

Instrument Pilot Syllabus

Seventh Edition, First Printing

Updates

March 2023

NOTE: Sections with changes are indicated by a vertical bar in the left margin. Text that should be deleted is displayed with a line through it. New text is shown with blue underlined font.

If you are tested on any content not represented in our materials or this update, please share this information with Gleim so we can continue to provide the most complete test preparation experience possible. You can submit feedback at www.GleimAviation.com/questions. Thank you in advance for your help!

We have changed “student” to “learner” throughout the book to reflect the FAA’s change in nomenclature.

Introduction

Pages 4-5, Part 141 vs. Part 61 Schools; New Part 141 vs. Part 61 Aeronautical Experience Requirements; Part 141 Student Information, title, Enrollment Prerequisites, Graduation Requirements, and Credit for Previous Training; New Explanation of the Gleim *Instrument Pilot Training Record*; Gleim Instrument Pilot Syllabus: These edits clarify language; add coverage on Aeronautical Experience Requirements, other useful products, and flight school grading systems; update descriptions of information available in each study unit; and provide information on where learners can find resource material in this syllabus.

PART 141 VS. PART 61 SCHOOLS

[. . .]

You should select a flight instructor and/or flight school that you are comfortable with rather than being concerned with whether the training is conducted under Part 141 or Part 61. This syllabus meets the requirements for either Part 141 or Part 61.

~~The Gleim syllabus has been reviewed by the FAA in Washington D.C., and was found to meet the requirements of a syllabus under Part 141 or Part 61, as appropriate. However, final approval of a syllabus for use under Part 141 must come from the responsible FAA Flight Standards office. Thus, the Gleim **Instrument Pilot Syllabus** can be used by any Part 141 school with minimum effort once approved by the appropriate Flight Standards office.~~

If a Part 141 pilot school cannot or will not use this syllabus, consider finding another Part 141 or Part 61 school for your training, OR please call (800) 874-5346 if you have questions or problems.

PART 141 VS. PART 61 AERONAUTICAL EXPERIENCE REQUIREMENTS

<p align="center">PART 141 14 CFR 141 Appendix C, Secs. 2., 4.</p>	<p align="center">PART 61 14 CFR 61.65</p>
<ul style="list-style-type: none"> • <u>Hold at least a current private pilot certificate with an airplane rating appropriate to the instrument rating sought</u> • <u>35 hr. of instrument training for an initial instrument rating</u> • <u>Instrument training time from a CFII including at least one cross-country flight</u> <ul style="list-style-type: none"> ▪ <u>In the category and class of airplane that the course is approved for, and is performed under IFR;</u> ▪ <u>At least 250 NM along airways or ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 100 NM between airports</u> ▪ <u>An instrument approach at each airport</u> ▪ <u>Three different kinds of approaches with the use of navigation systems</u> 	<ul style="list-style-type: none"> • <u>Hold at least a current private pilot certificate with an airplane rating appropriate to the instrument rating sought</u> • <u>50 hr. cross-country as PIC</u> <ul style="list-style-type: none"> ▪ <u>10 hr. must be in an airplane</u> • <u>40 hr. of actual or simulated instrument time</u> <ul style="list-style-type: none"> ▪ <u>15 hr. must have been received from a CFII including</u> <ul style="list-style-type: none"> • <u>3 hr. in an airplane within 2 calendar months before the date of the practical test</u> • <u>One cross-country flight in an airplane under IFR, with a flight plan filed with an air traffic control facility, and involves</u> <ul style="list-style-type: none"> ▪ <u>A flight of 250 NM along airways or ATC-directed routing</u> ▪ <u>An instrument approach at each airport</u> ▪ <u>Three different kinds of approaches with the use of navigation systems</u>
<p align="center">USE OF FLIGHT SIMULATORS</p>	<p align="center">USE OF FLIGHT SIMULATORS</p>
<ul style="list-style-type: none"> • <u>Training may be conducted in a full flight simulator, flight training device, or aviation training device, provided it is representative of the aircraft for which the course is approved and the training is given by an authorized instructor.</u> • <u>Credit for training in a full flight simulator cannot exceed 50% of the total flight training hour requirements.</u> • <u>Credit for training in a flight training device, advanced aviation training device, or a combination cannot exceed 40% of the total flight training hour requirements.</u> • <u>Credit for training in a basic aviation training device cannot exceed 25% of the total training hour requirements.</u> • <u>Credit for training in full flight simulators, flight training devices, and aviation training devices if used in combination, cannot exceed 50% of the total flight training hour requirements.</u> 	<ul style="list-style-type: none"> • <u>A maximum of 20 hr. of instrument time may be performed in a full flight simulator or flight training device.</u> • <u>A maximum of 10 hr. of instrument time may be performed in a basic aviation training device or 20 hr. in an advanced aviation training device if</u> <ul style="list-style-type: none"> ▪ <u>The device is approved and authorized by the FAA</u> ▪ <u>An authorized instructor provides the instrument time in the device</u> ▪ <u>The FAA approved the instrument training and instrument tasks performed in the device</u>

PART 141 LEARNER INFORMATION

[. . .]

Graduation Requirements

You must complete the training specified in this syllabus, with a minimum of 30 hours of ground training in the specified aeronautical knowledge areas and ~~a~~the minimum of ~~35~~required hours of flight training. These requirements are reflected in the Gleim ground and flight training syllabus. At the completion of your training, your CFI should ~~photocopy and complete~~ and make a copy of the graduation certificate on page 117 of this syllabus.

[. . .]

Credit for Previous Training

You may be given credit toward this instrument rating course for previous pilot experience and knowledge [14 CFR 141.77(c)]:

1. If the credit is based on a Part 141 training course, the credit ~~may be~~ is limited to not more than 50% of the requirements for this course.
2. If the credit is based on a Part 61 training course, the credit ~~cannot exceed~~ is limited to not more than 25% of the requirements for this course.

The receiving school will determine the amount of course credit to be given, based on a proficiency test, a knowledge test, or both.

EXPLANATION OF THE GLEIM INSTRUMENT PILOT TRAINING RECORD

Also available separately from this syllabus is the Gleim *Instrument Pilot Training Record*. This record is provided for flight schools that conduct training under 14 CFR Part 141, which requires that detailed training records be maintained for each learner. When properly completed, the training record booklet will meet the training record requirements of Part 141.

Training Record Elements

The training record consists of three main sections:

1. The front cover contains personal information and information about the training course.
2. The back cover serves as a ground training record and flight evaluation record.
3. The inside of the booklet consists of a flight training record, specific flight lesson records, and a separate record of instructor endorsements.

Using the Instrument Pilot Training Record

Front Cover: The front cover of the training record should be filled out by the learner, his or her flight instructor, and the chief flight instructor at the time of enrollment. Spaces provided to record credit awarded for previous ground and flight training should be completed by the chief instructor. The chief instructor should also complete the enrollment certificate (found on page 115 of this syllabus) and place it in the training record.

At the completion of training, the chief instructor should complete the information on the front cover, as appropriate (e.g., graduation, transfer, or termination). If the learner has graduated, the graduation certificate (found on page 117 of this syllabus) should be completed and placed in the training record.

Back Cover: The ground training record should be filled out by the instructor after each ground lesson is completed, regardless of whether ground training is being conducted formally or as a self-study program. The time spent and date of completion should be noted and the record initialed by both the learner and the instructor.

The stage and end-of-course test records should be filled out by the instructor after each stage and end-of-course test has been taken by the learner, graded, and reviewed with the instructor. The date of the test, the result, and the date of the review should be noted. The record should then be initialed by the learner and signed by the instructor. Each stage and end-of-course test answer sheet should also be placed in the training record.

The learner flight evaluation records should be filled out by the chief instructor after each stage check. The date and result of the end-of-course test should be noted and the record initialed by the learner and signed by the instructor or chief instructor (the chief instructor must sign the record for each stage check).

Inside: The flight training record consists of three parts:

1. The record of instructor endorsements is a record of information related to each flight instructor endorsement that is pertinent to the course of training.
2. The instrument pilot flight record is a chronological record of each training flight that is made during the course, and
3. The flight lesson record is an itemized record of the learner's performance on the lesson items listed in each specific flight lesson.

Training Record Grading Legend

Lesson items within each flight lesson record may be graded according to the flight school's grading system of choice. There are multiple grading systems that could be used, and four (abbreviated, lettered, numbered, symbolized) are depicted below.

Comprehensive Grading Systems

<u>Grade</u>	<u>Abbreviated</u>	<u>Lettered</u>	<u>Numbered</u>
<u>Outstanding</u>	<u>O</u>	<u>A</u>	<u>1</u>
<u>Good</u>	<u>G</u>	<u>B</u>	<u>2</u>
<u>Satisfactory</u>	<u>S</u>	<u>C</u>	<u>3</u>
<u>Unsatisfactory</u>	<u>U</u>	<u>D</u>	<u>4</u>
<u>Incomplete</u>	<u>I</u>	<u>I</u>	<u>IN</u>

Simplified Grading Systems

<u>Grade</u>	<u>Abbreviated</u>	<u>Numbered</u>	<u>Symboled</u>
<u>Satisfactory</u>	<u>S</u>	<u>1</u>	<u>✓</u>
<u>Unsatisfactory</u>	<u>U</u>	<u>2</u>	<u>X</u>
<u>Incomplete</u>	<u>I</u>	<u>3</u>	<u>(blank)</u>

Fill in the table below with your flight school's grading system.

Your Flight School's Grading System

<u>Grade</u>	<u>Character</u>

GLEIM INSTRUMENT PILOT SYLLABUS

[. . .]

Ground Training Syllabus

[. . .]

Each ground lesson involves studying the appropriate section in the Gleim *Instrument Pilot Flight Maneuvers and Practical Test Prep, Aviation Weather and Weather Services, FAR/AIM, and Pilot Handbook*. [Each study unit also includes supplemental text references to the *Aeronautical Information Manual \(AIM\)* and *Advisory Circulars \(ACs\)* where available. *Advisory Circular document numbers are listed, but the publication letter is not included due to the varied publication dates. You should always refer to the latest edition of each Advisory Circular.* After each study assignment is completed, you need to answer the questions in the appropriate study unit in the Gleim *Instrument Pilot FAA Knowledge Test Prep* book and review incorrect responses with your instructor.](#)

[. . .]

Because OGS is a self-study program delivered via the Internet, the classroom is always open, so you can study as it fits in to your schedule. When you complete the program and pass the end-of-course knowledge test, an endorsement ([valid for 60 days](#)) will be provided to you that will enable you to take the FAA knowledge test at a testing center. This feature makes [the](#) OGS especially valuable to those users electing to complete their ground training before beginning flight training.

At the end of each stage, you are required to complete the stage knowledge test before proceeding to the next stage. The end-of-course knowledge test ~~is completed after~~ [will be available upon completion of](#) the stage three knowledge test. Shortly after the end-of-course test, you should take the FAA instrument rating airman knowledge test. The stage [and end-of-course](#) knowledge tests in the ground syllabus will refer you to FAA figures found [within the front and back cover and](#) after the end-of-course knowledge test ~~in this syllabus~~.

Page 6, Gleim Instrument Pilot Syllabus, Flight Training Syllabus: This update reflects the addition of information beyond the scope of Part 141.

Flight Training Syllabus

The ~~Part 141~~ flight training syllabus contains 29 lessons, which are divided into three stages. It is recommended that each lesson be completed in sequential order.

Page 7, Use of a Flight Simulation Training Device (FSTD) or an Aviation Training Device (ATD): These edits add coverage of Part 61 training requirements.

USE OF A FLIGHT SIMULATION TRAINING DEVICE (FSTD) OR AN AVIATION TRAINING DEVICE (ATD)

[. . .]

An FSTD or ATD may only be used in accordance with the authorization for each specific device. Generally, an ATD may not be used for credit toward the following types of aeronautical experience: cross-country, night, solo, lessons requiring specific quantities of takeoffs and landings, or to meet the requirement to have 3 hours of instruction [within the preceding](#) 2 calendar months of a practical test.

All training time in an FSTD/ATD must be provided by an authorized flight instructor and documented in accordance with 14 CFR 61.51. There are no restrictions on the amount of training time that may be accomplished and logged in an FSTD/ATD; however, there are regulatory limitations on the maximum credit allowed in an FFS, FTD, or ATD toward the “minimum” pilot experience requirements. Training under Part 141 in an FSTD/ATD may be credited up to the maximum time in the tables below toward the 35-hour training time requirement for an instrument rating.

PART 141

Device	Allowance	<u>Max Hours</u>
FFS (Part 141)	50%	17.50
FTD (Part 141)	40%	14.00
AATD (Part 141)	40%	14.00
BATD (Part 141)	25%	8.75

PART 61

<u>Device</u>	<u>Max Hours</u>
<u>FFS</u>	<u>20.00</u>
<u>FTD</u>	<u>20.00</u>
<u>AATD</u>	<u>20.00</u>
<u>BATD</u>	<u>10.00</u>

[. . .]

A pilot school operating under Part 61 may also elect to use an FFS, FTD, or ATD in accordance with the specific authorization for that use as outlined in the various sections of Part 61 [such as a maximum of 20 hours of flight training under 14 CFR 61.65(i)]. Time with an instructor in a BATD and an AATD may be credited toward the aeronautical experience requirements for the instrument rating as specified in the LOA for the device used. For more information, refer to the Instrument Rating Airman Certification Standards, Appendix 8, “Use of Flight Simulation Training Devices (FSTD) and Aviation Training Devices (ATD).”

Page 13, Instrument Rating Syllabus Lesson Sequence and Times and New Part 141 Appendix C Compliance Chart: These edits update verbiage and add information on where learners can find material on specific required topics.

*Part 61 must add at least 5 additional hours to the Part 141 instrument flight training ~~time~~minimums.

PART 141 APPENDIX C COMPLIANCE CHART

The following are the aeronautical knowledge areas and flight tasks required for compliance under 14 CFR Part 141, Appendix C, Instrument Rating Course. The following tables dictate where the items are located in this syllabus.

<u>Ground Training</u> <u>Per 14 CFR 141 Appendix C Sec. 3.(b)</u>		<u>Gleim</u> <u>Ground Lesson(s)</u>
(1)	<u>Applicable Federal Aviation Regulations for IFR flight operations</u>	<u>4</u>
(2)	<u>Appropriate information in the <i>Aeronautical Information Manual</i></u>	<u>1, 3, 5-11</u>
(3)	<u>Air traffic control system and procedures for instrument flight operations</u>	<u>5</u>
(4)	<u>IFR navigation and approaches by use of navigation systems</u>	<u>3, 6</u>
(5)	<u>Use of IFR en route and instrument approach procedure charts</u>	<u>6, 10</u>
(6)	<u>Procurement and use of aviation weather reports and forecasts, and the elements of forecasting weather trends on the basis of that information and personal observation of weather conditions</u>	<u>9</u>
(7)	<u>Safe and efficient operation of aircraft under instrument flight rules and conditions</u>	<u>1, 2</u>
(8)	<u>Recognition of critical weather situations and wind shear avoidance</u>	<u>8</u>
(9)	<u>Aeronautical decision making and judgment</u>	<u>7</u>
(10)	<u>Crew resource management, to include crew communication and coordination</u>	<u>7</u>

<p align="center">Flight Training Per 14 CFR 141 Appendix C Secs. 4.(a), (b), (c)(1); 5</p>	<p align="center">Gleim Flight Lesson(s)</p>
<p><u>35 hr. of instrument training for an initial instrument rating</u></p>	<p align="center"><u>All</u></p>
<ul style="list-style-type: none"> ● <u>For the use of FFS, FTD, or ATD –</u> <ul style="list-style-type: none"> ■ <u>FFS cannot exceed 50% of the total flight training hour requirements</u> ■ <u>FTD, AATD, or a combination cannot exceed 40% of the total flight training hour requirements</u> ■ <u>BATD cannot exceed 25% of the total training hour requirements</u> ■ <u>FFS, FTD, and ATD used in combination cannot exceed 50% of the total flight training hour requirements. However, FTD or ATD cannot exceed the limitations above (Appendix B of this syllabus has more information)</u> 	<p align="center"><u>(As appropriate to the device used)</u></p>
<ul style="list-style-type: none"> ● <u>Instrument training time from a CFII including at least one cross-country flight that</u> <ul style="list-style-type: none"> ■ <u>Is in the category and class of airplane and is performed under IFR</u> ■ <u>Is a distance of at least 250 NM along airways or ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 100 NM between airports</u> ■ <u>Involves an instrument approach at each airport</u> ■ <u>Involves three different kinds of approaches with the use of navigation systems</u> 	<p align="center"><u>26</u></p>
<ul style="list-style-type: none"> ● <u>Satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation</u> 	<p align="center"><u>13, 23, 28, 29</u></p>
<p><u>Areas of Operation</u></p>	
<ul style="list-style-type: none"> ● <u>Preflight preparation</u> 	<p align="center"><u>All</u></p>
<ul style="list-style-type: none"> ● <u>Preflight procedures</u> 	<p align="center"><u>All</u></p>
<ul style="list-style-type: none"> ● <u>Air traffic control clearances and procedures</u> 	<p align="center"><u>All</u></p>
<ul style="list-style-type: none"> ● <u>Flight by reference to instruments</u> 	<p align="center"><u>All</u></p>
<ul style="list-style-type: none"> ● <u>Navigation systems</u> 	<p align="center"><u>8-29</u></p>
<ul style="list-style-type: none"> ● <u>Instrument approach procedures</u> 	<p align="center"><u>18-26, 28, 29</u></p>
<ul style="list-style-type: none"> ● <u>Emergency operations</u> 	<p align="center"><u>24-26, 28, 29</u></p>
<ul style="list-style-type: none"> ● <u>Postflight procedures</u> 	<p align="center"><u>All</u></p>

Instrument Rating Ground Training Syllabus -- Airplane Single-Engine Land

Page 18, Ground Lesson 1: Airplane Instruments, Objective, Text References, and New Additional References: These edits clarify the lesson objective, update text references, and add additional references.

Objective

To develop the pilot's knowledge [a complete understanding](#) of the airplane instruments related to instrument flying [for the safe and efficient operation under IFR conditions](#).

Text References

Gleim *Instrument Pilot Flight Maneuvers and Practical Test Prep*

Gleim *Instrument Pilot FAA Knowledge Test Prep*, Study Unit 1, "Airplane Instruments"

Gleim <i>Instrument Pilot Flight Maneuvers and Practical Test Prep</i> Reading Assignment	Gleim <i>Instrument Pilot FAA Knowledge Test Prep</i> Study Unit 1 Contents
Study Unit 8, "Airplane Flight Instruments and Navigation Equipment" Study Unit 12, "Instrument Flight"	1.1 Compass Errors 1.2 Pitot-Static System 1.3 Altimeter 1.4 Gyroscopes 1.5 Heading Indicator 1.6 Attitude Indicator 1.7 Turn-and-Slip Indicator 1.8 Turn Coordinator (TC) 1.9 Glass Cockpits Panel Displays

Additional References

[Aeronautical Information Manual \(AIM\)](#)

- [Chapter 7: Safety of Flight](#)
 - [Section 2: Barometric Altimeter Errors and Setting Procedures](#)
 - [Section 3: Cold Temperature Barometric Altimeter Errors, Setting Procedures and Cold Temperature Airports \(CTA\)](#)

[Advisory Circulars](#)

- [AC 91-26: Maintenance and Handling of Air-driven Gyroscopic Instruments](#)
- [AC 91-46: Gyroscopic Instruments – Good Operating Practices](#)

Page 19, Ground Lesson 2: Attitude Instrument Flying and Aerodynamics, Objective: These edits clarify the lesson objective.

Objective

To develop the pilot's knowledge of attitude instrument flying and the related aerodynamic factors ~~related to~~ for the safe and efficient operation of aircraft under instrument flying flight rules and conditions.

Page 20, Ground Lesson 3: Navigation Systems, Objective, Text References, and New Additional References: These edits clarify the lesson objective, update text references, and add additional references.

Objective

To further develop the pilot's knowledge of various navigation systems ~~used during~~ utilized for IFR flight operations navigation and instrument approaches.

Text References

Gleim Instrument Pilot Flight Maneuvers and Practical Test Prep

FAR/AIM

Gleim Instrument Pilot FAA Knowledge Test Prep, Study Unit 3, "Navigation Systems"

<p style="text-align: center;"><i>Gleim Instrument Pilot Flight Maneuvers and Practical Test Prep</i> Reading Assignment</p>	<p style="text-align: center;"><i>Gleim Instrument Pilot FAA Knowledge Test Prep</i> Study Unit 3 Contents</p>
<p>Study Unit 8, "Airplane Flight Instruments and Navigation Equipment" Study Unit 9, "Instrument Flight Deck Check" Study Unit 14, "Intercepting and Tracking Navigational Systems and Arcs"</p>	<p>3.1 Distance Measuring Equipment (DME) 3.2 VOR Receiver Check 3.3 Very High Frequency Omnidirectional Range (VOR) Station 3.4 Horizontal Situation Indicator (HSI) 3.5 HSI/Localizer 3.6 Global Positioning System (GPS) 3.7 Autopilots</p>
<p style="text-align: center;"><i>FAR/AIM</i> Additional Reference</p>	
<p><i>AIM</i> Chapter 1. Air Navigation</p>	

Additional References

Aeronautical Information Manual (AIM)

- Chapter 1: Air Navigation
 - Section 1: Navigation Aids
 - Section 2: Performance-Based Navigation (PBN) and Area Navigation (RNAV)

Advisory Circulars

- AC 90-100: U.S. Terminal and En Route Area Navigation (RNAV) Operations
- AC 90-108: Use of Suitable Area Navigation (RNAV) Systems on Conventional Routes and Procedures

Page 21, Ground Lesson 4: Federal Aviation Regulations, Objective and Text References: These edits clarify the lesson objective and update text references.

Objective

To develop the pilot's knowledge of ~~pertinent~~[applicable](#) federal [aviation](#) regulations for IFR flight operations.

Text References

Gleim *Instrument Pilot Flight Maneuvers and Practical Test Prep*
FAR/AIM

Gleim *Instrument Pilot FAA Knowledge Test Prep*, Study Unit 4, "Federal Aviation Regulations"

Gleim <i>Instrument Pilot Flight Maneuvers and Practical Test Prep</i> Reading Assignment	Gleim <i>Instrument Pilot FAA Knowledge Test Prep</i> Study Unit 4 Contents
Study Unit 4, "Pilot Qualifications"	4.1 14 CFR Part 1 4.2 14 CFR Part 61 4.3 14 CFR Part 91 4.4 NTSB Part 830
FAR/AIM Federal Aviation Regulations Additional Reference Reading Assignment Sections	
14 CFR Part 61 -- Certification: Pilots, Flight Instructors, and Ground Instructors Entire Part 14 CFR Part 91 -- General Operating and Flight Rules 91.1-91.421 Title 49 CFR -- NTSB Part 830 Entire Part	

Page 23, Stage Two, Stage Two Objective and Stage Two Completion Standards table: These edits clarify the objective of the stage two knowledge test and update the title of Ground Lesson 7.

Stage Two Objective

~~To~~[The objective of this stage is to](#) develop the pilot's knowledge of ATC clearances ~~the air traffic control system and procedures~~, holding procedures, and instrument approach procedures and charts. The pilot will learn about airport markings and signs, airspace, and arrival and departure procedures and charts. Additionally, the pilot will learn about aeromedical factors, aeronautical decision making [and judgment](#), and crew resource management [which includes crew communication and coordination](#).

Stage Two Completion Standards

Stage Two will have been successfully completed when the pilot passes the Stage Two knowledge test with a minimum passing grade of 80%.

<u>Lesson</u>	<u>Topic</u>	<u>Min. Time</u>
5	Airports, Air Traffic Control, and Airspace	2.5
6	Holding and Instrument Approaches	3.0
7	Aeromedical Factors, Aeronautical Decision Making, and Crew Resource Management	1.5
	Stage Two Knowledge Test	1.0

Page 24, Ground Lesson 5: Airports, Air Traffic Control, and Airspace; Objective, Text References, and New Additional References: These edits clarify the lesson objective, update text references, and add additional references.

Objective

To develop the pilot's knowledge of airports, wake turbulence and collision avoidance, [the ATC system and](#) communication procedures ~~and phraseology~~, ATC clearances, IFR flight plan and information, and the National Airspace System [for instrument flight operations](#).

Text References

Gleim *Instrument Pilot Flight Maneuvers and Practical Test Prep*
~~FAR/AIM~~

Gleim *Instrument Pilot FAA Knowledge Test Prep*, Study Unit 5, "Airports, Air Traffic Control, and Airspace"

Gleim <i>Instrument Pilot Flight Maneuvers and Practical Test Prep</i> Reading Assignment	Gleim <i>Instrument Pilot FAA Knowledge Test Prep</i> Study Unit 5 Contents
Study Unit 6, "Cross-Country Flight Planning" Study Unit 10, "Compliance with Air Traffic Control Clearances" Study Unit 15, "Departure, En Route, and Arrival Operations" Study Unit 21, "Loss of Communications"	5.1 Precision Instrument Runway Markings 5.2 Airport Signs and Markings 5.3 Visual Approach Slope Indicator (VASI) 5.4 Precision Approach Path Indicator (PAPI) 5.5 Runway Light Systems 5.6 Wake Turbulence 5.7 Collision Avoidance
FAR/AIM Additional Reference	5.8 IFR Flight Planning Information 5.9 IFR Flight Plan 5.10 ATC Clearances
AIM Chapter 2. Aeronautical Lighting and Other Airport Visual Aids AIM Chapter 3. Airspace AIM Chapter 4. Air Traffic Control AIM Chapter 5. Air Traffic Procedures	5.11 ATC Communication Procedures 5.12 Radio Communication Failure 5.13 Navigation Radio Failure 5.14 Airspace 5.15 Airport Diagram – Chart Supplement

Additional References

Aeronautical Information Manual (AIM)

- Chapter 2: Aeronautical Lighting and Other Airport Visual Aids
 - Section 1: Airport Lighting Aids
 - Section 2: Air Navigation and Obstruction Lighting
 - Section 3: Airport Marking Aids and Signs
- Chapter 3: Airspace
 - Section 1: General
 - Section 2: Controlled Airspace
 - Section 3: Class G Airspace
 - Section 4: Special Use Airspace
 - Section 5: Other Airspace Areas
- Chapter 4: Air Traffic Control
 - Section 1: Services Available to Pilots
 - Section 2: Radio Communications Phraseology and Techniques
 - Section 3: Airport Operations
 - Section 4: ATC Clearances and Aircraft Separation
 - Section 5: Surveillance Systems
- Chapter 5: Air Traffic Procedures
 - Section 1: Preflight
 - Section 2: Departure Procedures
 - Section 3: En Route Procedures
 - Section 4: Arrival Procedures
 - Section 5: Pilot/Controller Roles and Responsibilities
 - Section 6: National Security and Interception Procedures

Advisory Circulars

- AC 90-23: Aircraft Wake Turbulence
- AC 90-48: Pilots' Role in Collision Avoidance
- AC 91-63: Temporary Flight Restrictions (TFR) and Flight Limitations

Page 25, Ground Lesson 6: Holding and Instrument Approaches, Objective, Text References, and New Additional References: These edits clarify the lesson objective, update text references, and add additional references.

Objective

To develop the pilot's knowledge of holding procedures and instrument approach procedures [by use of navigation systems. The pilot will learn how to read and acquire information from instrument approach procedure charts.](#) Additionally, the pilot will learn about standard terminal arrival route (STAR) procedures and instrument departure procedures (DP).

Text References

Gleim Instrument Pilot Flight Maneuvers and Practical Test Prep

~~FAR/AIM~~

Gleim Instrument Pilot FAA Knowledge Test Prep, Study Unit 6, "Holding and Instrument Approaches"

<p style="text-align: center;"><i>Gleim Instrument Pilot Flight Maneuvers and Practical Test Prep</i> Reading Assignment</p>	<p style="text-align: center;"><i>Gleim Instrument Pilot FAA Knowledge Test Prep</i> Study Unit 6 Contents</p>
<p>Study Unit 11, "Holding Procedures" Study Unit 15, "Departure, En Route, and Arrival Operations" Part II, Section VI (Introduction) Study Unit 16, "Nonprecision Approach" Study Unit 17, "Precision Approach" Study Unit 18, "Missed Approach" Study Unit 19, "Circling Approach" Study Unit 20, "Landing from an Instrument Approach"</p>	<p>6.1 Contact and Visual Approaches 6.2 Precision Runway Monitor (PRM) 6.3 Runway Visual Range (RVR) 6.4 Missed Approaches 6.5 ILS Specifications 6.6 Unusable ILS Components 6.7 Flying the Approach 6.8 Side-Step Approaches 6.9 Holding 6.10 Instrument Approach Charts 6.11 DPs and STARs 6.12 GPS Approaches</p>
<p style="text-align: center;">FAR/AIM Additional Reference</p>	
<p>AIM Chapter 5. Air Traffic Procedures</p>	

Additional References

[Aeronautical Information Manual \(AIM\)](#)

- [Chapter 4: Air Traffic Control](#)
 - [Section 3: Airport Operations](#)
- [Chapter 5: Air Traffic Procedures](#)
 - [Section 1: Preflight](#)
 - [Section 2: Departure Procedures](#)
 - [Section 3: En Route Procedures](#)
 - [Section 4: Arrival Procedures](#)
 - [Section 5: Pilot/Controller Roles and Responsibilities](#)

Page 26, Ground Lesson 7: Aeromedical Factors, Title, Objective, Text References, and New Additional References: These edits update the lesson title, clarify the objective, update text references, and add additional references.

GROUND LESSON 7: AEROMEDICAL FACTORS, AERONAUTICAL DECISION MAKING, AND CREW RESOURCE MANAGEMENT

Objective

To further develop the pilot's knowledge of the medical factors related to instrument flight, the aeronautical decision-making (ADM) process and judgment, and crew resource management including crew communication and coordination.

Text References

Gleim Pilot Handbook

Gleim Instrument Pilot Flight Maneuvers and Practical Test Prep

FAR/AIM

Gleim Instrument Pilot FAA Knowledge Test Prep, Study Unit 7, "Aeromedical Factors"

Gleim <i>Pilot Handbook</i> Reading Assignment	Gleim <i>Instrument Pilot FAA Knowledge Test Prep</i> Study Unit 7 Contents
Study Unit 6, "Aeromedical Factors and Aeronautical Decision Making (ADM)"	7.1 Hypoxia and Hyperventilation 7.2 Spatial Disorientation 7.3 Vision and Visual Illusion 7.4 Fatigue
Gleim <i>Instrument Pilot Flight Maneuvers and Practical Test Prep</i> Reading Assignment	
Appendix A, "Risk Management Overview"	
<i>FAR/AIM</i> Additional Reference	
<i>AIM</i> Chapter 8. Medical Facts for Pilots	

Additional References

Aeronautical Information Manual (AIM)

- Chapter 8: Medical Facts for Pilots
 - Section 1: Fitness for Flight

Advisory Circulars

- AC 20-133: Cockpit Noise and Speech Interference Between Crewmembers
- AC 60-22: Aeronautical Decision Making

Page 28, Stage Three, Stage Three Objective: These edits clarify the objective of the stage three knowledge test.

Stage Three Objective

To ~~The objective of this stage is to~~ develop the pilot's knowledge of IFR cross-country flights. The pilot will learn about critical weather ~~theory as well as~~ situations and learn how to use aviation weather reports and forecasts, including how to procurement and use of those items reports along with personal observations of weather conditions to forecast weather trends. The pilot will learn about IFR en route operations and IFR en route chart interpretation. Finally, the pilot will review previously learned material with a comprehensive review of IFR flights scenarios.

Page 29, Ground Lesson 8: Aviation Weather, Objective, Text References, and Additional References: These edits clarify the lesson objective, update text references, and add additional references.

Objective

To develop the pilot's ability to recognize critical weather situations and avoid when operating an airplane. Additionally, to develop the pilot's understanding of the importance of wind shear avoidance.

Text References

[Gleim Pilot Handbook](#)

Gleim Instrument Pilot Flight Maneuvers and Practical Test Prep

Gleim Aviation Weather and Weather Services (Part I)

~~FAR/AIM~~

Gleim Instrument Pilot FAA Knowledge Test Prep, Study Unit 8, "Aviation Weather"

Gleim <i>Instrument Pilot Flight Maneuvers and Practical Test Prep</i> Reading Assignment	Gleim Pilot Handbook Reading Assignment
Study Unit 5, "Weather Information" Study Unit 7, "Airplane Systems Related to IFR Operations"	Study Unit 7, Subunit 9, "Turbulence, Wind Shear, and Wind Shear Avoidance"
Gleim <i>Aviation Weather and Weather Services</i> Part I Reading Assignment	Gleim <i>Instrument Pilot FAA Knowledge Test Prep</i> Study Unit 8 Contents
Study Unit 1, "The Earth's Atmosphere" Study Unit 2, "Temperature" Study Unit 3, "Water Vapor" Study Unit 4, "Atmospheric Pressure and Altimetry" Study Unit 5, "Wind" Study Unit 6, "Air Masses, Fronts, and the Wave Cyclone Model" Study Unit 7, "Vertical Motion" Study Unit 8, "Atmospheric Stability" Study Unit 9, "Clouds" Study Unit 10, "Precipitation" Study Unit 11, "Weather, Obstructions to Visibility, Low Ceiling, and Mountain Obscuration" Study Unit 12, "Turbulence" Study Unit 13, "Icing" Study Unit 14, "Thunderstorms"	8.1 Causes of Weather 8.2 Stability of Air Masses 8.3 Temperature Inversions 8.4 Temperature, Dew Point, and Fog 8.5 Clouds 8.6 Thunderstorms 8.7 Icing 8.8 Wind Shear 8.9 Microbursts
<i>FAR/AIM</i> Additional Reference	
<i>AIM</i> Chapter 7. Safety of Flight	

Additional References

[Aeronautical Information Manual \(AIM\)](#)

- [Chapter 4: Air Traffic Control](#)
 - [Section 3: Airport Operations](#)
- [Chapter 7: Safety of Flight](#)
 - [Section 1: Meteorology](#)
 - [Section 2: Barometric Altimeter Errors and Setting Procedures](#)
 - [Section 3: Cold Temperature Barometric Altimeter Errors, Setting Procedures and Cold Temperature Airports \(CTA\)](#)
 - [Section 4: Wake Turbulence](#)
 - [Section 6: Potential Flight Hazards](#)

Advisory Circulars

- [AC 00-6: Aviation Weather](#)
- [AC 00-24: Thunderstorms](#)
- [AC 00-30: Clear Air Turbulence Avoidance](#)
- [AC 00-54: Pilot Windshear Guide](#)
- [AC 00-57: Hazardous Mountain Winds and Their Visual Indicators](#)
- [AC 20-113: Engine Induction System and Fuel System Icing](#)
- [AC 61-134: General Aviation Controlled Flight into Terrain Awareness](#)
- [AC 91-74: Pilot Guide: Flight in Icing Conditions](#)

Page 30, Ground Lesson 9: Aviation Weather Services, Text References and New Additional References: These edits update text references and add additional references.

Text References

Gleim *Aviation Weather and Weather Services* (Part II)

FAR/AIM

Gleim *Instrument Pilot FAA Knowledge Test Prep*, Study Unit 9, “Aviation Weather Services”

Gleim <i>Aviation Weather and Weather Services</i> Part II Reading Assignment	Gleim <i>Instrument Pilot FAA Knowledge Test Prep</i> Study Unit 9 Contents
Study Unit 3, “Observations – Aviation Routine Weather Reports (METAR) and Special Weather Reports (SPECI)” Study Unit 4, “Observations – Aircraft Observations and Reports” Study Unit 5, “Observations – Radar Observations” Study Unit 10, “Analysis – Surface Analysis Charts” Study Unit 11, “Analysis – Ceiling and Visibility” Study Unit 12, “Analysis – Upper-Air Analyses” Study Unit 13, “Forecasts – Significant Meteorological Information (SIGMET)” Study Unit 14, “Forecasts – Airmen’s Meteorological Information (AIRMET)” Study Unit 15, “Forecasts – Graphical Airman’s Meteorological Advisory (G-AIRMET)” Study Unit 16, “Forecasts – Center Weather Advisory (CWA)” Study Unit 18, “Forecasts – Additional Products for Convection” Study Unit 23 ²⁴ , “Forecasts – Terminal Aerodrome Forecasts (TAF)” Study Unit 25 ²⁶ , “Forecasts – Wind and Temperature Aloft” Study Unit 26 ²⁷ , “Forecasts – Freezing-Level Graphics” Study Unit 28 ²⁹ , “Forecasts – Short-Range Surface Prognostic (Prog) Charts” Study Unit 29 ³⁰ , “Forecasts – Significant Weather (SIGWX) Forecast” Study Unit 34 ³² , “Forecasts – Additional Products for Icing and Turbulence”	9.1 AIRMETs and SIGMETs 9.2 Aviation Routine Weather Report (METAR) 9.3 Pilot Weather Reports (PIREPs) Aircraft Observations and Reports 9.4 Terminal Aerodrome Forecast (TAF) 9.5 Winds and Temperatures Aloft Forecast (FB) 9.6 Low-Level Significant Weather Prog 9.7 Graphical Forecasts for Aviation (GFAs) 9.8 High-Level Significant Weather Prog 9.9 In-Flight Weather Advisories 9.10 Miscellaneous Charts and Forecasts
<i>FAR/AIM</i> Additional Reference	
<i>AIM</i> Chapter 7. Safety of Flight	

Additional References

[Aeronautical Information Manual \(AIM\)](#)

- [Chapter 4: Air Traffic Control](#)
 - [Section 3: Airport Operations](#)
- [Chapter 7: Safety of Flight](#)
 - [Section 1: Meteorology](#)
 - [Section 2: Barometric Altimeter Errors and Setting Procedures](#)
 - [Section 3: Cold Temperature Barometric Altimeter Errors, Setting Procedures and Cold Temperature Airports \(CTA\)](#)
 - [Section 4: Wake Turbulence](#)
 - [Section 6: Potential Flight Hazards](#)

Advisory Circulars

- [AC 00-45: Aviation Weather Services](#)
- [AC 00-63: Use of Flight Deck Displays of Digital Weather and Aeronautical Information](#)

Page 31, Ground Lesson 10: IFR En Route, Text References and New Additional References: These edits update text references and add additional references.

Text References

Gleim Instrument Pilot Flight Maneuvers and Practical Test Prep

~~*FAR/AIM*~~

Gleim Instrument Pilot FAA Knowledge Test Prep, Study Unit 10, "IFR En Route"

<p><i>Gleim Instrument Pilot Flight Maneuvers and Practical Test Prep</i> Reading Assignment</p>	<p><i>Gleim Instrument Pilot FAA Knowledge Test Prep</i> Study Unit 10 Contents</p>
<p>Study Unit 10, "Compliance with Air Traffic Control Clearances" Appendix C, section "IFR Altitudes Defined"</p>	<p>10.1 Minimum IFR Altitudes 10.2 VFR-on-Top 10.3 IFR En Route Chart Interpretation</p>
<p><i>FAR/AIM</i> Additional Reference</p>	
<p><i>AIM Chapter 5. Air Traffic Procedures</i> <i>AIM Chapter 9. Aeronautical Charts and Related Publications</i></p>	

Additional References

[Aeronautical Information Manual \(AIM\)](#)

- [Chapter 5: Air Traffic Procedures](#)
 - [Section 1: Preflight](#)
 - [Section 3: En Route Procedures](#)
 - [Section 5: Pilot/Controller Roles and Responsibilities](#)
- [Chapter 9: Aeronautical Charts and Related Publications](#)
 - [Section 1: Types of Charts Available](#)

[Advisory Circulars](#)

- [AC 91-78: Use of Class 1 or Class 2 Electronic Flight Bag \(EFB\)](#)
- [AC 90-100: U.S. Terminal and En Route Area Navigation \(RNAV\) Operations](#)
- [AC 90-108: Use of Suitable Area Navigation \(RNAV\) Systems on Conventional Routes and Procedures](#)

Page 32, Ground Lesson 11: IFR Flights, Objective, Text References, and New Additional References: These edits clarify the lesson objective, update text references, and add additional references.

Objective

To further develop the pilot's knowledge of ~~basic~~ IFR cross-country flight planning procedures. Additionally, the pilot will review applicable regulations and procedures for IFR flight operations and apply the use and interpretation of IFR en route and instrument approach procedure charts.

Text References

Gleim *Instrument Pilot Flight Maneuvers and Practical Test Prep* (review as necessary)

~~FAR/AIM~~

Gleim *Instrument Pilot FAA Knowledge Test Prep*, Study Unit 11, "IFR Flights"

Gleim <i>Instrument Pilot Flight Maneuvers and Practical Test Prep</i> Part II Contents	Gleim <i>Instrument Pilot FAA Knowledge Test Prep</i> Study Unit 11 Contents
I. Preflight Preparation II. Preflight Procedures III. Air Traffic Control Clearances and Procedures IV. Flight by Reference to Instruments V. Navigation Systems VI. Instrument Approach Procedures VII. Emergency Operations VIII. Postflight Procedures	11.1 GJT to / From DRO 11.2 MFR to / From EUG 11.3 YKM to / From PDX 11.4 SBA to / From PRB 11.5 HOT to / From ADS 11.6 21XS to / From DFW 11.7 4N1 to / From BDL 11.8 HLN to / From BIL
FAR/AIM Additional Reference	
AIM Chapter 4. Air Traffic Control AIM Chapter 5. Air Traffic Procedures AIM Chapter 6. Emergency Procedures	

Additional References

[Aeronautical Information Manual \(AIM\)](#)

- [Chapter 4: Air Traffic Control](#)
 - [Section 1: Services Available to Pilots](#)
 - [Section 2: Radio Communications Phraseology and Techniques](#)
 - [Section 3: Airport Operations](#)
 - [Section 4: ATC Clearances and Aircraft Separation](#)
 - [Section 5: Surveillance Systems](#)
- [Chapter 5: Air Traffic Procedures](#)
 - [Section 1: Preflight](#)
 - [Section 2: Departure Procedures](#)
 - [Section 3: En Route Procedures](#)
 - [Section 4: Arrival Procedures](#)
 - [Section 5: Pilot/Controller Roles and Responsibilities](#)
 - [Section 6: National Security and Interception Procedures](#)
- [Chapter 6: Emergency Procedures](#)
 - [Section 1: General](#)
 - [Section 2: Emergency Services Available to Pilots](#)
 - [Section 3: Distress and Urgency Procedures](#)
 - [Section 4: Two-way Radio Communications Failure](#)
 - [Section 5: Aircraft Rescue and Fire Fighting Communications](#)

Instrument Rating Flight Training Syllabus Airplane Single-Engine Land

Page 38, Flight Training Course Completion Standards: The edits to this page remove the table containing CFI grading methods and direct the reader to the new Training Record Grading Legend added to the Introduction in this update.