATURE _________________
INSTRUCTOR # _____________ INSTRUCTOR SIGNATURE _______________

FLIGHT TIME: (1.2) ______ DISCUSSION: (0.4) _______
INSTRUMENT: (1.0) ______ CRS TOTALS: (F/I/D/FS) __ __ __ __

LESSON OBJECTIVE:

During this lesson, the instructor will introduce NDB procedures in the training aircraft. This lesson is considered optional and is not considered a part of the 141 required times. It can be taught at the discretion of the flight instructor if the training aircraft is equipped with an ADF.

CONTENT:

Lesson Introduction

_____ NDB Tuning, Identifying, and Monitoring
_____ NDB Orientation, Position, and Station Passage

Lesson Introduction

_____ NDB Intercepting and Tracking Procedures
/ Wind Correction Techniques

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic knowledge of NDB procedures. The student will maintain or roll out on assigned headings ±10°, maintain or level off at assigned altitudes ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. While tracking a specified NDB course, the student will apply proper correction to maintain the course, allowing no more than ±20° of deviation.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH
Instrument Rating Airman Certification Standards
Vol 3: Segments 10-11 (DVD 11-12)
STAGE II
LESSON Optional 24a
DUAL - FTD / ATD

<table>
<thead>
<tr>
<th>DATE__________ ACFT/FTD ID__________ GRADE (Circle One) S  U  I</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDENT NAME ___________ STUDENT SIGNATURE ___________</td>
</tr>
<tr>
<td>INSTRUCTOR # ___________ INSTRUCTOR SIGNATURE ___________</td>
</tr>
<tr>
<td>FTD/SIM: (1.5) ______ DISCUSSION: (0.4) __________</td>
</tr>
<tr>
<td>CRS TOTALS: (F/I/D/FS) ______ / ______ / ______ / ______</td>
</tr>
</tbody>
</table>

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to nonprecision approaches and missed approach procedures. Holding procedures will be reviewed. This lesson is considered optional and is not considered a part of the 141 required times. It can be taught at the discretion of the flight instructor as a substitute for Lesson 24 if the training aircraft is equipped with an ADF.

CONTENT:

<table>
<thead>
<tr>
<th>Lesson Introduction</th>
<th>Lesson Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>_____ Departure Vectors to Filed Route</td>
<td>_____ Copying / Understanding IFR Clearances</td>
</tr>
<tr>
<td>_____ Climb Via SID Operations</td>
<td>_____ ATC Communications</td>
</tr>
<tr>
<td>_____ IFR Navigation</td>
<td>_____ Holding Pattern Entries</td>
</tr>
<tr>
<td>_____ Approach Setup and Briefing</td>
<td>_____ Holding Patterns (VOR/NDB/GPS)</td>
</tr>
<tr>
<td>_____ Descend Via STAR Operations</td>
<td></td>
</tr>
<tr>
<td>_____ VOR Approach</td>
<td></td>
</tr>
<tr>
<td>_____ NDB Approach</td>
<td></td>
</tr>
<tr>
<td>_____ GPS Approach (LNAV)</td>
<td></td>
</tr>
<tr>
<td>_____ Missed Approach Procedures</td>
<td></td>
</tr>
<tr>
<td>_____ Landing from an Approach</td>
<td></td>
</tr>
</tbody>
</table>

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic understanding of holding procedures, nonprecision approach procedures, and missed approach procedures. The student will maintain headings ±10°, maintain altitudes, other than flight at MDA, ±100’, maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. During nonprecision approaches the student will maintain the MDA, when reached, +200/-0 feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment.

REQUIRED STUDY:

FAA-H-8261-1-IPH  Vol 3: Segments 8-13 (DVD 9-14)
Instrument Rating Practical Test Standards  Vol 7: Segment 11 (DVD 12)

Notes:

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
## LESSON OBJECTIVE:

During this lesson, the instructor will review IFR navigation, ATC communication procedures, obtaining IFR clearances, performing an approach brief, and executing nonprecision instrument approaches with the student in the training aircraft. This lesson is considered optional and is not considered a part of the 141 required times. It can be taught at the discretion of the flight instructor as a substitute for Lesson 26 if the training aircraft is equipped with an ADF.

## CONTENT:

<table>
<thead>
<tr>
<th>Lesson Introduction</th>
<th>Lesson Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>_____ Filing an IFR Flight Plan</td>
<td>_____ Holding Procedures</td>
</tr>
<tr>
<td>_____ Copying / Understanding IFR Clearances</td>
<td>_____ Descend Via STAR Operations</td>
</tr>
<tr>
<td>_____ ATC Communications</td>
<td>_____ Approach Setup and Briefing</td>
</tr>
<tr>
<td>_____ Departure Vectors to Filed Route or Pilot Nav to</td>
<td>_____ VOR Approach</td>
</tr>
<tr>
<td>Filed Route or Pilot</td>
<td>_____ NDB Approach</td>
</tr>
<tr>
<td>_____ Climb Via SID Operations</td>
<td>_____ GPS Approach (LNAV)</td>
</tr>
<tr>
<td>_____ IFR Navigation</td>
<td>_____ Missed Approach Procedures</td>
</tr>
</tbody>
</table>

## COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to navigate, hold en route, and perform VOR, NDB, and GPS approaches with minimal instructor assistance. The student should also be able to perform ATC communications with minimal instructor assistance. The student will maintain headings ±10°, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. During nonprecision approaches the student will maintain the MDA, when reached, +200/-0 feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment.

## ADDITIONAL STUDY:

- FAA-H-8261-1-IPH
- FAA-H-8083-15-IFH
- Instrument Rating Airman Certification Standards
  Vol 3: Segments 6-12 (DVD 7-13)