



# The Pilot's Manual

# Flight Instructor Syllabus

**Second Edition**

A Flight & Ground Training Course for Certified Flight Instructor (CFI) Certification based on *The Pilot's Manual: Flight School* and *Ground School* textbooks.

Meets Part 61 and 141 Requirements



**ASA-PM-S-CFI2-PD**

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Visit the ASA website often, as any updates due to FAA regulatory and procedural changes will be posted there: [www.asa2fly.com](http://www.asa2fly.com)

**ASA-PM-S-CFI2-PD**

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# About This Syllabus

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## **Course Objective**

The objective of this syllabus is for the applicant to acquire the necessary aeronautical knowledge and flight proficiency to meet the requirements for an initial flight instructor (CFI) certificate with an airplane category and single-engine land class rating as well as an advanced ground instructor (AGI) certificate.

## **Prerequisites**

The applicant must be able to read, speak, write, and understand the English language, meet the physical standards for a third-class medical certificate, be at least 18 years of age, and must hold either a commercial or airline transport pilot certificate with an instrument rating for airplane single-engine land.

## **Flight Instructor Certification Course**

The flight instructor certificate is made up of two requirements: **aeronautical knowledge** and **flight training**. This syllabus is written to satisfy the requirements of both 14 CFR Parts 141 and 61. The syllabus consists of 4 stages containing multiple modules; each stage is designed to meet a particular requirement of training as outlined in Parts 141 and 61. The applicant will begin training in Stage 1, learning about the role of the flight instructor and the fundamentals of instructing. In Stages 2 and 3, the applicant is required to present a ground training or preflight training lesson plan.

To assist in the development of these lesson plans, references are given for each module that directly correspond to the module's content. It is recommended that students use all available resources, including those above and beyond what is listed for the lesson plan. Each module assignment should be completed prior to moving on to the next module.

Stage 4 consists of an end-of-course check, or practice practical test, which is used to determine if the student has achieved the necessary training level that meets the standards required of a flight instructor. This stage is divided into two modules but can be completed as one at the discretion of the instructor.

## **Testing Procedures**

Stages 1 through 3 include an end-of-stage exam that reviews the aeronautical knowledge and flight proficiency that was covered in each stage. Applicants are required to score 80% or higher and exams should be reconciled to 100%. Prior to moving on to the next stage the applicant will satisfactorily complete the FAA Knowledge Exam that corresponds to that stage, as outlined in the stage's completion standards. The FAA requires a minimum score of 70% on all knowledge exams.

The Stage 4 practice practical test is to be conducted by the Chief or Assistant Chief Flight Instructor, Designated Check Instructor, or FAA Pilot Examiner. The applicant must demonstrate the Practical Test Standards for Commercial Pilot and Flight Instructor for successful completion of this stage.

## **Minimum Requirements**

To meet the requirements of 14 CFR Part 141, the applicant must complete a minimum of 40 hours of aeronautical knowledge training and 25 hours of flight training. A breakdown of these requirements can be found in the course compliance table. For the purpose of this syllabus, Ground Instruction and Preflight Lesson Instruction count towards the 40-hour minimum. Module hour requirements can be used as a guideline and adjusted, as long as minimum stage totals are met. The applicant should feel comfortable performing each task in all previous modules before progressing to the next stage.

Instruction in a flight simulator that meets the requirements of §141.41(a) may be credited for a maximum of 10 percent of the total flight training hours requirement. Instruction in a flight simulator that meets the requirements of §141.41(b) may be credited for a maximum of 5 percent of the total flight training hours requirement.

## **Required Materials** (use most current edition of each)

*FAA Aviation Instructor's Handbook* (ASA-8083-9)

*The Pilot's Manual: Ground School* (ASA-PM-2)

*The Pilot's Manual: Flight School* (ASA-PM-1)

*Lesson Plans to Train Like You Fly* by Arlynn McMahon (LESSON-PLANS)

FAA Advisory Circular (AC) 61-65

## **Recommended Materials**

*ASA FAR/AIM* (ASA-FR-AM-BK, updated annually)

*The Flight Instructor's Manual* by William K. Kershner (ASA-FM-CFI)

*Flight Instructor Oral Exam Guide* by Michael D. Hayes (ASA-OEG-CFI)

*The Flight Instructor's Survival Guide* by Arlynn McMahon (ASA-CFI-SG)

[FITS Flight Instructor Training Module V1.1](#) (FAA)

*FAA Practical Test Standards, Flight Instructor* (ASA-8081-6)

*FAA Practical Test Standards, Commercial Pilot* (ASA-8081-12)

*FAA Practical Test Standards, Private Pilot* (ASA-8081-14)

*ASA Instructor Test Prep* (ASA-TP-CFI, updated annually)

*FAA Pilot's Handbook of Aeronautical Knowledge* (ASA-8083-25)

*ASA Instructor Test Prep*, or *Prepware* software, is recommended to enhance the program. Test preps will ensure the applicant is prepared for the FAA Knowledge Exams that correspond to this course of training. Applicants enrolled in this course should use all available resources in the design and application of lesson plans.

If you have any comments or questions about how to best use this syllabus, please call ASA at 1-800-ASA-2-FLY. We are happy to provide suggestions on how to tailor this syllabus to specifically meet your training needs. Answers to stage exams are available upon request and with confirmation of instructor status; email [cfi@asa2fly.com](mailto:cfi@asa2fly.com), or fax your request on letterhead to 1-425-235-0128.

# CFI Minimum Course Hours

## Part 141 Appendix F Compliance

These course times are for student/instructor guidance only. They comprise a suggested time schedule that will ensure minimum flight and ground training compliance with Part 141.

**Note: Ground Instruction should include classroom discussion, and pre- and post-flight briefings.**

Page		Date	Ground Instruction	Preflight Lesson Instruction	Flight Instruction	Exam	Score
1	<b>Stage 1</b>						
2	Module 1		1.0				
3	Module 2		1.0				
4	Module 3		1.0				
5	Module 4		1.0				
6	Module 5		1.0				
7	Module 6		1.0				
8	Module 7		2.0				2.0
	STAGE TOTALS		<b>8.0</b>				<b>2.0</b>
9	<b>Stage 2</b>						
10	Module 8		1.0				
11	Module 9		1.0				
12	Module 10		1.0				
13	Module 11		1.0				
14	Module 12		1.0				
15	Module 13		1.0				
16	Module 14		1.0				
17	Module 15		1.0				
18	Module 16		1.0				
19	Module 17		1.0				
20	Module 18		1.0				
21	Module 19		1.0				
22	Module 20		1.0				
23	Module 21		1.0				
24	Module 22		1.0				
26	Module 23		1.0				
27	Module 24		1.0				
28	Module 25		1.0				2.0
	STAGE TOTALS		<b>18.0</b>				<b>2.0</b>
29	<b>Stage 3</b>						
30	Module 26			.75		1.5	
31	Module 27			.75		1.5	
32	Module 28			.75		1.5	
33	Module 29			.75		1.5	
34	Module 30			.75		1.5	
35	Module 31			.75		1.5	
36	Module 32			.75		1.5	
37	Module 33			.75		1.5	
38	Module 34			.75		1.5	
39	Module 35			.75		1.5	

40	Module 36			.75		1.5			
41	Module 37			.75		1.5			
42	Module 38			.75		1.5			
42	Module 39			1.5		2.0			
43	Module 40		1.0	.75		1.5		2.0	
	STAGE TOTALS		<b>1.0</b>	<b>12.0</b>		<b>23.0</b>		<b>2.0</b>	
<b>45</b>	<b>Stage 4</b>								
46	Module 41		2.0						
47	Module 42			1.0		2.0			
	STAGE TOTALS		2.0	1.0		2.0			
	<b>COURSE TOTAL</b>		<b>29.0</b>		<b>13.0</b>		<b>25.0</b>		<b>4.0</b>
	FAA Fundamentals of Instructing Knowledge Exam								Date/Score:
	FAA Advanced Ground Instructor Knowledge Exam								Date/Score:
	FAA Flight Instructor Airplane Knowledge Exam								Date/Score:

These are the aeronautical knowledge subjects and flight tasks required for §141 compliance and where they are covered within this syllabus.

<b>Part 141 Appendix F — Ground Training</b>		<b>Covered in Syllabus</b>
<b>1</b>	The fundamentals of instructing	Stage 1, all Modules
<b>2</b>	The aeronautical knowledge areas in which training is required for a recreational, private, and commercial pilot certificate that is appropriate to the aircraft category and class rating for which the course applies	Stage 2, all Modules

<b>Part 141 Appendix F — Flight Training</b>		<b>Covered in Syllabus</b>
Fundamentals of instructing		Stage 4 Modules 41, 42
Technical subject areas		Stage 4 Module 41
Preflight preparation		Stage 4 Module 41
Preflight lesson on a maneuver to be performed in flight		Stage 4 Module 42
Preflight procedures		Stage 4 Module 42
Airport and seaplane base operations		Stage 4 Module 42
Takeoffs, landings and go-arounds		Stage 3 and 4 All Modules
Fundamentals of flight		Stage 3 Modules 28, 39 Stage 4 Module 42
Performance maneuvers		Stage 3 Modules 35, 39 Stage 4 Module 42
Ground reference maneuvers		Stage 3 Modules 35, 36, 39 Stage 4 Module 42
Slow flight, stalls and spins		Stage 3 Modules 27, 30, 31, 39, 40 Stage 4 Module 42
Basic instrument maneuvers		Stage 3 Modules 29, 39 Stage 4 Module 42
Emergency operations		Stage 3 Modules 38, 39 Stage 4 Module 42
Postflight procedures		Stage 3 all Modules Stage 4 all Modules

# Enrollment Certificate

This is to certify that

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*Student Name*

is enrolled in the Federal Aviation Administration approved  
**Flight Instructor Certification Course**, conducted by

---

*School and Certificate Number*

---

*Chief Instructor*

---

*Date of Enrollment*

# Graduation Certificate

This is to certify that

---

*Pilot Name and Number*

has satisfactorily completed each required stage of the approved course of training including the tests for those stages, and has received \_\_\_\_\_ hours of cross-country training.

\_\_\_\_\_ has graduated from the Federal Aviation Administration approved **Flight Instructor Certification Course** conducted by

---

*School and Certificate Number*

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*Chief Instructor*

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*Date of Graduation*

# **Stage 1**

## Fundamentals of Instructing

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### **Objective**

The objective of Stage 1 is for the applicant to receive the aeronautical knowledge training required in relation to the fundamentals of instructing. The applicant will gain insight into the role of a flight instructor and receive training on the fundamentals of instructing. At the completion of Stage 1, the applicant will have the knowledge needed to take the FAA Fundamentals of Instructing (FOI) Knowledge Exam.

### **Ground Training: Minimum 8 hours**

- Being a Flight Instructor
- Human Behavior and Effective Communication
- The Learning Process
- The Teaching Process
- Assessment and Critique
- Techniques of Flight Instruction and Risk Management
- Planning Instructional Activity

### **Completion Standards**

Stage 1 is complete when the student achieves the objective of each module, and can demonstrate the knowledge of the aeronautical topics outlined. The student must score at least 80% on the fundamentals of instructing stage exam; all deficient answers should be corrected to 100%. Prior to completing Stage 1, the applicant must pass the FAA Fundamentals of Instructing (FOI) Knowledge Exam.

# Stage 1/Module 1

## Being a Flight Instructor

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will be introduced to the role of the flight instructor including requirements and responsibilities.

### **References:**

*Aviation Instructor's Handbook*, Chapter 7

*FAR/AIM*

[https://www.faa.gov/news/safety\\_briefing/2014/media/SepOct2014.pdf](https://www.faa.gov/news/safety_briefing/2014/media/SepOct2014.pdf)

### **Content:**

- Flight instructor requirements (14 CFR Part 61, Subpart H)
- Practical Test Standards (FAA-S-8081-6)
  - Special emphasis areas
  - Transition to airman certification standards (ACS)
- The Right Seat
  - Different perspective than flying left seat
  - Standards must be maintained while flying from right seat
- Aviation instructor responsibilities
  - Helping students learn
  - Providing adequate instruction
  - Standards of performance
  - Minimizing student frustrations
- Flight instructor responsibilities
  - Physiological obstacles for flight students
  - Ensuring student ability
- Professionalism
- Evaluation of student ability
- Aviation instructor exams
- Professional development

### **Completion Standards:**

The module is successfully completed when the applicant has read Chapter 7 of the *Aviation Instructor's Handbook* and demonstrated a comprehensive understanding of the above outlined content as determined by the training provider.

### **Assignment:**

*Aviation Instructor's Handbook*, Chapters 1 and 3

## Stage 1/Module 2

# **Human Behavior and Effective Communication**

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will gain an understanding of human behavior and effective communication as they relate to the fundamentals of instructing.

### **References:**

*Aviation Instructor's Handbook*, Chapters 1 and 3

### **Content:**

- Human Behavior
  - Definitions of human behavior
- Human needs and motivation
  - Maslow's hierarchy of needs
- Defense mechanisms
  - Repression, denial, compensation, projection, rationalization, reaction formation, fantasy, displacement
- Student emotional reactions
  - Anxiety
  - Normal reactions to stress vs. abnormal reactions to stress
  - Actions regarding seriously abnormal students
- Effective communication
- Basic elements of communication
  - Source, symbol, receiver
- Barriers to effective communication
- Developing communication skills

### **Completion Standards:**

The module is successfully completed when the applicant has read Chapters 1 and 3 of the *Aviation Instructor's Handbook* and demonstrated a comprehensive understanding of the above outlined content as determined by the training provider.

### **Assignment:**

*Aviation Instructor's Handbook*, Chapter 2

# Stage 1/Module 3

## The Learning Process

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will gain an understanding of the learning process, theory, and types of training, as they relate to the fundamentals of instructing.

### **References:**

*Aviation Instructor's Handbook*, Chapter 2

### **Content:**

- The Learning Process
- Learning theory
  - Behaviorism, cognitive theory
  - Bloom's Taxonomy of the Cognitive Domain
- Perceptions and insight
  - Sight, hearing, touch, smell, taste
  - Factors affecting perceptions
  - Creating insight
- Acquiring knowledge
  - Memorization, understanding, concept learning
- The laws of learning: readiness, effect, exercise, primacy, intensity, recency
- Domains of learning: cognitive, affective, psychomotor
  - Levels of learning: rote, understanding, application, correlation
- Characteristics of learning
- Acquiring skill knowledge
  - Stages of skill acquisition
  - Learning plateaus
- Types of practice
  - Deliberate, blocked, random
- Scenario-based training
- Errors
  - Slip, mistake
  - Reducing error, error recovery, learning from error
- Memory and forgetting
  - Sensory memory, short-term, long-term
  - Why people forget
- Retention of learning
- Transfer of learning

### **Completion Standards:**

The module is successfully completed when the applicant has read Chapter 2 of the *Aviation Instructor's Handbook* and demonstrated a comprehensive understanding of the above outlined content as determined by the training provider.

### **Assignment:**

*Aviation Instructor's Handbook*, Chapter 4

## Stage 1/Module 4

# The Teaching Process

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will gain an understanding of the teaching process as it relates to the fundamentals of instructing.

### **References:**

*Aviation Instructor's Handbook*, Chapter 4

### **Content:**

- The Teaching Process
- Preparation of a lesson, objectives and standards
  - Performance-based objectives
  - Decision-based objectives
- Organization of material
  - Introduction, development, conclusion
- Training delivery methods
  - Lecture method
  - Guided discussion method
  - Computer-assisted learning method
  - Demonstration-performance method
  - Drill and practice method
- Problem based learning
  - Teaching higher order thinking skills
  - Types of problem-based instruction
- Instructional aids and training technologies
  - Types of instructional aids
- Test preparation materials
  - Paper, video, and computer software products available from [asa2fly.com](http://asa2fly.com)

### **Completion Standards:**

The module is successfully completed when the applicant has read Chapter 4 of the *Aviation Instructor's Handbook* and demonstrated a comprehensive understanding of the above outlined content as determined by the training provider.

### **Assignment:**

*Aviation Instructor's Handbook*, Chapter 5

## Stage 1/Module 5

# Assessment and Critique

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will gain an understanding of assessments and critiques as they relate to the fundamentals of instructing.

### **References:**

*Aviation Instructor's Handbook*, Chapter 5

### **Content:**

- Assessment
  - Purpose of an assessment
  - General characteristics of an effective assessment
  - Traditional assessment
  - Authentic assessment
  - Oral assessment
  - Characteristics of effective questioning
  - Types of questions to avoid
- Critique
  - Instructors/student critique
  - Student-lead critique
  - Small group critique
  - Individual student critique by another student
  - Self-critique
  - Written critique

### **Completion Standards:**

The module is successfully completed when the applicant has read Chapter 5 of the *Aviation Instructor's Handbook* and demonstrated a comprehensive understanding of the above outlined content as determined by the training provider.

### **Assignment:**

*Aviation Instructor's Handbook*, Chapters 8 and 9

## Stage 1/Module 6

# **Techniques of Flight Instruction and Risk Management**

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will gain an understanding of flight instructor techniques and risk management practices as they relate to the fundamentals of instructing.

### **References:**

*Aviation Instructor's Handbook*, Chapters 8 and 9

### **Content:**

- Techniques of flight instruction
  - Obstacle in learning during flight instruction
  - Demonstration-performance training delivery
  - Positive exchange of flight controls
  - Sterile cockpit
  - Use of distractions
  - Integrated flight instruction
  - Assessment of piloting ability
  - Aeronautical decision making
  - Five hazardous attitudes
- Risk management
  - Principles of risk management
  - Risk management process
  - Level of risk
  - Assessing risk
  - Mitigating risk
  - IMSAFE checklist: illness, medication, stress, alcohol, fatigue, eating
  - PAVE checklist: pilot-in-command, aircraft, environment, and external pressures
  - 5P checklist: plan, plane, pilot, passengers, programming

### **Completion Standards:**

The module is successfully completed when the applicant has read Chapters 8 and 9 of the *Aviation Instructor's Handbook* and demonstrated a comprehensive understanding of the above outlined content as determined by the training provider.

### **Assignment:**

*Aviation Instructor's Handbook*, Chapter 6  
FITS Flight Instructor Training Module V1.1

## Stage 1/Module 7

# Planning Instructional Activity

Minimum 141 Requirements: 2.0 hours ground instruction + Stage Exam

### **Objective:**

The applicant will gain an understanding of planning instructional activity as it relates to the fundamentals of instructing, and learn about the FAA-sponsored FITS program.

### **References:**

*Aviation Instructor's Handbook*, Chapter 6

Flight Instructor Training Module V1.1

### **Content:**

- Planning instructional activity
- Building blocks of learning
- Training syllabus (sample syllabus in Appendix)
  - Format and content
  - How to use a training syllabus
- Lesson plans (sample lesson plans in Appendix)
  - Purpose
  - Characteristics of a well-planned lesson
  - How to use a lesson plan properly
  - Lesson plan formats
- Scenario-based training
  - SBT lesson plan
- FAA Industry Training Standards (FITS V1.1)
  - Introduction to program and terminology
  - Program overview
  - FITS training syllabus
  - Resources

### **Completion Standards:**

The module is successfully completed when the applicant has read Chapter 6 of the *Aviation Instructor's Handbook* and demonstrated a comprehensive understanding of the above outlined content as determined by the training provider. The applicant must also pass the Fundamentals of Instructing Stage Exam with a minimum score of 80%; all deficient answers should be corrected to 100%.

### **Assignment:**

Prepare for the Fundamentals of Instructing FAA Knowledge Exam. The test will contain 50 questions and requires a minimum score of 70% for passing.

# **Stage 2**

## Aeronautical Knowledge

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### **Objective**

In Stage 2, the applicant will gain proficiency in the practical implementation of aviation ground training, and apply the fundamentals of instructing principles through the proper planning, presentation, and delivery of lesson plans. Applicants will further attain the aeronautical knowledge required to instruct private and commercial students. At the completion of Stage 2, the applicant will have the knowledge needed to take the Advanced Ground Instructor (AGI) Knowledge Exam.

### **Ground Training: Minimum 18 hours**

- Principles of flight
- Airplane flight controls
- Operation of systems
- Performance and limitations
- Airplane weight and balance
- Aeromedical factors
- Visual scanning and collision avoidance
- High altitude operations
- Weather information
- Regulations and publications
- Certificates and documents
- Airworthiness requirements
- Navigation and flight planning
- National Airspace System
- Airport operations and runway incursion avoidance
- Night operations
- Navigation aids
- Logbook entries and certificate endorsements

### **Completion Standards**

The applicant will have successfully completed the objective of each module in Stage 2. A minimum passing score of 80% is required for the Advanced Ground Instructor end-of-stage exam, and all deficient areas will be corrected to 100%. Prior to completing Stage 2, the applicant must pass the FAA Advanced Ground Instructor (AGI) Knowledge Exam.

### **Assignment**

Read *The Pilot's Manual: Ground School* (ASA-PM-2), Chapters 1 through 3  
Construct lesson plan for Module 8

## Stage 2/Module 8

# Principles of Flight

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will demonstrate the instructional and aeronautical knowledge required to teach the elements associated with the principles of flight.

### **References:**

*Ground School* (ASA-PM-2), Chapters 1, 2, 3, 4

### **Content:**

- Airfoil design characteristics
- Airplane stability and controllability
- Turning tendency (torque effect)
- Load factors in airplane design
- Wingtip vortices and precautions to be taken

### **Completion Standards:**

This module is complete when the applicant has constructed a lesson plan for Module 8 and is found competent to instruct on the principals of flight as determined by the training provider or supervising instructor.

### **Assignment:**

Read *Ground School* (PM-2), Chapter 4

Construct lesson plan for Module 9

## Stage 2/Module 9

# Airplane Flight Controls

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will demonstrate the instructional and aeronautical knowledge required to teach the elements associated with airplane flight controls.

### **References:**

*Ground School* (ASA-PM-2), Chapter 4

### **Content:**

- Primary flight controls
- Secondary flight controls
- Trim controls

### **Completion Standards:**

This module is complete when the applicant has constructed a lesson plan for Module 9 and is found competent to instruct in the subject of airplane flight controls as determined by the training provider or supervising instructor.

### **Assignment:**

Read *Ground School*, Chapters 5, 6, 7

Construct lesson plan for Module 10

## Stage 2/Module 10

# Operation of Systems

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will demonstrate the instructional and aeronautical knowledge required to teach the elements associated with the operation of systems.

### **References:**

*Ground School*, Chapters 5, 6, 7

### **Content:**

- Primary and secondary flight controls
- Trim
- Powerplant and propeller
- Landing gear
- Fuel, oil, and hydraulic
- Electrical
- Avionics including autopilot
- Pitot static, vacuum/pressure and associated instruments
- Environmental
- Deicing and anti-icing

### **Completion Standards:**

This module is complete when the applicant has constructed a lesson plan for Module 10 and is found competent to instruct on the operation of systems as determined by the training provider or supervising instructor.

### **Assignment:**

Read *Ground School*, Chapters 8, 9, 10

Construct lesson plan for Module 11

## Stage 2/Module 11

# Performance and Limitations

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will demonstrate the instructional and aeronautical knowledge required to teach the elements associated with performance and limitations.

### **References:**

*Ground School*, Chapters 8, 9, 10

### **Content:**

- Determination of weight and balance condition
- Use of performance charts, tables, and other data in determining performance in various phases of flight
- Effects of exceeding airplane limitations
- Effects of atmospheric conditions on performance
- Factors to be considered in determining that the required performance is within the airplane's capabilities

### **Completion Standards:**

This module is complete when the applicant has constructed a lesson plan for Module 11 and is found competent to instruct in the subject of performance and limitations as determined by the training provider or supervising instructor.

### **Assignment:**

Read *Ground School*, Chapter 11

Construct lesson plan for Module 12

## Stage 2/Module 12

# Airplane Weight and Balance

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will demonstrate the instructional and aeronautical knowledge required to teach the elements associated with airplane weight and balance.

### **References:**

*Ground School*, Chapter 11

### **Content:**

- Weight and balance terms
- Effect of weight and balance on performance
- Methods of weight and balance control
- Determination of total weight and center of gravity and the changes that occur when adding, removing, or shifting weight

### **Completion Standards:**

This module is complete when the applicant has constructed a lesson plan for Module 12 and is found competent to instruct on the subject of airplane weight and balance as determined by the training provider or supervising instructor.

### **Assignment:**

Read *Ground School*, Chapter 12

Construct lesson plan for Module 13

## Stage 2/Module 13

# Aeromedical Factors

Minimum 141 Requirements: 1.0 hour ground instruction

### **Lesson Objective:**

The applicant will demonstrate the instructional and aeronautical knowledge required to teach the elements associated with aeromedical factors.

### **References:**

*Ground School*, Chapter 12

### **Content:**

- How to obtain an appropriate medical certificate
- How to obtain a medical certificate in the event of a possible medical deficiency
- The causes, symptoms, effects, and corrective action of the following medical factors:
  - Hypoxia
  - Hyperventilation
  - Middle ear and sinus problems
  - Spatial disorientation
  - Motion sickness
  - Carbon monoxide poisoning
  - Fatigue and stress
  - Dehydration
  - Aeronautical decision making and judgment
- The effects of alcohol and drugs, including over-the-counter (OTC) medication, and their relationship to flight safety
- The effect of nitrogen excesses incurred during scuba dives and how this affects pilots and passengers during flight

### **Completion Standards:**

This module is complete when the applicant has constructed a lesson plan for Module 13 and is found competent to instruct on aeromedical factors as determined by the training provider or supervising instructor.

### **Assignment:**

Construct lesson plan for Module 14

## Stage 2/Module 14

# Visual Scanning and Collision Avoidance

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will demonstrate the instructional and aeronautical knowledge required to teach the elements associated with visual scanning and collision avoidance.

### **References:**

*Ground School*, Chapter 12

### **Content:**

- Relationship between a pilot's physical condition and vision
- Environmental conditions that degrade vision
- Vestibular and visual illusions
- "See and avoid" concept
- Proper visual scanning procedure
- Relationship between poor visual scanning habits and increased collision risk
- Proper clearing procedures
- Importance of knowing aircraft blind spots
- Relationship between aircraft speed differential and collision risk
- Situations that involve the greatest collision risk

### **Completion Standards:**

This module is complete when the applicant has constructed a lesson plan for Module 14 and is found competent to instruct on the subjects of visual scanning and collision avoidance as determined by the training provider or supervising instructor.

### **Assignment:**

Construct lesson plan for Module 15

## Stage 2/Module 15

# High Altitude Operations

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will demonstrate the instructional and aeronautical knowledge required to teach the elements associated with high altitude operations.

### **References:**

*Ground School*, Chapter 12

### **Content:**

- Regulatory requirements for use of oxygen
- Physiological hazards associated with high altitude operations
- Characteristics of a pressurized airplane and various types of supplemental oxygen systems
- Importance of “aviator’s breathing oxygen”
- Care and storage of high-pressure oxygen bottles
- Problems associated with rapid decompression and corresponding solutions
- Fundamental concept of cabin pressurization
- Operation of a cabin pressurization system

### **Completion Standards:**

This module is complete when the applicant has constructed a lesson plan for Module 15 and is found competent to instruct on the subject of high altitude operations as determined by the training provider or supervising instructor.

### **Assignment:**

Read *Ground School*, Chapters 13 through 18

Construct lesson plan for Module 16

## Stage 2/Module 16

# Weather Information

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will demonstrate the instructional and aeronautical knowledge required to teach the elements associated with weather information.

### **References:**

*Ground School*, Chapters 13 through 18

### **Content:**

- Importance of a thorough preflight weather briefing
- Various means and sources of obtaining weather information
- Use of real-time weather reports, forecasts, and charts for developing scenario-based training
- In-flight weather advisories
- Recognition of aviation weather hazards, including wind shear
- Factors to be considered in making a “go/no-go” decision

### **Completion Standards:**

This module is complete when the applicant has constructed a lesson plan for Module 16 and is found competent to instruct on weather information as determined by the training provider or supervising instructor.

### **Assignment:**

Read *Ground School*, Chapter 19

Construct lesson plan for Module 17

## Stage 2/Module 17

# Regulations and Publications

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will demonstrate the instructional and aeronautical knowledge required to teach the elements associated with Title 14, Code of Federal Regulations, and additional pertinent aviation publications.

### **References:**

*Ground School*, Chapter 19

### **Content:**

- Availability and method of revision of 14 CFR Parts 1, 61, 91, and NTSB Part 830 by describing:
  - Purpose
  - General content
- Availability of flight information publications, advisory circulars, practical test standards and airman certification standards, Aeronautical Information Manual, FAA training handbooks, pilot operating handbooks, and FAA-approved airplane flight manuals by describing:
  - Availability
  - Purpose
  - General content

### **Completion Standards:**

This module is complete when the applicant has constructed a lesson plan for Module 17 and is found competent to instruct on 14 CFR and additional publications as determined by the training provider or supervising instructor.

### **Assignment:**

Construct lesson plan for Module 18

## Stage 2/Module 18

# Certificates and Documents

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will demonstrate the instructional and aeronautical knowledge required to teach the elements associated with certificates and documents.

### **References:**

*Ground School*, Chapter 19

### **Content:**

- The training requirements for the issuance of a sport, recreational, private, commercial, and ATP pilot certificate
- The privileges and limitations of pilot certificates and ratings at sport, recreational, private, and commercial levels
- Class and duration of medical certificates
- Recent pilot flight experience requirements
- Required entries in pilot logbook or flight record

### **Completion Standards:**

This module is complete when the applicant has constructed a lesson plan for Module 18 and is found competent to instruct on certificates and documents as determined by the training provider or supervising instructor.

### **Assignment:**

Construct lesson plan for Module 19

## Stage 2/Module 19

# Airworthiness Requirements

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will demonstrate the instructional and aeronautical knowledge required to teach the elements associated with airworthiness requirements.

### **References:**

*Ground School*, Chapter 19

### **Content:**

- Required instruments and equipment for day/night VFR
- Procedures and limitations for determining airworthiness of the airplane with inoperative instruments and/or equipment, with and without a minimum equipment list (MEL)
- Requirements and procedures for obtaining a special flight permit
- Airworthiness directives, compliance records, maintenance/inspection requirements, and appropriate records
- Procedures for deferring maintenance on aircraft without an approved MEL

### **Completion Standards:**

This module is complete when the applicant has constructed a lesson plan for Module 19 and is found competent to instruct regarding airworthiness requirements as determined by the training provider or supervising instructor.

### **Assignment:**

Read *Ground School*, Chapters 20, 23, 24, 25, 26

Construct lesson plan for Module 20

## Stage 2/Module 20

# Navigation and Flight Planning

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will demonstrate the instructional and aeronautical knowledge required to teach the elements associated with navigation and flight planning.

### **References:**

*Ground School*, Chapters 20, 23, 24, 25, 26

### **Content:**

- Terms used in navigation
- Features of aeronautical charts
- Importance of using the proper and current aeronautical charts
- Method of plotting a course, selection of fuel stops and alternates, and appropriate actions in the event of unforeseen situations
- Fundamentals of pilotage and dead reckoning
- Fundamentals of radio navigation
- Diversion to an alternate
- Lost procedures
- Computation of fuel consumption
- Importance of preparing and properly using a flight log
- Importance of a weather check and the use of good judgment in making a “go/no-go” decision
- Purpose of and procedure used in filing a flight plan

### **Completion Standards:**

This module is complete when the applicant has constructed a lesson plan for Module 20 and is found competent to instruct in the subjects of navigation and flight planning as determined by the training provider or supervising instructor.

### **Assignment:**

Read *Ground School*, Chapter 21

Construct lesson plan for Module 21

## Stage 2/Module 21

# National Airspace System

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will demonstrate the instructional and aeronautical knowledge required to teach the elements associated with the national airspace system.

### **References:**

*Ground School*, Chapter 21

### **Content:**

- Basic VFR weather minimums for all classes of airspace
- Airspace classes—the operating rules, pilot certification, and airplane equipment requirements for the following:
  - Class A
  - Class B
  - Class C
  - Class D
  - Class E
  - Class G
- Special use airspace (SUA)
- Temporary flight restrictions (TFR)

### **Completion Standards:**

This module is complete when the applicant has constructed a lesson plan for Module 21 and is found competent to instruct on the national airspace system as determined by the training provider or supervising instructor.

### **Assignment:**

Read *Ground School*, Chapter 22

Construct lesson plan for module 22

## Stage 2/Module 22

# Airport Operations and Runway Incursion Avoidance

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will demonstrate the instructional and aeronautical knowledge required to teach the elements associated with airport operations and runway incursion avoidance procedures.

### **References:**

*Ground School*, Chapter 22

### **Content:**

- Distinct challenges and requirements during taxi operations not found in other phases of flight operations
- Procedures for appropriate cockpit activities during taxiing including taxi route planning, briefing the location of hot spots, communicating and coordinating with ATC and a sterile cockpit environment
- Procedures for steering, maneuvering, maintaining taxiway, runway position, and situational awareness
- Cockpit settings, including transponder and lights
- Airport markings, signs, lights and the relevance/importance of hold lines
- Procedures for ensuring the pilot maintains strict focus on the movement of the aircraft and ATC communications, including the elimination of all distractible activities (i.e., cell phone, texting, conversations with passengers) during aircraft taxi, takeoff and climb out to cruise altitude
- Procedures for holding the pilot's workload to a minimum during taxi operations which should increase the pilot's awareness while taxiing
- Taxi operation planning procedures, such as reviewing ATIS, recording taxi instructions, reading back taxi clearances, reviewing taxi routes on the airport diagram, and progressive taxi requests
- Procedures for ensuring that clearance or instructions that are actually received are adhered to rather than the ones expected to be received
- Procedures for maintaining/enhancing situational awareness when conducting taxi operations in relation to other aircraft operations in the vicinity as well as to other vehicles moving on the airport
- Procedures for briefing if a landing rollout to a taxiway exit will place the pilot in close proximity to another runway which can result in a runway incursion
- Appropriate after landing/taxi procedures in the event the aircraft is on a taxiway that is between parallel runways
- Specific procedures for operations at an airport with an operating air traffic control tower, with emphasis on ATC communications and runway entry/crossing authorizations
- ATC communications and pilot actions before takeoff, before landing, and after landing at towered and non-towered airports
- Procedures unique to night operations
- Operations at non-towered airports
- Use of aircraft exterior lighting
- Low visibility operations

**Completion Standards:**

This module is complete when the applicant has constructed a lesson plan for Module 22 and is found competent to instruct on the subjects of airport operations and runway incursion avoidance procedures as determined by the training provider or supervising instructor.

**Assignment:**

Construct lesson plan for Module 23

## Stage 2/Module 23

# Night Operations

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will demonstrate the instructional and aeronautical knowledge required to teach the elements associated with night operations.

### **References:**

*Ground School*, Chapter 22

### **Content:**

- Pilot night currency requirements
- Factors related to night vision
- Disorientation and night optical illusions
- Proper adjustment of interior lights
- Importance of having a flashlight with a red lens
- Night preflight inspection
- Engine starting procedures, including use of position and anti-collision lights prior to start
- Taxiing and orientation on an airport
- Takeoff and climb-out
- In-flight orientation
- Importance of verifying the airplane's attitude by reference to flight instruments
- Night emergencies procedures
- Traffic patterns
- Approaches and landings with and without landing lights
- Go-around

### **Completion Standards:**

This module is complete when the applicant has constructed a lesson plan for Module 23 and is found competent to instruct on night operations as determined by the training provider or supervising instructor.

### **Assignment:**

Read *Ground School*, Chapter 27

Construct lesson plan for Module 24

## Stage 2/Module 24

# Navigation Aids

Minimum 141 Requirements: 1.0 hour ground instruction

### **Objective:**

The applicant will demonstrate the instructional and aeronautical knowledge required to teach the elements associated with navigation aids (NAVAIDs).

### **References:**

*Ground School*, Chapter 27

### **Content:**

- Ground-based navigation systems
  - VOR/VORTAC
  - NDB
  - DME
- Satellite-based navigation systems
  - Global positioning system (GPS)
- Radar service and procedures

### **Completion Standards:**

This module is complete when the applicant has constructed a lesson plan for Module 24 and is found competent to instruct on navigation aids as determined by the training provider or supervising instructor.

### **Assignment:**

Read Advisory Circular (AC) 61-65

Construct lesson plan for Module 25

## Stage 2/Module 25

# Logbook Entries and Certificate Endorsements

Minimum 141 Requirements: 1.0 hour ground instruction + Stage Exam

### **Objective:**

The applicant will demonstrate the instructional and aeronautical knowledge required to teach the elements associated with logbook entries and certificate endorsements.

### **References:**

AC 61.65

### **Content:**

- Required logbook entries for instruction given
- Required student pilot certificate endorsements, including appropriate logbook entries
- Preparation of a recommendation for a pilot practical test, including appropriate logbook entry for:
  - Initial pilot certification
  - Additional pilot certification
  - Additional aircraft qualification
- Required endorsement of a pilot logbook for the satisfactory completion of the required FAA flight review
- Required flight instructor records

### **Completion Standards:**

This module is complete when the applicant has constructed a lesson plan for Module 25 and is found competent to instruct on logbook entries and certificate endorsements as determined by the training provider or supervising instructor. The applicant must also pass the Advanced Ground Instructor stage exam with a minimum score of 80%; all deficient answers should be correct to 100%.

### **Assignment:**

Prepare for your FAA Advanced Ground Instructor (AGI) Knowledge Exam. The test will contain 100 questions and requires a minimum score of 70% for passing.

# **Stage 3**

## **Flight Proficiency**

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*Note: a complex airplane should be used at minimum for the performance of takeoff and landing maneuvers and appropriate emergency procedures. Refer to the Flight Instructor Practical Test Standards for additional details.*

### **Objective**

In Stage 3, applicants will gain proficiency in demonstrating and simultaneously performing the required maneuvers for private and commercial pilot certification. Applicants will learn to identify and analyze common errors associated with these flight operations and apply the corrective action. Applicants will attain the flight proficiency and risk management skills required to instruct private and commercial students. At the completion of Stage 3 the applicant will have the knowledge needed to take the FAA Flight Instructor (CFI) Airplane Knowledge Exam.

### **Ground Training: 13 hours minimum — Flight Training: 23 hours**

- An Introduction to Flight
- Aircraft Control on the Ground
- Aircraft Control in the Air, VFR
- Aircraft Control in the Air, IFR
- Slow Flight and Stalling
- Advanced Stalling
- Normal and Crosswind Takeoffs and Landings, Traffic Patterns, Go-Arounds
- Maximum Performance Takeoff and Landing Operations
- Steep Turns, Steep Spirals
- Performance Maneuvers
- Ground Reference Maneuvers
- Fire and Engine Malfunctions
- Emergency Operations
- Review
- Spin Endorsement

### **Completion Standards**

The applicant will have successfully completed the objective of each module in Stage 3. The applicant at the minimum must demonstrate the maneuvers to commercial pilot test standards from the right seat of the aircraft. A minimum passing score of 80% is required on the Flight Instructor Airplane end-of-stage exam and all deficient answers will be corrected to 100%. Prior to completing this stage the applicant must pass the FAA Flight Instructor Airplane (FIA) Knowledge Exam.

### **Assignment**

Construct preflight lesson plans for Module 26

Read *Lesson Plans: To Train Like You Fly*, Chapters 1, 2, 3, 10, 11

## Stage 3/Module 26

# An Introduction to Flight

Minimum 141 Requirements: .75 hour ground instruction + 1.5 hours dual flight instruction

### **Objective:**

The applicant will —

1. Gain proficiency in the practical instruction of the knowledge and common errors related to each of the below elements for the preflight lesson.
2. Become familiar with flight operations and visual perspectives from the right seat. Demonstrate and simultaneously explain radio communications and ATC light gun signals, preflight inspections, cockpit management and postflight procedures from an instructional standpoint.

### **References:**

*The Pilot's Manual: Flight School* (ASA-PM-1), Chapters 1 through 4, and 7

### **Content:**

- Preflight Lesson
  - Radio communications and ATC light gun signals
  - Preflight inspection
  - Cockpit management
  - Postflight procedures
- Flight
  - Preflight inspections
  - Cockpit management
  - Single pilot resource management (SRM)
  - Introduction to the right seat
  - Normal takeoff
  - Radio communications
  - Common Traffic Advisory Frequency (CTAF)
  - Clearing turns, collision avoidance
  - Four basics: straight and level, climbs, descent, turns
  - Positive exchange of flight controls
  - Light gun signal recognition
  - Normal approach and landing
  - Postflight procedures

### **Completion Standards:**

This module is complete when the applicant has —

- Adequately presented preflight lesson plans for radio communications and light gun signals, preflight inspection, cockpit management.
- Demonstrated positive aircraft control from the right seat.
- Competently explained and demonstrated radio communications, light gun signals, preflight inspection and cockpit management from an instructional standpoint.

### **Assignment:**

Construct preflight lesson plans for Module 27

## Stage3/Module 27

# Aircraft Control on the Ground

Minimum 141 Requirements: .75 hour ground instruction + 1.5 hours dual flight instruction

### **Objective:**

The applicant will —

1. Gain proficiency in the practical instruction of the knowledge and common errors related to each of the below elements for the preflight lesson.
2. Become familiar with flight operations and visual perspectives from the right seat. Demonstrate and simultaneously explain runway/taxiway signs, markings, and lighting, engine starting, taxiing and before takeoff check from an instructional standpoint. Apply the appropriate corrective action and response to simulated errors.

### **References:**

*Flight School* (ASA-PM-1), Chapters 5 and 6

### **Content:**

- Preflight Lesson
  - Airport runway and taxiway signs, markings, and lighting
  - Engine starting
  - Taxiing
  - Before takeoff check
- Flight
  - Preflight
  - Use of checklists
  - Engine starting
  - Taxiing
  - Runway incursion avoidance procedures
  - Determine location on airport
  - Runway crossing
  - Line-up-and-wait
  - Before takeoff check
  - Crosswind takeoff
  - Slow flight
  - Maneuvering during slow flight
  - Slips
  - Land and hold short operations (LAHSO)
  - Forward slip to a landing
  - Postflight

### **Completion Standards:**

This module is complete when the applicant has —

- Adequately presented preflight lesson plans for airport runway/taxiway signs, markings and lighting, engine starting, taxiing, and the before takeoff check.
- Demonstrated positive aircraft control from the right seat.
- Competently explained and demonstrated runway/taxiway signs, markings and lighting, engine starting, taxiing and before takeoff check from an instructional standpoint.

### **Assignment:**

Construct preflight lesson plans for Module 28

## Stage 3/Module 28

# Aircraft Control in the Air, VFR

Minimum 141 Requirements: .75 hour ground instruction + 1.5 hours dual flight instruction

### **Objective:**

The applicant will —

1. Gain proficiency in the practical instruction of the knowledge and common errors related to each of the below elements for the preflight lesson.
2. Become familiar with flight operations and visual perspectives from the right seat. Demonstrate and simultaneously explain the fundamentals of flight from an instructional standpoint. Apply the appropriate corrective action and response to simulated errors.

### **References:**

*Flight School*, Chapters 8 through 21

### **Content:**

- Preflight lesson
  - Straight-and-level flight
  - Level turns
  - Straight climbs and climbing turns
  - Straight descents and descending turns
- Flight
  - Preflight
  - Crosswind takeoff
  - Straight-and-level flight
  - Climbs
  - Powered descents
  - Use of flaps in descents
  - Descent to an aim point
  - Gliding
  - Level turns
  - Turns to a heading
  - Climbing turns
  - Descending turn
  - Gliding turn
  - Forward slip to a landing
  - Postflight

### **Completion Standards:**

This module is complete when the applicant has —

- Adequately presented preflight lesson plans for straight-and-level flight, level turns, straight climbs and climbing turns, straight descents and descending turns.
- Demonstrated positive aircraft control from the right seat.
- Competently explained and demonstrated fundamentals of flight from an instructional standpoint.

### **Assignment:**

Construct lesson plans for Module 29

## Stage 3/Module 29

# Aircraft Control in the Air, IFR

Minimum 141 Requirements: .75 hour ground instruction + 1.5 hours dual flight instruction

### **Objective:**

The applicant will —

1. Gain proficiency in the practical instruction of the knowledge and common errors related to each of the below elements for the preflight lesson.
2. Become familiar with basic instrument maneuvers and visual perspectives from the right seat. Demonstrate and simultaneously explain basic instrument maneuvers from an instructional standpoint. Apply the appropriate corrective action and response to simulated errors.

### **References:**

*Flight School*, Chapters 8 through 21

### **Content:**

- Preflight lesson
  - Solely by reference to instruments
    - Straight-and-level flight
    - Constant airspeed climbs
    - Constant airspeed descents
    - Turns to headings
    - Recovery from unusual attitudes
- Flight
  - Preflight
    - Solely by reference to instruments
      - Straight-and-level flight
      - Constant airspeed climbs
      - Constant airspeed descent
      - Climbing turns
      - Descending turn
      - Turns to a heading
      - Recovery from unusual attitudes
      - Postflight

### **Completion Standards:**

This module is complete when the applicant has —

- Adequately presented preflight lesson plans for straight-and-level flight, constant airspeed climbs, constant airspeed descents, turns to a heading, and recovery from unusual attitudes, solely by reference to instruments.
- Demonstrated positive aircraft control from the right seat.
- Competently explained and demonstrated basic instrument maneuvers from an instructional standpoint.

### **Assignment:**

Construct lesson plans for Module 30

## Stage 3/Module 30

# Slow Flight and Stalling

Minimum 141 Requirements: .75 hour ground instruction + 1.5 hours dual flight instruction

### **Objective:**

The applicant will —

1. Gain proficiency in the practical instruction of the knowledge and common errors related to each of the below elements for the preflight lesson.
2. Become familiar with flight operations and visual perspectives from the right seat. Demonstrate and simultaneously explain slow flight and power on/off stalls from an instructional standpoint. Apply the appropriate corrective action and response to simulated errors.

### **References:**

*Flight School*, Chapters 22, 23, 24

*Lesson Plans*, Chapter 8

### **Content:**

- Preflight lesson
  - Maneuvering during slow flight
  - Power-on stalls
  - Power-off stalls
- Flight
  - Preflight
  - Short-field takeoff
  - Slow flight
  - Power-on stall
  - Power-off stall
  - Spin awareness
  - Short-field landing
  - Postflight

### **Completion Standards:**

This module is complete when the applicant has —

- Adequately presented preflight lesson plans for slow flight, power-on stall, power-off stall.
- Demonstrated positive aircraft control from the right seat.
- Competently explained and demonstrated slow flight, power-on, and power-off stalls from an instructional standpoint.

### **Assignment:**

Construct lesson plans for Module 31

# Stage 3/Module 31

## Advanced Stalling

Minimum 141 Requirements: .75 hour ground instruction + 1.5 hours dual flight instruction

### **Objective:**

The applicant will —

1. Gain proficiency in the practical instruction of the knowledge and common errors related to each of the below elements for the preflight lesson.
2. Become familiar with flight operations and visual perspectives from the right seat. Demonstrate and simultaneously explain cross-controlled, elevator trim, secondary, and accelerated maneuver stalls from an instructional standpoint. Apply the appropriate corrective action and response to simulated errors.

### **References:**

*Flight School*, Chapters 22, 23, 24

### **Content:**

- Preflight lesson
  - Cross-controlled stalls
  - Elevator trim stalls
  - Secondary stalls
  - Accelerated maneuver stalls
- Flight
  - Preflight
  - Soft-field takeoff
  - Cross-controlled stalls
  - Elevator trim stalls
  - Secondary stalls
  - Accelerated maneuver stalls
  - Power-on stall
  - Power-off stall
  - Spin awareness
  - Soft-field landing
  - Postflight

### **Completion Standards:**

This module is complete when the applicant has —

- Adequately presented preflight lesson plans for cross-controlled stalls, elevator trim stalls, secondary stalls, and accelerated maneuver stalls.
- Demonstrated positive aircraft control from the right seat.
- Competently explained and demonstrated stalls and spin awareness from an instructional standpoint.

### **Assignment:**

Construct lesson plans for Module 32

## Stage 3/Module 32

# **Normal and Crosswind Takeoffs, Traffic Patterns, Go-Arounds**

Minimum 141 Requirements: .75 hour ground instruction + 1.5 hours dual flight instruction

### **Objective:**

The applicant will —

1. Gain proficiency in the practical instruction of the knowledge and common errors related to each of the below elements for the preflight lesson.
2. Become familiar with flight operations and visual perspectives from the right seat. Demonstrate and simultaneously explain traffic patterns, normal and crosswind takeoff and landings, forward slip to a landing, and go-around procedures from an instructional standpoint. Apply the appropriate corrective action and response to simulated errors.

### **References:**

*Flight School*, Chapters 27, 28, 29, 30, 31, 38, and 39

*Lesson Plans*, Chapter 4 (all), Chapter 5 (pages 23 – 39, 64 – 75)

### **Content:**

- Preflight Lesson
  - Traffic Patterns
  - Normal and crosswind takeoff and climb
  - Normal and crosswind approach and landing
  - Slip to a landing
  - Go around/rejected landing
- Flight
  - Preflight
  - Pattern work*
    - Normal takeoff and climb
    - Crosswind takeoff and climb
    - Aborted takeoff
    - Traffic patterns and local area operations
    - Normal approach and landing
    - Crosswind approach and landing
    - Slips to a landing
    - Go-around procedures
    - Wake turbulence avoidance
    - Postflight

### **Completion Standards:**

This module is complete when the applicant has —

- Adequately presented preflight lesson plans for traffic patterns, normal and crosswind takeoff and climb, normal and crosswind approach and landing, slip to a landing, and go-around/rejected landing.
- Demonstrated positive aircraft control from the right seat.
- Competently explained and demonstrated traffic patterns, normal and crosswind takeoff and climb, normal and crosswind approach and landing, slip to a landing, and go-around/rejected landing from an instructional standpoint.

### **Assignment:**

Construct lesson plans for Module 33

## Stage 3/Module 33

# Maximum Performance Takeoff and Landing Operations

Minimum 141 Requirements: .75 hour ground instruction + 1.5 hours dual flight instruction

### **Objective:**

The applicant will —

1. Gain proficiency in the practical instruction of the knowledge and common errors related to each of the below elements for the preflight lesson.
2. Become familiar with flight operations and visual perspectives from the right seat. Demonstrate and simultaneously explain short-field operations and soft-field operations from an instructional standpoint. Apply the appropriate corrective action and response to simulated errors.

### **References:**

*Flight School*, Chapters 40 and 41

*Lesson Plans*, Chapter 5 (pages 40 – 63)

### **Content:**

- Preflight lesson
  - Short-field takeoff and maximum performance climb
  - Soft-field takeoff and climb
  - Short-field approach and landing
  - Soft-field approach and landing
- Flight
  - Preflight
  - Short-field takeoff and maximum performance climb
  - Soft-field takeoff and climb
  - Steep turns
  - Steep spirals
  - Short-field approach and landing
  - Soft-field approach and landing
  - Postflight

### **Completion Standards:**

This module is complete when the applicant has —

- Adequately presented preflight lesson plans for short-field takeoff and maximum performance climb, soft-field takeoff and climb, short-field approach and landing, and soft-field approach and landing.
- Demonstrated positive aircraft control from the right seat.
- Competently explained and demonstrated short-field and soft-field operations from an instructional standpoint.

### **Assignment:**

Construct lesson plans for Module 34

## Stage 3/Module 34

# Steep Turns, Steep Spirals

Minimum 141 Requirements: .75 hour ground instruction + 1.5 hours dual flight instruction

### **Objective:**

The applicant will —

1. Gain proficiency in the practical instruction of the knowledge and common errors related to each of the below elements for the preflight lesson.
2. Become familiar with flight operations and visual perspectives from the right seat. Demonstrate and simultaneously explain steep turns and steep spirals from an instructional standpoint. Apply the appropriate corrective action and response to simulated errors.

### **References:**

*Flight School*, Chapter 42

*Lesson Plans*, Chapter 6 (pages 83 – 95)

### **Content:**

- Preflight lesson
  - Steep turns
  - Steep spirals
- Flight
  - Preflight
  - Normal/crosswind takeoff
  - Steep turns
  - Steep spirals
  - Chandelles
  - Lazy eights
  - Normal/crosswind landing
  - Postflight

### **Completion Standards:**

This module is complete when the applicant has —

- Adequately presented preflight lesson plans for steep turns and steep spirals.
- Demonstrated positive aircraft control from the right seat.
- Competently explained and demonstrated steep turns and steep spirals from an instructional standpoint.

### **Assignment:**

Construct lesson plans for Module 35

## Stage 3/Module 35

# Performance Maneuvers

Minimum 141 Requirements: .75 hour ground instruction + 1.5 hours dual flight instruction

### **Objective:**

The applicant will —

1. Gain proficiency in the practical instruction of the knowledge and common errors related to each of the below elements for the preflight lesson.
2. Become familiar with flight operations and visual perspectives from the right seat. Demonstrate and simultaneously explain chandelles and lazy eights from an instructional standpoint. Apply the appropriate corrective action and response to simulated errors.

### **References:**

*Flight School*, Chapters 44 and 45

*Lesson Plans*, Chapter 6 (pages 96 – 108)

### **Content:**

- Preflight lesson
  - Chandelles
  - Lazy eights
- Flight
  - Preflight
  - Short/soft field takeoff
  - Chandelles
  - Lazy eight
  - Steep turns
  - Ground reference maneuvers
  - Short/soft field landing
  - Postflight

### **Completion Standards:**

This module is complete when the applicant has —

- Adequately presented preflight lesson plans for chandelles and lazy eights.
- Demonstrated positive aircraft control from the right seat.
- Competently explained and demonstrated chandelles and lazy eights from an instructional standpoint.

### **Assignment:**

Construct lesson plans for Module 36

## Stage 3/Module 36

# Ground Reference Maneuvers

Minimum 141 Requirements: .75 hour ground instruction + 1.5 hours dual flight instruction

### **Objective:**

The applicant will —

1. Gain proficiency in the practical instruction of the knowledge and common errors related to each of the below elements for the preflight lesson.
2. Become familiar with flight operations and visual perspectives from the right seat. Demonstrate and simultaneously explain ground reference maneuvers from an instructional standpoint. Apply the appropriate corrective action and response to simulated errors.

### **References:**

*Flight School*, Chapters 46 and 47

*Lesson Plans*, Chapter 7

### **Content:**

- Preflight lesson
  - Rectangular course
  - S-turns across a road
  - Turns around a point
  - Eights on pylons
- Flight
  - Preflight
  - Short/soft-field takeoff
  - Rectangular course
  - S-turns across a road
  - Turns around a point
  - Eights on pylons
  - Short/soft field landing
  - Postflight

### **Completion Standards:**

This module is complete when the applicant has —

- Adequately presented preflight lesson plans for rectangular course, S-turns across a road, turns around a point, and eights on pylons.
- Demonstrated positive aircraft control from the right seat.
- Competently explained and demonstrated ground reference maneuvers from an instructional standpoint.

### **Assignment:**

Construct lesson plans for Module 37

## Stage 3/Module 37

# Fire and Engine Malfunctions

Minimum 141 Requirements: .75 hour ground instruction + 1.5 hours dual flight instruction

### **Objective:**

The applicant will —

1. Gain proficiency in the practical instruction of the knowledge and common errors related to each of the below elements for the preflight lesson.
2. Become familiar with flight operations and visual perspectives from the right seat. Demonstrate and simultaneously explain systems and equipment malfunctions and emergency descents from an instructional standpoint. Apply the appropriate corrective action and response to simulated errors.

### **References:**

*Flight School*, Chapter 32

### **Content:**

- Preflight lesson
  - Systems and equipment malfunctions
  - Emergency descent
- Flight
  - Preflight
  - Normal/crosswind takeoff
  - Checklist usage
  - Smoke or fire
  - Rough running engine/partial loss of power
  - Loss of oil pressure
  - Engine overheat
  - Fuel starvation
  - Hydraulic malfunction
  - Electrical malfunction
  - Carburetor or induction icing
  - Door or window opening in flight
  - Inoperative/runaway trim
  - Landing gear malfunction
  - Flap malfunction
  - Loss of pressurization
  - Emergency descent
  - Zero flap approach and landing
  - Postflight

### **Completion Standards:**

This module is complete when the applicant has —

- Adequately presented preflight lesson plans for systems and equipment malfunctions, and emergency descent.
- Demonstrated positive aircraft control from the right seat.
- Competently explained and demonstrated systems/equipment malfunctions and an emergency descent from an instructional standpoint.

### **Assignment:**

Construct lesson plans for Module 38

# Stage 3/Module 38

## Emergency Operations

Minimum 141 Requirements: .75 hour ground instruction + 1.5 hours dual flight instruction

### Objective:

The applicant will —

1. Gain proficiency in the practical instruction of the knowledge and common errors related to each of the below elements for the preflight lesson.
2. Become familiar with flight operations and visual perspectives from the right seat. Demonstrate and simultaneously explain emergency approach and landings and power-off 180° accuracy approach and landing from an instructional standpoint. Apply the appropriate corrective action and response to simulated errors.

### References:

*Flight School*, Chapters 33 through 37

*Lesson Plans*, Chapter 5 (pages 76 – 82), and Chapter 9

### Content:

- Preflight lesson
  - Emergency approach and landing
  - Power-off 180° accuracy approach and landing
  - Emergency equipment and survival gear
- Flight
  - Preflight
  - Survival gear and equipment
  - Normal/crosswind takeoff
  - Checklist usage
  - Engine fire
  - Engine failure
  - Steep spirals
  - Forced landings on land
  - Forced landing in water
  - Power-off glide approach
  - Precautionary landings
  - Forward slips
  - Zero flap approach and landing
  - Power-off 180° approach and landing
  - Postflight

### Completion Standards:

This module is complete when the applicant has —

- Adequately presented preflight lesson plans for emergency approach and landing, power-off 180° approach and landing, emergency equipment and survival gear.
- Demonstrated positive aircraft control from the right seat.
- Competently explained and demonstrated emergency approach and landing and power-off 180° accuracy approach and landing from an instructional standpoint.

### Assignment:

Review Pre-Flight Lesson Plans

# Stage 3/Module 39

## Review

Minimum 141 Requirements: 1.5 hour ground instruction + 2.0 hours dual flight instruction

### **Objective:**

The applicant will —

1. Exhibit proficiency in the practical instruction of the knowledge and common errors related to each of the below elements for the preflight lesson.
2. Demonstrate procedures and maneuvers to at least the commercial pilot skill level.

### **References:**

*CFI Test Prep*

*CFI Practical Test Standards*

### **Content:**

- Preflight lesson
  - Special emphasis areas
  - At instructor's discretion
- Flight
  - Preflight procedures
  - Special emphasis areas
  - Short/soft-field takeoff
  - Fundamentals of flight
  - Basic instrument maneuvers
  - Slow flight
  - Stalls
  - Performance maneuvers
  - Ground reference maneuvers
  - Emergency operations
  - Power-off 180° approach and landing
  - Short/soft-field landing

### **Completion Standards:**

This module is complete when the applicant has —

- Adequately presented preflight lesson plans for those lessons chosen by the instructor, including attention to the special emphasis areas outlined in the Flight Instructor PTS.
- Effectively demonstrated procedures and maneuvers to the standards of a commercial pilot.
- Demonstrated competency in explaining and teaching the maneuvers selected by the instructor.

### **Assignment:**

Review Pre-Flight Lesson Plans

# Stage 3/Module 40

## Spin Endorsement

Minimum 141 Requirements: 1 hour ground instruction + .75 hour ground instruction + 1.5 hours dual flight instruction + Stage Exam

### **Objective:**

The applicant will —

1. Exhibit proficiency in the practical instruction of the knowledge and common errors related to stall awareness, spin entry, spins, and spin recovery.
2. Demonstrate the instructional proficiency to meet the requirements to obtain a spin endorsement.

### **References:**

*Flight School*, Chapters 25 and 26

### **Content:**

- Preflight lesson
  - Spins
- Flight
  - Preflight
  - Normal/crosswind takeoff
  - Stall awareness
  - Spin entry
  - Spins
  - Spin recovery procedures
  - Postflight
  - Normal/crosswind landing

### **Completion Standards:**

This module is complete when the applicant has met the requirements of 14 CFR §61.183 (i)(1) and (2), and receives a logbook endorsement. The applicant must also pass the Flight Instructor Airplane stage exam, with a minimum score of 80%, and all deficient answers should be corrected to 100%.

### **Assignment:**

Prepare for your FAA knowledge test Flight Instructor Airplane. The test will contain 100 questions and requires a minimum score of 70% for passing.

# **Stage 4**

## **End-of-Course Check**

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*Note: a complex airplane should be used at minimum for the performance of takeoff and landing maneuvers and appropriate emergency procedures. Refer to the Flight Instructor Practical Test Standards for additional details.*

### **Objective**

In Stage 4 it will be determined whether the applicant meets the required practical test standards to apply for the flight instructor certificate, airplane single-engine rating. This stage should be completed by the chief or assistant chief flight instructor or a designated check instructor. Upon successful completion, the applicant will receive all the required endorsements to take the CFI-Airplane (Single-Engine) practical test.

### **Ground Training: 3 hours minimum — Flight Training: 2 hours**

FOI Review

*CFI Practical Test Standards*

### **Completion Standards**

Applicants must meet all standards as outlined in the Commercial and Flight Instructor Practical Test Standards and must also meet the requirements as outlined in 14 CFR Part 141, Subpart F, or Part 61 Subpart H, for the rating in which they apply.

# Stage 4/Module 41

## FOI Review

Minimum 141 Requirements: 2.0 hours ground instruction

### **Objective:**

To determine whether the applicant meets the instructional knowledge requirements of the Flight Instructor PTS for teaching private and commercial level students.

### **Content:**

- Fundamentals of Instructing
  - Human Behavior and Effective Communication
  - The Learning Process
  - The Teaching Process
  - Assessment and Critique
  - Instructor Responsibilities and Professionalism
  - Techniques of Flight Instruction
  - Risk Management
- Technical Subject Areas
  - Aeromedical Factors
  - Runway Incursion Avoidance
  - Visual Scanning and Collision Avoidance
  - Principles of Flight
  - Airplane Flight Controls
  - Airplane Weight and Balance
  - Navigation and Flight Planning
  - Night Operations
  - High Altitude Operations
  - 14 CFR and Publications
  - National Airspace System
  - Navigation Aids and Radar Services
  - Logbook Entries and Certificate Endorsements
- Preflight Preparation
  - Certificates and Documents
  - Weather Information
  - Performance and Limitations
  - Airworthiness Requirements

### **Completion Standards:**

- Knowledge of the fundamentals of instructing;
- Knowledge of the technical subject areas;
- Knowledge of the flight instructor's responsibilities —
  - concerning the pilot certification process;
  - concerning logbook entries and pilot certificate endorsements;
  - conveying to the applicant runway incursion mitigation techniques and procedures.

## Stage 4/Module 42

# CFI Practical Test Standards

Minimum 141 Requirements: 1.0 hour ground instruction + 2.0 hours dual flight instruction

### **Objective:**

To determine whether the applicant meets the flight proficiency and instructional knowledge requirements of the Flight Instructor PTS for teaching private and commercial level students.

### **Content:**

- Preflight Lesson on a Maneuver to be Performed in Flight
- Preflight Procedures
  - Preflight inspection
  - Cockpit management
  - Engine starting
  - Taxiing
- Before takeoff check
  - Airport base operations
  - Radio communications
  - Light gun signals/Traffic patterns
  - Airport runway and taxiway signs, markings, and lighting
- Takeoffs
  - Normal and crosswind takeoff and climb
  - Short-field takeoff and maximum performance climb
  - Soft-field takeoff and climb
- Fundamentals of Flight
  - Straight and level flight
  - Level turns
  - Straight climbs and climbing turns
  - Straight descents and descending turns
- Basic Instrument Maneuvers
  - Straight and level flight
  - Constant airspeed climbs
  - Constant airspeed descents
  - Turns to headings
  - Recovery from unusual flight attitudes
- Performance Maneuvers
  - Steep turns
  - Steep spirals
  - Chadelles
  - Lazy eights
- Ground Reference Maneuvers
  - Rectangular course
  - S-turns across a road
  - Turns around a point
  - Eights on pylons

- Slow Flight, Stalls, and Spins
  - Maneuvering during slow flight
  - Power-on stalls
  - Power-off stalls
  - Cross controlled stalls
  - Elevator trim stalls
  - Secondary stalls
  - Spin awareness
  - Accelerated maneuver stalls
- Emergency Operations
  - Emergency approach and landing
  - Systems and equipment malfunctions
  - Emergency equipment and survival gear
  - Emergency descent
  - Landings and go-arounds
  - Normal and crosswind approach and landing
  - Slip to a landing
  - Go-around/rejected landing
  - Short-field approach and landing
  - Soft-field approach and landing
  - Power-off 180° accuracy approach and landing
- Postflight Procedures

### **Completion Standards:**

- Ability to demonstrate the procedures and maneuvers selected by the examiner to at least the commercial pilot skill level while giving effective instruction;
- Competence in teaching the procedures and maneuvers selected by the examiner;
- Competence in describing, recognizing, analyzing, and correcting common errors simulated by the examiner; and
- Knowledge of the development and effective use of a course of training, a syllabus, and a lesson plan.

# Flight Instructor Endorsements

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Instructor Note: Follow the format below when signing-off the endorsement for the applicant (from AC 61-65).

## **Fundamentals of instructing knowledge test: §§61.183(d) and 61.185(a)(1).**

I certify that \_\_\_\_\_ (First name, MI, Last Name) has received the required fundamentals of instruction training of § 61.185(a)(1).

Sign/Date \_\_\_\_\_ Name \_\_\_\_\_

Certificate # / Expiration \_\_\_\_\_

## **Spin training: §61.183(i)(1).**

I certify that \_\_\_\_\_ (First name, MI, Last Name) has received the required training of § 61.183(i). I have determined that he/she is competent in instructional skills for training stall awareness, spin entry, spins, and spin recovery procedures.

Sign/Date \_\_\_\_\_ Name \_\_\_\_\_

Certificate # / Expiration \_\_\_\_\_

## **Flight instructor ground and flight proficiency/practical test: §§61.183(g), 61.187(a) and 61.187(b).**

I certify that \_\_\_\_\_ (First name, MI, Last Name) has received the required training of § 61.187(b). I have determined he/she is prepared for the CFI—Airplane, Single-Engine Land practical test.

Sign/Date \_\_\_\_\_ Name \_\_\_\_\_

Certificate # / Expiration \_\_\_\_\_

## **Flight Instructor knowledge test: §61.185**

I certify that \_\_\_\_\_ (First name, MI, Last name) has received the required training of 61.187(b) and/or I have reviewed the home study curriculum and have determined he/she is prepare for the flight instructor airplane knowledge test.

Sign/Date \_\_\_\_\_ Name \_\_\_\_\_

Certificate # / Expiration \_\_\_\_\_



U.S. Department  
of Transportation

**Federal Aviation  
Administration**

**FAA Form 8710-1, Airman Certificate  
and/or Rating Application  
Supplemental Information and  
Instructions**

**Paperwork Reduction Act Statement**

The information collected on this form is necessary to determine applicant eligibility for airman ratings. We estimate it will take 30 minutes to complete this form. The information collected is required to obtain a benefit and becomes part of the Privacy Act system of records DOT/FAA 847, Aviation Records on Individuals. Please note that an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a current valid OMB control number. The OMB control number associated with this collection is 2120-0021. You may direct comments concerning the accuracy of this burden and suggestions for reducing the burden to the FAA at: 800 Independence Ave. SW, Washington, DC 20591, Attn: Information Collection Clearance Officer, ASP-110.

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**See attached Privacy Act Information and Pilot's Bill of Rights Written Notification of Investigation**

Detach these supplemental information instruction parts before submitting the attached form. Instructions for completing this form (FAA 8710-1 form) are attached. If an electronic form is not printed on a duplex printer, the applicant's name, date of birth, and certificate number (if applicable) must be furnished on the reverse side of the application. This information is required for identification purposes. The applicant's social security number, telephone number, and e-mail address are optional.

Tear off this cover before submitting form

## AIRMAN CERTIFICATE AND/OR RATING APPLICATION

**PRIVACY ACT STATEMENT:** This statement is provided pursuant to 5 U.S.C. § 552(a):

The authority for collecting this information is contained in 49 U.S.C. §§ 40113, 44702, 44703, 44709 and 14 CFR Part 61. The principal purpose for which the information is intended to be used is to identify and evaluate your qualifications and eligibility for the issuance of an airman certificate and/or rating. Submission of the data is mandatory, except for the applicant's social security number which is optional. Failure to provide all required information will result in the FAA being unable to issue you a certificate and/or rating. The information collected on this form will be included in a Privacy Act System of Records known as DOT/FAA 847, titled "Aviation Records on Individuals" and will be subject to the routine uses published in the System of Records Notice for DOT/FAA 847 (see [www.dot.gov/privacy/privacyactnotices](http://www.dot.gov/privacy/privacyactnotices)), including:

- (a) Providing basic airmen certification and qualification information to the public upon request. Examples of basic information include:
  - The type of certificate(s) and/or rating(s) held, limitations, date of issuance and certificate number;
  - The status of the airman's certificate (i.e., whether it has been amended, modified, suspended or revoked for any reason);
  - The airman's home address, unless requested by the airman to be withheld from public disclosure per 49 U.S.C. 44703(c);
  - Information relating to an airman's physical status or condition used to determine statistically the validity of FAA medical standards, the date, class, and restrictions of the latest physical;
  - Information relating to an individual's eligibility for medical certification, requests for exemption from medical requirements, and requests for review of medical certificate denials.
- (b) Using contact information to inform airmen of meetings and seminars conducted by the FAA regarding aviation safety.
- (c) Disclosing information to the National Transportation Safety Board in connection with its investigation responsibilities.
- (d) Providing information about airmen to Federal, State, local and tribal law enforcement agencies when engaged in an official investigation in which an airman is involved.
- (e) Providing information about enforcement actions, or orders issued thereunder, to Federal agencies, the aviation industry, and the public upon request.
- (f) Making records of delinquent civil penalties owed to the FAA available to the U.S. Department of the Treasury and the U.S. Department of Justice (DOJ) for collection pursuant to 31 U.S.C. 3711(g).
- (g) Making records of effective orders against the certificates of airmen available to their employers if the airmen use the affected certificates to perform job responsibilities for those employers.
- (h) Making airmen records available to users of FAA's Safety Performance Analysis System (SPAS), including the Department of Defense Commercial Airlift Division's Air Carrier Analysis Support System (ACAS) for its use in identifying safety hazards and risk areas, targeting inspection efforts for certificate holders of greatest risk, and monitoring the effectiveness of targeted oversight actions.
- (i) Making records of an individual's positive drug test result, alcohol test result of 0.04 or greater breath alcohol concentration, or refusal to submit to testing required under a DOT-required testing program, available to third parties, including current and prospective employers of such individuals. Such records also contain the names and titles of individuals who, in their commercial capacity, administer the drug and alcohol testing programs of aviation entities.
- (j) Providing information about airmen through the Civil Aviation Registry's Comprehensive Airmen Information System to the Department of Health and Human Services, Office of Child Support Enforcement, and the Federal Parent Locator Service that locates noncustodial parents who owe child support. Records in this system are used to identify airmen to the child support agencies nationwide in enforcing child support obligations, establishing paternity, establishing and modifying support orders and location of obligors. Records listed within the section on Categories of Records are retrieved using Connect: Direct through the Social Security Administration's secure environment.
- (k) Making personally identifiable information about airmen available to other Federal agencies for the purpose of verifying the accuracy and completeness of medical information provided to FAA in connection with applications for airmen medical certification.
- (l) Making records of past airman medical certification history data available to Aviation Medical Examiners (AMEs) on a routine basis so that AMEs may render the best medical certification decision.
- (m) Making airman, aircraft and operator record elements available to users of FAA's Skywatch system, including the Department of Defense, the Department of Homeland Security (DHS), DOJ and other authorized Federal agencies, for their use in managing, tracking and reporting aviation-related security events.
- (n) Other possible routine uses published in the Federal Register (see Prefatory Statement of General Routine Uses for additional uses (65 FR 19477-78) For example, a record from this system of records may be disclosed to the United States Coast Guard (Coast Guard) and to the Transportation Security Administration (TSA) if information from this system was shared with either agency when that agency was a component of the Department of Transportation (DOT) before its transfer to DHS and such disclosure is necessary to accomplish a DOT, TSA or Coast Guard function related to this system of records.

***Your signature on this form (FAA Form 8710-1) acknowledges that you received the Pilot's Bill of Rights Written Notification of Investigation at the time of this application.***

### **PILOT'S BILL OF RIGHTS WRITTEN NOTIFICATION OF INVESTIGATION**

The information you submit on the attached FAA Form 8710-1, Airman Certificate and/or Rating Application, will be used by the Administrator of the Federal Aviation Administration as part of the basis for issuing an airman certificate, rating, or inspection authorization to you under Title 49, United States Code (U.S.C.) section 44703(a), if the Administrator finds, after investigation, that you are qualified for, and physically able to perform the duties related to the certificate, rating, or inspection authorization for which you are applying. Therefore, in accordance with the Pilot's Bill of Rights, the Administrator is providing you with this written notification of investigation of your qualifications for an airman certificate, rating, or inspection authorization:

- The nature of the Administrator's investigation, which is precipitated by your submission of this application, is to determine whether you meet the qualifications for the airman certificate, rating, or inspection authorization you are applying for under Title 14, Code of Federal Regulations (CFR) part 61.
- Any response to an inquiry by a representative of the Administrator by you in connection with this investigation of your qualifications for an airman certificate, rating, or inspection authorization may be used as evidence against you.
- A copy of your airman application file for this date is available to you upon your written request addressed to:

Federal Aviation Administration  
Airmen Certification Branch,  
AFS-760 P.O. Box 25082  
Oklahoma City, OK 73125-0082

(If you make a written request for your airman application file, please provide your full name, date of birth or airman certification number for identification purposes, and the date of application.)

**AIRMAN CERTIFICATE AND/OR RATING APPLICATION  
INSTRUCTIONS FOR COMPLETING FAA FORM 8710-1**

**I. APPLICATION INFORMATION.** *Mark "X" in all appropriate blocks(s).*

**Note:** Please enter all dates in eight digits as MM/DD/YYYY.  
Use numeric characters, (e.g. 01/01/2014).

**Block A. Name.** Enter full legal name (Last, First, Middle). If your full legal name is more than 50 characters, use no more than one middle name for record purposes. Do not change the name on subsequent applications unless it is done in accordance with 14 CFR part 61.25. If you do not have a middle name, enter "NMN." If you have a middle initial only, indicate "Initial only." Indicate if you are a Jr., II, or III.

**Block B. Social Security Number.** Enter either your 9-digit social security number, "Do Not Use" or "None" if you are not a U.S. citizen. If entering a social security number, only enter a 9-digit U.S. social security number (optional). See supplemental Privacy Act Information.

**Block C. Date of Birth.** Enter your date of birth in the following format: MM/DD/YYYY. Check for accuracy. Verify that DOB is the same as it is on the medical certificate.

**Block D. Place of Birth.** If you were born in the USA, enter the city and state where you were born. If the city is unknown, enter the county and state. If you were born outside the USA, enter the name of the city and country where you were born.

**Block E1. Residential Address.** Enter your complete residential address. This must include street number, city, state, and zip code. If the applicant has a foreign address, the country must be stated. If a residential address does not exist, a map or written directions to the applicant's physical residence must be attached to the application. Verify that the numbers are not transposed.

**Block E2. Mailing Address.** Enter your mailing address, if different than block E1. This may be a residence, post office box, rural route, flight school address, personal mail box (PMB), commercial address, or other mail drop location, as applicable. The address provided in block E2, if any, will be printed on the permanent airman certificate. If you want your airman certificate mailed to an address other than provided in blocks E1 or E2, you will need to provide instructions on a separate attachment or in the remarks section of the form.

**Block F. Citizenship/Nationality.** Mark USA if you are a U.S. Citizen or legally naturalized U.S. Citizen. If you are not a U.S. citizen, mark "Other" and enter the country where you are a legal citizen. To claim Dual Citizenship the applicant must present appropriate documentation of citizenship for each country.

**Block G. Do you read, speak, write and understand the English language?** Mark yes or no. If you answered "No" and it is due to medical reasons, an operating limitation will be placed on the airman certificate.

**Block H. Height.** Enter your height in inches. Example: 5'8" would be entered as 68 in. No fractions, use whole inches only.

**Block I. Weight.** Enter your weight in pounds. No fractions, use whole pounds only.

**Block J. Hair Color.** Spell out the color of your hair. Choose from the following: bald, black, blond, brown, gray, red or white. If you wear a wig or toupee, enter the color of your hair under the wig or toupee.

**Block K. Eye Color.** Spell out the color of your eyes. Choose from the following: black, blue, brown, gray, green, or hazel.

**Block L. Sex.** Mark either Male or Female as appropriate.

**Block M. Do You Hold or Have You Ever Held An FAA Pilot Certificate?** Mark yes or no. (NOTE: A student pilot certificate is a pilot certificate.) If Yes, complete Blocks M1, M2, and M3.

**Block M1. Grade of Certificate.** Enter the grade of the FAA pilot certificate you hold (i.e., Student, Recreational, Private, Commercial, or ATP). DO NOT enter flight instructor certificate information.

**Block M2. Certificate Number.** Enter your current FAA certificate number as it appears on the pilot certificate.

**Block M3. Date Issued.** Enter the date your pilot certificate was last issued.

**Block N. Do You Hold a Medical Certificate?** Mark applicable boxes. If yes, complete blocks N1, N2, and N3.

**Block N1. Class of Medical Certificate.** Enter the class as shown on the medical certificate, (i.e., First, Second, or Third Class).

**Block N2. Name of Medical Examiner.** Enter the medical examiner's name as shown on your medical certificate.

**Block N3. Date Issued.** Enter the date your medical certificate was issued.

**Block O. Narcotics Drugs.** Mark appropriate block. Only mark "Yes" if you have actually been convicted. If you have been charged with a violation which has not been adjudicated, mark "No." Do not include alcohol offenses involving a motor vehicle mode of transportation as those are covered on the FAA Form 8500-8, Medical application.

**Block O1. Date of Final Conviction.** If block "N" was marked "Yes" provide the date of final conviction.

**II. CERTIFICATE OR RATING APPLIED FOR ON BASIS OF:  
Block A. Completion of Required Test.**

1. Aircraft to be used. (If flight test required) – Enter the make and model of each aircraft used or represented. If a flight simulation training device (FSTD) is used, indicate Level of Device(s).
2. Total time in this aircraft and/or approved full flight simulator (FFS) or flight training device (FTD) (Hrs.) – (2a) Enter the total Flight Time (2b) Enter Pilot-In-Command (PIC) Flight Time.

**Block B. U.S. Military Competence Or Experience.** Enter your branch of service, date rated as a U.S. military pilot, and your rank or grade. In block 4a and 4b, enter the make and model of each military aircraft used to qualify (as appropriate).

**Block C. Graduate of an Approved Course.**

1. Name, Location, Certification Number of Training Agency/Center, as shown on the graduation certificate. Indicate if this was a part 142 training center.
2. Curriculum From Which Graduated. Enter name of curriculum and level, category, and/or type rating, as applicable.
3. Date. Date of graduation from indicated course.

**Note:** Approved course graduate must also complete block A "Completion of Test or Activity," if the course is not part of an Air Agency or a part 142 Training Center.

**Block D. Holder of Foreign License.**

1. Country that Issued the Foreign Pilot License.
2. Grade Of Foreign Pilot License (i.e. private, commercial, etc).
3. Number. Number which appears on the foreign license.
4. Ratings. Enter the FAA equivalent only ratings that appear on the foreign license. Indicate the ratings as they will appear on the FAA Certificate (i.e. ASEL, AMEL, ROTORCRAFT HELICOPTER, CE-500, etc).

**Block E. Completion of Air Carrier's Training Program.**

1. Name of air carrier.
2. Date program was started.
3. Identify the training program accomplished.

**III. RECORD OF PILOT TIME.** At a minimum, the applicant should complete the blocks applicable to the certificate or rating sought; however, it is recommended that all pilot time be entered. If decimal points are utilized, ensure that they are legible. Time entered in the "Class Totals" block should reflect time in aircraft class for the certificate or rating sought with this application. The time entered for an FFS, FTD, and/or ATP may be credited towards the total time in the category, class, and instrument time as permitted by the regulations. Add any Flight Engineer time used for ATP in remarks section.

**IV. HAVE YOU PREVIOUSLY RECEIVED A NOTICE OF DISAPPROVAL OR BEEN DENIED FOR ANY REASON FOR THE CERTIFICATE AND/OR RATING FOR WHICH YOU ARE APPLYING?** Mark "Yes" or "No" as appropriate.

**V. APPLICANT'S CERTIFICATION.**

- A. Signature. Sign your name.
- B. Date. The date you signed the application.

NSN: 0052-00-682-5007

Appendix I Airman Certificate Application 8710-1 Form

TYPE OR PRINT ALL ENTRIES IN INK

Form approved OMB No:2120-0021  
Exp. 04/30/2018

<b>Airman Certificate and/or Rating Application</b>																				
<b>I. APPLICATION INFORMATION</b> (Mark 'X' in all the blocks applicable to the certificate or rating for which you are applying):																				
Certificates		Ratings				Other Information/Requests														
Pilot:	Instructor:	Category and/or Class:	Instrument:	Ground Instructor:		Initial	Reexamination	Instrument Proficiency Check												
<input type="checkbox"/> Student	<input type="checkbox"/> Recreational <input type="checkbox"/> Flight	<input type="checkbox"/> ASE <input type="checkbox"/> AME <input type="checkbox"/> Land <input type="checkbox"/> Sea	<input type="checkbox"/> Airplane <input type="checkbox"/> Basic	<input type="checkbox"/> Helicopter <input type="checkbox"/> Advanced	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> Renewal	<input type="checkbox"/> Reissuance	<input type="checkbox"/> Medical Flight Test												
<input type="checkbox"/> Private	<input type="checkbox"/> Commercial <input type="checkbox"/> Ground	<input type="checkbox"/> Helicopter <input type="checkbox"/> Balloon <input type="checkbox"/> Glider	<input type="checkbox"/> Gyroplane <input type="checkbox"/> Airship <input type="checkbox"/> Powered-Lift	<input type="checkbox"/> Powered-Lift <input type="checkbox"/> Instrument	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> Reinstatement	<input type="checkbox"/> Flight Review	<input type="checkbox"/> Limitation Removal												
		Type Rating:	<input type="checkbox"/> Added Rating				Specify other:				<input type="checkbox"/> IPL									
A. Name (Last, First, Middle)			B. SSN (u.s. Only)		C. Date of Birth		D. Place of Birth (City and State) or (City and Country)													
					MM/DD/YYYY															
E1. Residential Address (Including City, State, Zip Code, and Country)			E2. Mailing Address (This address will be printed on the permanent airman certificate, if different than block E1.)				F. Citizenship / Nationality		G. Do you read, speak, write, & understand the English language?											
							<input type="checkbox"/> USA <input type="checkbox"/> Other	specify:	<input type="checkbox"/> Yes	<input type="checkbox"/> No										
			H. Height (inches)		I. Weight (pounds)	J. Hair Color	K. Eye Color	L. Sex	<input type="checkbox"/> Male	<input type="checkbox"/> Female										
M. Do you hold, or have you ever held an FAA certificate?			M1. Grade of Certificate		M2. Certificate Number			M3. Date Issued												
<input type="checkbox"/> Yes <input type="checkbox"/> No																				
N. Do you hold a Medical Certificate?			N1. Class of Medical Certificate		N2. Name of Medical Examiner			N3. Date Issued												
<input type="checkbox"/> Yes - FAA <input type="checkbox"/> Yes - Foreign <input type="checkbox"/> Yes-Military <input type="checkbox"/> No																				
O. Have you ever been convicted for violation of any Federal or State statutes relating to narcotic drugs, marijuana, or depressant or stimulant drugs or substances? <i>Do not include alcohol offenses involving motor vehicle mode of transportation as those offenses are covered on the FAA Form 8500-8, Airman Medical Application Form.</i> <input type="checkbox"/> Yes <input type="checkbox"/> No												O1. Date of Final Conviction								
<b>II. CERTIFICATE OR RATING APPLIED FOR ON BASIS OF:</b>																				
<input type="checkbox"/> A. Completion of Test or Activity		1. Aircraft to be used (If flight test required)			2. Total time in this aircraft and/or approved FFS or FTD (hours)		a. Flight Time		b. As Pilot-in-Command											
<input type="checkbox"/> B. U.S. Military Competence or Experience		1. U.S. Military Service			2. Date Rated in U.S. Military				3. Rank or Grade											
<input type="checkbox"/> C Graduate of an Approved Course		4. List Military aircraft for which you have: <i>(make and model)</i>			a. logged pilot time or provided flight instruction (IP) <i>(make and model)</i>		b. passed an Instrument Proficiency Check (Pilot or CFI) - <i>(make and model)</i>													
<input type="checkbox"/> D Holder of Foreign License		1. Training Agency or Training Center:		1a. Name		1b. Location (City and State)		1c. Certification Number		1d. Part 142? <input type="checkbox"/> Yes <input type="checkbox"/> No										
		2. Curriculum From Which Graduated <i>(Level, Category, and Class and/or Type Rating)</i>								3. Date										
<input type="checkbox"/> E. Air Carrier Training Program		1. Country that Issued the Foreign Pilot License			2. Grade of Foreign Pilot License		3. Foreign Pilot License Number													
		4. Ratings Held on Foreign Pilot License (FAA equivalent only - e.g. ASEL, AMEL, Type rating, etc.)																		
		1. Name of Air Carrier					2. Date Training Began		3. Accomplished Training Program											
									<input type="checkbox"/> Initial <input type="checkbox"/> Upgrade <input type="checkbox"/> Transition <input type="checkbox"/> Recurrent											
<b>III. RECORD OF PILOT TIME (Do not write in the shaded areas)</b>																				
	Total	Instruction Received	Solo	PIC and SIC	Cross Country Instruction Received	Cross Country Solo	Cross Country PIC/SIC	Instrument	Night Instruction Received	Night Take-Off / Landing	Night PIC/SIC	Night Take-Off/Landing PIC/SIC	Class Totals	Number of						
Airplanes				PIC SIC			PIC SIC			PIC SIC	PIC SIC		SEL PIC SIC	MEL PIC SIC	SES PIC SIC	MES PIC SIC	Flights	Aero Tows	Ground Launches	Powered Launches
Rotorcraft				PIC SIC			PIC SIC			PIC SIC	PIC SIC									
Powered Lift				PIC SIC			PIC SIC			PIC SIC	PIC SIC									
Gliders				PIC SIC			PIC SIC			PIC SIC	PIC SIC									
Lighter-Than-Air				PIC SIC			PIC SIC			PIC SIC	PIC SIC		Balloon	Airship						
FFS													SEL PIC SIC	MEL PIC SIC	SES PIC SIC	MES PIC SIC				
FTD																				
ATD																				
IV. Have you previously received a Notice of Disapproval or been denied for any reason for the certificate AND/OR rating for which you are applying? <input type="checkbox"/> Yes <input type="checkbox"/> No																				
<b>V. APPLICANT'S CERTIFICATION:</b> I certify that all statements and answers provided by me on this application form are complete and true to the best of my knowledge and I agree that they are to be considered as part of the basis for issuance of any FAA certificate to me. I have received the Pilot's Bill of Rights Written Notification of Investigation that accompanies this form. I have also read and understand the Privacy Act statement that accompanies this form.																				
Signature of Applicant									Date											
									MM/DD/YYYY											

FAA Form 8710-1 (04-16) Supersedes Previous Edition

NSN: 0052-00-682-5007

**Appendix I Airman Certificate Application 8710-1 Form**

<input type="checkbox"/> Accepted Student Pilot Application - I have personally reviewed the applicant's information and verified this person meets the eligibility requirements and verified the applicant's identification. <input type="checkbox"/> Flight Review <input type="checkbox"/> Instrument Proficiency Check <input type="checkbox"/> Recommendation - I have personally instructed the applicant and consider this person ready to take the test.		<b>Instructor Action</b> <input type="checkbox"/> Rejected Student Pilot Application		
Date	Certified Flight Instructor's Signature (Print Name and Sign)	Certificate Number	CFI Certificate Expires	
<b>Air Agency's Recommendation</b>				
The applicant has successfully completed our _____ course, and is recommended for certificate or rating without further practical test.				
Date	Agency Name and Number	Official Signature		
<b>Designated Examiner or Airman Certification Representative Report</b>				
<input type="checkbox"/> Accepted-Student Pilot Application <input checked="" type="checkbox"/> I have personally reviewed this applicant's pilot logbook and/or training record, and I certify that the individual meets the applicable requirements of 14 CFR Part 61 for the certificate or rating sought. <input checked="" type="checkbox"/> I have personally reviewed this applicant's graduation certificate, and found it to be appropriate and in order, and have returned the certificate. (Original ATP CTP graduation certificate must be attached) <input checked="" type="checkbox"/> I have personally tested and/or verified this applicant in accordance with pertinent procedures and standards with the result indicated below.		<input type="checkbox"/> Rejected Student Pilot Application <input type="checkbox"/> I have personally delivered the Written Notification under the Pilot's Bill of Rights to the applicant. <input type="checkbox"/> Approved - Temporary Certificate Issued (Original Attached) <input type="checkbox"/> Disapproved - Disapproval Notice Issued (Original Attached)		
Location of Test (Name of Facility or Airport, City, State)		Duration of Test		
		Ground / Oral	FFS / FTD	Flight
Certificate or Rating Being Applied For (Grade, Category, Class and/or Type Rating)		Type(s) of Aircraft Used	Registration Number(s)	
Date	Examiner's Signature (Print Name & Sign)	Certificate Number	Designation Number	Designation Expires
<b>Evaluator's Record (Use for All ATP Certificate(s) and/or Type Rating(s))</b>				
Ground / Oral	<input type="checkbox"/>	<input type="checkbox"/>	Signature and Certificate Number	
Approved FFS/FTD Check	<input type="checkbox"/>	<input type="checkbox"/>		
Aircraft Flight Check	<input type="checkbox"/>	<input type="checkbox"/>		
Advanced Qualification Program	<input type="checkbox"/>	<input type="checkbox"/>		
<b>Aviation Safety Inspector or Technician Report</b>				
I have personally tested this applicant in accordance with or have otherwise verified that this applicant complies with, pertinent procedures, standards, policies, and or necessary requirements with the result indicated below. (The approved box need only checked if the Inspector is the one that issued the temporary airman certificate)				
<input type="checkbox"/> I have personally delivered the Written Notification under the Pilot's Bill of Rights to the applicant. <input type="checkbox"/> Approved - Temporary Certificate Issued (Original Attached) <input type="checkbox"/> Disapproved - Disapproval Notice Issued (Original Attached)		<input type="checkbox"/> Accepted - Student Pilot Application <input type="checkbox"/> Rejected - Student Pilot Application		
Location of Test (Name of Facility or Airport, City, State)		Duration of Practical Test		
		Ground / Oral	FFS / FTD	Flight
Certificate or Rating Being Applied For (Grade, Category, Class and/or Type Rating)		Type(s) of Aircraft Used	Registration No.(s)	
Certification Activities:				
<input type="checkbox"/> Examiner's Recommendation Provided/Reviewed <input type="checkbox"/> Accepted <input type="checkbox"/> Rejected <input type="checkbox"/> Application for a Student Pilot Certificate Accepted <input type="checkbox"/> Reissue or exchange of pilot, CFI, or G.I. certificate <input type="checkbox"/> Change of name, nationality, gender or date of birth <input type="checkbox"/> SIC Type Rating Issued under § 61.55(b) (Part 91)		<input type="checkbox"/> Ground Instructor Certificate Issued <input type="checkbox"/> Basic <input type="checkbox"/> Advanced <input type="checkbox"/> Instrument	<input type="checkbox"/> Flight Instructor Certificate Issued <input type="checkbox"/> Initial <input type="checkbox"/> Renewal <input type="checkbox"/> Reinstatement <input type="checkbox"/> Instructor Renewal Based On: <input type="checkbox"/> Activity <input type="checkbox"/> Training Course <input type="checkbox"/> Test <input type="checkbox"/> Duties and Responsibilities <input type="checkbox"/> Military Instructor Proficiency Check	<input type="checkbox"/> Certificate or Rating Based on: <input type="checkbox"/> Approved FAA Qualification <input type="checkbox"/> Military Competency Criteria Not Identified on Page 1 <input type="checkbox"/> Foreign License <input type="checkbox"/> Special medical test conducted – report forwarded to issuing medical office or AAM-300 <input type="checkbox"/> Special Test-Reexamination (44709) conducted <input type="checkbox"/> Approved <input type="checkbox"/> Disapproved
Training Course (FIRC) Name		Graduation Certificate Number		Date of FIRC Graduation Certificate
Date	Inspector's Signature (Print Name & Sign)	Certificate Number		FAA Office (e.g. SO-15, WP-19)
<b>Attachments:</b> <input type="checkbox"/> Certifying Statement <input type="checkbox"/> College Transcript (Official) <input type="checkbox"/> ATP CTP Graduation Certificate <input type="checkbox"/> Knowledge Test Report <input type="checkbox"/> Temporary Airman Certificate <input type="checkbox"/> Notice of Disapproval <input type="checkbox"/> Superseded Airman Certificate				
<b>Airman's Identification (ID)</b> (U.S. driver's license or passport recommended)		<b>Applicant Information</b> (required if printed on 2 pages)		
Form of ID		Name		
ID Number (If issued by State, include State)		Date of Birth		
Expiration Date (must be valid)		Certificate Number		
Telephone Number		E-Mail Address		
<input type="checkbox"/> Meets FAA Aviation English Language Proficiency <input type="checkbox"/> Does Not Meet FAA Aviation English Language Proficiency REMARKS from Inspector or Examiner :				

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# **Stage 1 Exam**

## Fundamentals of Instructing

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*Note: for Figures in the Stage Exams, see the figures printed at the end of this Appendix (pages 76 – 92).*

1. A change in behavior as a result of experience can be defined as
  - A—learning.
  - B—knowledge.
  - C—understanding.
2. The learning process may include some elements such as verbal, conceptual, and
  - A—habitual.
  - B—experiential.
  - C—problem solving.
3. What is the basis of all learning?
  - A—Perception.
  - B—Motivation.
  - C—Positive self-concept.
4. A basic need that affects all of a person's perceptions is the need to
  - A—maintain and enhance the organized self.
  - B—accomplish a higher level of satisfaction.
  - C—avoid areas that pose a threat to success.
5. Which factor affecting perception has a great influence on the total perceptual process?
  - A—Self-concept.
  - B—Goals and values.
  - C—Time and opportunity.
6. Perceptions result when a person
  - A—gives meaning to sensations being experienced.
  - B—is able to discern items of useful information.
  - C—responds to visual cues first, then aural cues, and relates these cues to ones previously learned.
7. Name one way an instructor can help develop student insights.
  - A—Provide a secure and nonthreatening environment in which to learn.
  - B—Point out various items to avoid during the learning process.
  - C—Keep learning blocks small so they are easier to understand.
8. Which statement is true concerning motivations?
  - A—Motivations must be tangible to be effective.
  - B—Motivations may be very subtle and difficult to identify.
  - C—Negative motivations often are as effective as positive motivations.

9. For a motivation to be effective, students must believe their efforts will be rewarded in a definite manner. This type of motivation is
  - A—subtle.
  - B—negative.
  - C—tangible.
10. A learning plateau may be defined as the
  - A—point in the learning curve at which skill proficiency retrogresses.
  - B—normal leveling-off of an individual's learning rate.
  - C—achievement of the highest possible level of competence for a particular individual.
11. Affective domain relates to
  - A—physical skills.
  - B—knowledge.
  - C—attitudes, beliefs, and values.
12. The process of psychologically counterbalancing perceived weaknesses by emphasizing strength in other areas is
  - A—projection.
  - B—compensation.
  - C—rationalization.
13. Student confidence tends to be destroyed if instructors
  - A—bluff whenever in doubt about some point.
  - B—continually identify student errors and failures.
  - C—direct and control the student's actions and behavior.
14. The effectiveness of communication between instructor and student is measured by the
  - A—degree of dynamic, interrelated elements.
  - B—similarity between the idea transmitted and the idea received.
  - C—relationship between communicative and dynamic elements.
15. During a teaching lecture, what would detract from an instructor's dignity and reflect upon the student's intelligence?
  - A—Use of figurative language.
  - B—Errors in grammar and use of vulgarisms.
  - C—Using picturesque slang and colloquialisms.
16. The distinguishing characteristic of an informal lecture is the
  - A—use of visual aids.
  - B—student's participation.
  - C—requirement for informal notes.
17. Which teaching method is most economical in terms of the time required to present a given amount of material?
  - A—Briefing.
  - B—Teaching lecture.
  - C—Demonstration/performance.

18. The main advantage(s) with heterogeneous groups are that students tend to
  - A—think for themselves since they are in a group of dissimilar students.
  - B—interact and achieve in ways and at levels that are rarely found with other instructional strategies.
  - C—interact and achieve since they are in a group of similar students.
19. An instructor's critique of a student's performance should
  - A—treat every aspect of the performance in detail.
  - B—be private so that the student is not embarrassed.
  - C—provide direction and guidance to improve performance.
20. Regarding oral quizzes, what kind of question would be answered based on memory or recall?
  - A—A fact question.
  - B—A provocative question.
  - C—A thought question.
21. The characteristic of a written test, which measures small differences in achievement between students, is its
  - A—validity.
  - B—reliability.
  - C—discrimination.
22. A written test having the characteristic of discrimination will
  - A—be easy to give and easily graded.
  - B—include a representative and comprehensive sampling of the course objectives.
  - C—distinguish between students both low and high in achievement.
23. Which is the main disadvantage of supply-type test items?
  - A—They cannot be graded with uniformity.
  - B—They are readily answered by guessing.
  - C—They are easily adapted to statistical analysis.
24. Which is one of the major difficulties encountered in the construction of multiple-choice test items?
  - A—Adapting the items to statistical item analysis.
  - B—Keeping all responses approximately equal in length.
  - C—Inventing distractors which will be attractive to students lacking knowledge or understanding.
25. Which statement is true relative to effective multiple-choice test items?
  - A—Negative words or phrases need not be emphasized.
  - B—Items should call for abstract background knowledge.
  - C—Keep all alternatives of approximately equal length.
26. Instructional aids used in the teaching/learning process should be
  - A—self-supporting and require no explanation.
  - B—compatible with the learning outcomes to be achieved.
  - C—selected prior to developing and organizing the lesson plan.

27. The use of instructional aids should be based on their ability to support a specific point in the lesson. What is the first step in determining if and where instructional aids are necessary?
- A—Organize subject material into an outline or a lesson plan.  
B—Determine what ideas should be supported with instructional aids.  
C—Clearly establish the lesson objective, being certain what must be communicated.
28. A pretest constructed to measure knowledge and skills necessary to begin a course is referred to as a
- A—virtual-reality test.  
B—norm-referenced test.  
C—criterion-referenced test.
29. Examples of all common endorsements can be found in the current issue of
- A—AC 61-67, Appendix 1.  
B—AC 91-67, Appendix 1.  
C—AC 61-65, Appendix 1.
30. One possible indication of a student's abnormal reaction to stress would be
- A—a hesitancy to act.  
B—extreme overcooperation.  
C—a noticeable lack of self-control.
31. Which is one of the ways in which anxiety will affect a student?
- A—Anxiety may limit the student's ability to learn from perceptions.  
B—Anxiety will speed up the learning process for the student if properly controlled and directed by the instructor.  
C—Anxiety causes dispersal of the student's attention over such a wide range of matters as to interfere with normal reactions.
32. Which statement is true regarding lesson plans?
- A—Lesson plans should not be directed toward the course objective; only to the lesson objective.  
B—A well-thought out mental outline of a lesson may be used any time as long as the instructor is well prepared.  
C—Lesson plans help instructors keep a constant check on their own activity as well as that of their students.
33. Which statement is true about lesson plans?
- A—Lesson plans should follow a prescribed format.  
B—Standard prepared lesson plans are effective for teaching all students.  
C—The use of standard lesson plans may not be effective for students requiring a different approach.
34. (Refer to Figure 1.) Section D is titled:
- A—Instructor's Actions.  
B—Content.  
C—Equipment.

35. A CFI can detect fatigue by noting these characteristics in the student
  - A—Nervous laughter.
  - B—Loss of accuracy and control, and irritability.
  - C—Poor performance and macho attitude.
36. The Practical Test Standards are an example of
  - A—criterion referenced tests.
  - B—formative assessments.
  - C—summative assessments.
37. Which skill involves the cognitive domain of learning?
  - A—Understanding how the flight controls should be positioned during a turn.
  - B—A positive reception for learning new skills.
  - C—Performing a short-field approach and landing to Practical Test Standards.
38. Which stage of skill acquisition is characterized by student able to assess personal progress and adjust performance accordingly?
  - A—Cognitive stage.
  - B—Associative stage.
  - C—Automatic response stage.
39. Studies suggest a student achieves better results if distractions are avoided during what type of practice?
  - A—Deliberate practice.
  - B—Blocked practice.
  - C—Random practice.
40. Acute fatigue may be evidenced by a student pilot's apparent
  - A—increase in attention to detail.
  - B—neglect of secondary tasks.
  - C—acceptance of unwarranted risks.
41. How is learning enhanced by electronic-based learning?
  - A—Instructors can control what is learned and how fast students learn it.
  - B—Less time can be spent on instruction compared to traditional classroom training.
  - C—Peer interaction and personal feedback are limited resulting in a more efficient training program.
42. A method for correction student impatience is for the instructor to
  - A—present the necessary preliminary training one step at a time, with clearly stated goals for each step.
  - B—key the instruction to use the interests and enthusiasm students bring with them.
  - C—avoid assigning impossible or unreasonable goals for the student to accomplish.
43. Commercially-developed test preparation material
  - A—replaces instructor-led training.
  - B—teaches higher-order thinking skills.
  - C—places emphasis on rote learning over the more advanced learning levels.

44. An aviation instructor should write performance-based objectives
  - A—to fit the desired outcome of the lesson.
  - B—that match the practical test standards.
  - C—that also work with decision-based objectives.
45. Drill and practice method of training delivery is based on the learning principle of
  - A—intensity.
  - B—recency.
  - C—exercise.
46. When students display the defense mechanism of denial they
  - A—become visibility angry, upset, or childish.
  - B—may attempt to minimize the situation.
  - C—attempt to justify actions by asking numerous questions.
47. Students who recognize that the instructor is inadequately prepared can become
  - A—assertive.
  - B—apprehensive.
  - C—apathetic.
48. During a flight training course, when is it appropriate to introduce the students to the acceptable standards for passing the practical test?
  - A—at the beginning of each flight lesson.
  - B—not until 3 hours before the practical test preparation instruction required by regulation.
  - C—During phase/stage check to assess a student's progression at strategic course transitions.
49. Which statement is true regarding assessment of student learning?
  - A—Assessment should be a formal process and results recorded so the students are continually aware of their progress.
  - B—Assessment of student learning should be an integral part of each lesson.
  - C—if deficiencies or faults not associated with the present lesson are revealed, they should be corrected immediately.
50. Assignment of goals the student considers difficult
  - A—usually provides a challenge and promotes learning.
  - B—may discourage the student and retard learning.
  - C—is usually appropriate for only highly motivated students.

# **Stage 2 Exam**

## **Advanced Ground Instructor**

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*Note: for Figures in the Stage Exams, see the figures printed at the end of this Appendix (pages 76 – 92).*

1. Which is the primary driving force of weather on the Earth?  
A—The Sun.  
B—Coriolis.  
C—Rotation of the Earth.
  
2. If the air temperature is +6°C at an elevation of 700 feet and a standard (average) temperature lapse rate exists, what will be the approximate freezing level?  
A—6,700 feet MSL.  
B—3,700 feet MSL.  
C—2,700 feet MSL.
  
3. The windflow around a low pressure is  
A—cyclonic.  
B—adiabatic.  
C—anticyclonic.
  
4. Streamers of precipitation trailing beneath clouds but evaporating before reaching the ground are known as  
A—virga.  
B—sublimation.  
C—condensation trails.
  
5. The conditions most favorable to wave formation over mountainous areas are a layer of  
A—unstable air at mountaintop altitude and a wind of at least 15 to 25 knots blowing across the ridge.  
B—stable air at mountaintop altitude and a wind of at least 15 to 25 knots blowing across the ridge.  
C—moist, unstable air at mountaintop altitude and a wind of less than 5 knots blowing across the ridge.
  
6. (Refer to Figure 2.) Using the 1400 sounding, does an inversion exist and, if so, at what altitudes?  
A—No; there is no inversion shown.  
B—Yes; between 10,000 and 13,000 feet.  
C—Yes; between 13,000 and 15,000 feet.
  
7. (Refer to Figure 9.) Which symbol used on a Surface Analysis Weather Chart represents a dissipating warm front?  
A—1  
B—2  
C—3

8. What is the expected duration of an individual microburst?
  - A—One microburst may continue for as long as an hour.
  - B—Five minutes with maximum winds lasting approximately 2 to 4 minutes.
  - C—Seldom longer than 15 minutes from the time the burst strikes the ground until dissipation
9. A written statement from an authorized instructor certifying that an applicant has received the required training in preparation for a practical test must be dated within how many days preceding the date of application?
  - A—60
  - B—90
  - C—120
10. What night flight training is required for an unrestricted Private Pilot Certificate with an airplane rating?
  - A—3 hours to include 10 takeoffs and 10 landings and one cross-country flight of over 100 nautical miles.
  - B—3 hours to include five takeoffs and five landings (each landing from a traffic pattern).
  - C—1 hour to include three takeoffs and three landings.
11. An applicant for a Commercial Pilot Certificate with a glider rating must have at least
  - A—35 glider flights launched by ground tow or 20 launched by aerotow.
  - B—25 hours as pilot in gliders and 100 glider flights as pilot in command.
  - C—200 hours of pilot time in heavier-than-air aircraft, including at least 10 glider flights as pilot in command during which 360° turns were made.
12. To endorse a student pilot's logbook for solo flight, an instructor is required, in part, to have
  - A—given that student cross-country flight training.
  - B—given that student flight training in the type of aircraft involved.
  - C—at least 5 hours of experience as pilot in command in the aircraft involved.
13. Unless otherwise authorized or required by air traffic control, what is the maximum indicated airspeed at which a person may operate an aircraft below 10,000 feet MSL?
  - A—200 knots.
  - B—250 MPH.
  - C—250 knots.
14. What is the minimum fuel requirement for flight under VFR during daylight hours in an airplane? Enough to fly to
  - A—the first point of intended landing and to fly after that for 20 minutes at normal cruise speed.
  - B—the first point of intended landing and to fly after that for 30 minutes at normal cruise speed.
  - C—the first point of intended landing and to fly after that for 45 minutes at normal cruise speed.
15. Authority for approval of a minimum equipment list (MEL) must be obtained from the
  - A—Administrator.
  - B—FAA district office.
  - C—aircraft manufacturer.

16. The critical angle of attack at which a given aircraft stalls is dependent on the
  - A—gross weight.
  - B—design of the wing.
  - C—attitude and airspeed.
17. A rectangular wing, as compared to other wing planforms, has a tendency to stall first at the
  - A—wingtip providing adequate stall warning.
  - B—wing root providing adequate stall warning.
  - C—wingtip providing inadequate stall warning.
18. With regard to gyroscopic precession, when a force is applied at a point on the rim of a spinning disc, the resultant force acts in which direction and at what point?
  - A—In the same direction as the applied force, 90° ahead in the plane of rotation.
  - B—In the opposite direction of the applied force, 90° ahead in the plane of rotation.
  - C—In the opposite direction of the applied force, at the point of the applied force.
19. Most helicopters tend to drift to the right when hovering. What is done to counteract this?
  - A—The mast is rigged slightly to the left.
  - B—The direction of tail rotor thrust can be changed by using anti-torque pedals.
  - C—The cyclic pitch system is rigged forward, and along with gyroscopic precession, this tendency is corrected.
20. When refueling aircraft, which precaution would be adequate for eliminating the potential hazard of static electricity?
  - A—Ensure that battery and ignition switches are off.
  - B—Connect a ground wire from the fuel truck to ground.
  - C—Connect a ground wire between the aircraft, fuel truck, fuel nozzle, and ground.
21. Pitot-static system errors are generally the greatest in which range of airspeed?
  - A—Low airspeed.
  - B—High airspeed.
  - C—Maneuvering speed.
22. In addition to an added safety factor, dual ignition systems also provide
  - A—better combustion.
  - B—increased spark plug life.
  - C—shorter engine warmup periods.
23. Which type of flap creates the least change in pitching moment?
  - A—Split.
  - B—Fowler.
  - C—Slotted.
24. (Refer to Figure 25.) What would be the indicated stall speed in a 30° banked turn with the gear down and flaps set at 15°?
  - A—77 KIAS.
  - B—82 KIAS.
  - C—88 KIAS.

25. (Refer to Figure 34.) How should the 500-pound weight be shifted to balance the plank on the fulcrum?
- A—1 inch to the left.  
B—1 inch to the right.  
C—4.5 inches to the right.

26. The stalling speed of an aircraft will be highest when the aircraft is loaded with a
- A—high gross weight and aft CG.  
B—low gross weight and forward CG.  
C—high gross weight and forward CG.

27. Under which condition is a forward CG most critical?
- A—On takeoff.  
B—On landing.  
C—When in an unusual attitude.

28. (Refer to Figure 39.) Determine the maximum payload for a balloon flying at 1,500 feet at an ambient temperature of 87°F.
- A—515 pounds.  
B—565 pounds.  
C—585 pounds.

29. GIVEN:

Distance ..... 200 NM  
True course .....  $320^\circ$   
Wind .....  $215^\circ$  at 25 kts  
True airspeed ..... 116 kts  
Rate of fuel consumption ..... 19 gal/hr

What would be the approximate groundspeed and amount of fuel consumed?

- A—132 knots; 28.9 gallons.  
B—120 knots; 31.7 gallons.  
C—115 knots; 33.1 gallons.

30. GIVEN:

Usable fuel at takeoff..... 40 gal  
Fuel consumption rate ..... 12.2 gal/hr  
Constant groundspeed ..... 120 kts  
Flight time since takeoff..... 1 hr 30 min

According to Part 91, how much farther can an airplane be flown under night VFR?

- A—216 NM.  
B—156 NM.  
C—121 NM.

31. On a cross-country flight, point X is crossed at 1015 and arrival at point Y is expected at 1025. Use the following information to determine the indicated airspeed required to reach point Y on schedule.

Distance between X and Y ..... 27 NM  
 Forecast wind ..... 240° at 30 kts  
 Pressure altitude ..... 5,500 ft  
 Ambient temperature ..... +05°C  
 True course ..... 100°

The required indicated airspeed would be approximately

- A—162 knots.
- B—140 knots.
- C—128 knots.

32. GIVEN:

True course ..... 238°  
 Variation ..... 3° W  
 Indicated airspeed ..... 160 kts  
 Ambient temperature ..... -15°C  
 Pressure altitude ..... 8,500 ft  
 Forecast wind ..... 160° at 25 kts

Under these conditions, the magnetic heading and groundspeed would be approximately

- A—224° and 171 knots.
- B—233° and 171 knots.
- C—241° and 178 knots.

33. Within the contiguous United States, the floor of Class A airspace is

- A—14,500 feet MSL.
- B—18,000 feet MSL.
- C—18,000 feet AGL.

34. While holding a constant angle of bank in a coordinated turn, the displacement of the turn needle will

- A—increase as airspeed decreases.
- B—increase as airspeed increases.
- C—remain constant regardless of airspeed.

35. During a level turn, increasing the airspeed while maintaining a constant load factor would result in

- A—a decrease in radius of turn.
- B—an increase in radius of turn.
- C—an increase in centrifugal force.

36. What could be a result of a student focusing too far ahead during a landing approach?

- A—Reactions will be either too abrupt or too late.
- B—Rounding out too high and developing an excessive sink rate.
- C—Difficulty in judging the closeness of the ground resulting in a nose-first touchdown.

37. What procedure should be used to correct for slight ballooning during landing?

- A—Decrease power.
- B—Decrease angle of attack.
- C—Hold a constant landing attitude.

38. The collective pitch control should be used to
1. correct for loss of lift during level turns at altitude.
  2. maintain desired engine power.
  3. correct a high rotor RPM during autorotations from altitude.
- The correct statement(s) is(are)
- A—2  
B—1 and 2.  
C—1, 2, and 3.
39. The visual glidepath of a 2-bar VASI provides safe obstruction clearance within plus or minus 10° of the extended runway centerline and to a distance of how many miles from the runway threshold?
- A—4 NM.  
B—6 NM.  
C—10 NM.
40. A series of continuous red lights in the runway centerline lighting indicates
- A—3,000 feet of runway remain.  
B—1,000 feet of runway remain.  
C—the beginning of the runway overrun area.
41. What effect would a crosswind of 5 knots or less have on the wingtip vortices generated by a large aircraft that had just taken off?
- A—A light crosswind would rapidly dissipate the strength of both vortices.  
B—The upwind vortex would tend to remain on the runway longer than the downwind vortex.  
C—Both vortices would move downwind at a greater rate than if the surface wind was directly down the landing runway.
42. Which statement concerning hypoxia is true?
- A—Belligerence or a false sense of security may be symptoms of hypoxia.  
B—Hypoxia is caused by nitrogen bubbles in the joints and bloodstream.  
C—Forcing oneself to concentrate on the flight instruments will help to overcome the effects of hypoxia.
43. How can smoking affect a pilot?
- A—Can decrease night vision by up to 50 percent.  
B—Reduces the oxygen-carrying capability of the blood.  
C—Creates additional carbon dioxide gases in the body which often leads to hyperventilation.
44. During an autolaunch, the pitch angle of the glider should not exceed
- A—10° at 50 feet, 20° at 100 feet, and 45° at 200 feet.  
B—15° at 50 feet, 20° at 100 feet, and 40° at 200 feet.  
C—15° at 50 feet, 30° at 100 feet, and 45° at 200 feet.
45. What is the purpose for the runway hold position markings on the taxiway?
- A—Identifies area where aircraft are prohibited.  
B—Allows an aircraft permission onto the runway.  
C—Holds aircraft short of the runway.

46. Tying a severed suspension line
  - A—will change the shape of the wing and is not permissible.
  - B—is permissible if it is shortened no more than six inches.
  - C—is an acceptable field repair.
47. Action of the elevators moves the plane on its
  - A—lateral axis.
  - B—longitudinal axis.
  - C—vertical axis.
48. An abnormally high engine oil temperature indication may be caused by
  - A—operating with too high viscosity oil.
  - B—the oil level being too low.
  - C—operating with an excessively rich mixture.
49. The “ILS critical area boundary sign” identifies
  - A—the exit boundary for the runway protected area.
  - B—the edge of the ILS critical area.
  - C—the area where an aircraft is prohibited from entering.
50. A foreign national received flight training and completed solo flights outside the U.S. and comes to you to complete flight training and obtain a private pilot certificate. As a CFI, you know that
  - A—you can continue with the student, endorsing the 14 CFR part 61 requirements once they have been met.
  - B—the student will need to complete all required flight training in the U.S. with an authorized flight instructor.
  - C—you can endorse the student for the practical exam upon completion of flight training and the student will have a limitation on the certificate indicating it was issued based on training provided by a non-FAA CFI.

# **Stage 3 Exam**

## **Flight Instructor Airplane**

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*Note: for Figures in the Stage Exams, see the figures printed at the end of this Appendix (pages 76 – 92).*

1. An aircraft is flying at a constant power setting and constant indicated altitude. If the outside air temperature (OAT) increases, true airspeed will
  - A—increase and true altitude will decrease.
  - B—increase and true altitude will increase.
  - C—decrease and true altitude will increase.
2. Which is an operational consideration regarding actual air temperature and dewpoint temperature spread?
  - A—The temperature spread decreases as the relative humidity decreases.
  - B—The temperature spread decreases as the relative humidity increases.
  - C—The temperature spread increases as the relative humidity increases.
3. What are the minimum requirements for the formation of a thunderstorm?
  - A—Sufficient moisture and a lifting action.
  - B—Sufficient moisture, an unstable lapse rate, and lifting action.
  - C—Towering cumulus clouds, sufficient moisture, and a frontal zone.
4. Consider the following statements regarding an Aviation Routine Weather Report (METAR).
  1. A vertical visibility entry does not constitute a ceiling.
  2. Fog (FG) can be reported only if the visibility is less than 5/8 mile.
  3. The ceiling layer will be designated by a ‘C’.
  4. Mist (BR) can be reported only if the visibility is 5/8 statute mile.
  5. Temperatures reported below zero will be prefixed with a ‘-’.
  6. There is no provision to report partial obscurations.Select the true statements.
  - A—2, 4, and 6.
  - B—2, 3, and 5.
  - C—1, 2, 5, and 6.
5. Interpret the following radar weather report:  
LIT 1133 AREA 4TRW 22/100 88/170 196/180 220/115 C2425 MT 310 AT 162/110  
A—There are four cells with tops at 10,000 feet, 17,000 feet, and 11,500 feet.  
B—The maximum top of the cells is located 162° and 110 NM from the station (LIT).  
C—The visibility is 4 miles in thunderstorms and the intensity of thunderstorms remains unchanged.
6. (Refer to Figure 5.) In the TAF for KMEM, what does “SHRA” stand for?
  - A—Rain showers.
  - B—A shift in wind direction is expected.
  - C—A significant change in precipitation is possible.

7. (Refer to Figure 8.) What does symbol 12 mean on a Surface Analysis Weather Chart?
  - A—Squall line.
  - B—Occluded front.
  - C—High-pressure ridge.
8. When using a Constant Pressure Analysis Chart for planning a flight at 10,000 feet MSL, which analysis should the pilot refer to?
  - A—850-millibar analysis.
  - B—700-millibar analysis.
  - C—500-millibar analysis.
9. If the certification category of an airplane is listed as ‘utility,’ it means the airplane is intended for which maneuvers?
  - A—Any type of acrobatic maneuver.
  - B—All nonacrobatic maneuvers plus limited acrobatics including spins.
  - C—Any maneuver incident to normal flying except acrobatics or spins.
10. If a Second-Class Medical Certificate was issued to a commercial pilot 13 months ago, during the next 11 months this pilot may
  - A—not act as pilot in command or carry passengers or property.
  - B—act as pilot in command and carry passengers or property, but not for compensation or hire.
  - C—act as pilot in command for compensation or hire, but may not carry passengers or property for compensation or hire.
11. A private pilot with an airplane single-engine land rating may act as pilot in command of an airplane towing a glider if, within the preceding 24 months, this pilot has made
  - A—ten actual or simulated glider tows.
  - B—three flights as pilot in command of a glider towed by an aircraft.
  - C—at least six flights as pilot in command of an airplane towing a glider within the preceding 6 months.
12. Which preflight action is required for every flight?
  - A—Check weather reports and forecasts.
  - B—Determine runway length at airports of intended use.
  - C—Determine alternatives if the flight cannot be completed.
13. Except when necessary for takeoff or landing, what is the minimum safe altitude for a pilot to operate an aircraft anywhere?
  - A—An altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet.
  - B—An altitude of 500 feet above the surface and no closer than 500 feet to any person, vessel, vehicle, or structure.
  - C—An altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.
14. Which is true regarding VFR operations in Class B airspace?
  - A—An operating VOR is required.
  - B—A Private Pilot Certificate is required for all flight within this airspace.
  - C—Solo student pilots are authorized to fly in Class B airspace if they meet certain requirements.

15. How long may an aircraft be operated after the emergency locator transmitter has been initially removed for maintenance?
  - A—90 days.
  - B—30 days.
  - C—7 days.
16. Aircraft maintenance records must include the current status of
  - A—all appropriate Airworthiness Certificates.
  - B—life-limited parts of only engine and airframe.
  - C—life-limited parts of each airframe, engine, propeller, rotor, and appliance.
17. When considering the forces acting upon an airplane in straight-and-level flight at constant airspeed, which statement is correct?
  - A—Weight always acts vertically toward the center of the Earth.
  - B—Thrust always acts forward parallel to the relative wind and is greater than drag.
  - C—Lift always acts perpendicular to the longitudinal axis of the wing and is greater than weight.
18. Lift produced by an airfoil is the net force developed perpendicular to the
  - A—chord.
  - B—relative wind.
  - C—longitudinal axis of the aircraft.
19. What action is necessary to make an aircraft turn?
  - A—Yaw the aircraft.
  - B—Change the direction of lift.
  - C—Change the direction of thrust.
20. An airplane has a normal stalling speed of 60 knots but is forced into an accelerated stall at twice that speed. What maximum load factor will result from this maneuver?
  - A—4 G's.
  - B—2 G's.
  - C—1 G.
21. (Refer to Figure 18.) What is the stall speed of an airplane under a load factor of 2 if the unaccelerated stall speed is 100 knots?
  - A—115 knots.
  - B—129 knots.
  - C—140 knots.
22. Which action will result in a stall?
  - A—Flying at too low an airspeed.
  - B—Raising the aircraft's nose too high.
  - C—Exceeding the critical angle of attack.
23. Proper mixture control and better economy in the operation of a fuel injected engine can be achieved best by use of
  - A—a fuel-flow gauge.
  - B—an exhaust gas temperature indicator.
  - C—the recommended manifold and RPM setting for a particular altitude.

24. In the Northern Hemisphere, a magnetic compass will normally indicate a turn toward the north if
- A—a left turn is entered from a west heading.
  - B—an aircraft is decelerated while on an east or west heading.
  - C—an aircraft is accelerated while on an east or west heading.
25. (Refer to Figure 23.) Which is a split flap?
- A—2
  - B—3
  - C—4
26. What does the lower limit of the white arc on an airspeed indicator represent?
- A—Minimum controllable airspeed with flaps extended.
  - B—Power-off stall speed in a landing configuration.
  - C—Power-off stall speed in a specified configuration.
27. (Refer to Figure 28.) Determine the approximate total distance required to clear a 50-foot obstacle.
- |                         |                |
|-------------------------|----------------|
| Temperature.....        | 25°C           |
| Pressure altitude ..... | 2,500 ft       |
| Surface.....            | asphalt        |
| Weight.....             | 5,500 lb       |
| Wind .....              | 2 kts tailwind |
- A—2,228 feet.
  - B—2,294 feet.
  - C—2,462 feet.
28. (Refer to Figure 30.) Using a maximum demonstrated crosswind component equal to 0.2  $V_{SO}$ , what is a pilot able to determine?
- |                   |                |
|-------------------|----------------|
| $V_{SO}$ .....    | 65 kts         |
| Landing rwy ..... | 17             |
| Wind .....        | 200° at 30 kts |
- A—Crosswind component is within safe limits.
  - B—Crosswind component exceeds the headwind component.
  - C—Maximum demonstrated crosswind component is exceeded.
29. (Refer to Figure 36.) Determine the condition of the airplane:
- |                                |        |
|--------------------------------|--------|
| Pilot and copilot.....         | 400 lb |
| Passengers, aft position ..... | 240 lb |
| Baggage .....                  | 20 lb  |
| Fuel .....                     | 75 gal |
- A—157 pounds under allowable gross weight; CG is located within limits.
  - B—180 pounds under allowable gross weight; CG is located within limits.
  - C—180 pounds under allowable gross weight, but CG is located aft of the aft limit.
30. When operating a light multiengine airplane at  $V_{MC}$ , the pilot should expect performance to be sufficient to maintain
- A—heading.
  - B—heading and altitude.
  - C—heading, altitude, and be able to climb at 50 feet per minute.

## 31. GIVEN:

Distance ..... 200 NM  
True course ..... 320°  
Wind ..... 215° at 25 kts  
True airspeed ..... 116 kts  
Rate of fuel consumption ..... 19 gal/hr

What would be the approximate groundspeed and amount of fuel consumed?

- A—132 knots; 28.9 gallons.
- B—120 knots; 31.7 gallons.
- C—115 knots; 33.1 gallons.

32. After 141 miles are flown from the departure point, the aircraft's position is located 11 miles off course. If 71 miles remain to be flown, what approximate total correction should be made to converge on the destination?

- A—8°.
- B—11°.
- C—14°.

33. (Refer to Figure 44.) Select the correct statement concerning the Maverick VOR (area 6).

- A—The VOR has Transcribed Weather Broadcast (TWEB) capability.
- B—Hazardous In-Flight Weather Advisory Service (HIWAS) is not available over the VOR.
- C—A pilot may receive transmissions from Fort Worth Flight Service Station over the VOR frequency.

34. (Refer to Figure 45.) When are two-way radio communications required on a flight from Bishop Airport (area 4) to McCampbell Airport (area 1) at an altitude of 2,000 feet MSL?

- A—Entering the Corpus Christi Class C airspace.
- B—Leaving and entering the alert areas and entering Corpus Christi Class C airspace.
- C—Leaving and entering the alert areas, entering the Corpus Christi Class C airspace, and passing through the Cabaniss Field Class D airspace.

35. (Refer to Figure 45.) What is the elevation of the top of the obstruction located approximately 3 NM northwest of McCampbell Airport (area 1)?

- A—280 feet AGL.
- B—353 feet MSL.
- C—382 feet MSL.

36. (Refer to Figure 47.) What is the normal radius of the outer area (area B)?

- A—10 NM.
- B—20 NM.
- C—25 NM.

37. When explaining the techniques used for making short- and soft-field takeoffs, it would be correct to state that

- A—during soft-field takeoffs, lift-off should be made as soon as possible.
- B—during soft-field takeoffs, lift-off should be made only when best angle-of-climb speed is attained.
- C—during short-field takeoffs, lift-off should be attempted only after best rate-of-climb speed is attained.

38. On final approach to landing, a faster-than-normal indicated airspeed should be used when  
A—turbulent conditions exist.  
B—ambient temperatures are above 90°F.  
C—landing at airports above 5,000 feet MSL with above standard temperature conditions.
39. What normally results from misjudging the rate of sink during a landing?  
A—Floating.  
B—Ballooning.  
C—Poor directional control.
40. (Refer to Figure 52.) Misuse of rudder in attempting to hold the pylon during the performance of eights-on-pylons will result in which turn-and-slip indication?  
A—‘2’ if above or below pivotal altitude.  
B—‘1’ if below pivotal altitude; ‘2’ if above pivotal altitude.  
C—‘1’ if above pivotal altitude; ‘2’ if below pivotal altitude.
41. Pilots who initiate a chandelle with a bank that is too steep will most likely  
A—stall before completing the maneuver.  
B—turn more than 180° before completing the rollout.  
C—perform a comparatively level steep turn with a nose-high rollout at the 180° point.
42. When performing a lazy eight, where should the maximum pitchdown attitude occur?  
A—90° point.  
B—135° point.  
C—180° point.
43. Which indications would a pilot see while approaching to land on a runway served by a 2-bar VASI?  
A—if below the glidepath, the near bars will be red and the far bars white.  
B—if on the glidepath, the near bars will appear red and the far bars will appear white.  
C—if departing to the high side of the glidepath, the far bars will change from red to pink to white.
44. Dark adaptation is impaired by exposure to  
A—carbon dioxide.  
B—vitamin A in the diet.  
C—cabin pressure altitudes above 5,000 feet.
45. Which stall must be performed during a flight instructor – airplane practical test?  
A—Power-on or power-off.  
B—Accelerated.  
C—Imminent.
46. During a stall recovery, the instructor allows the student to exceed maneuvering speed. Which best illustrates an ‘antiauthority’ reaction by the instructor?  
A—The student should know how to recover from a stall by this time.  
B—The aircraft can handle a lot more than the maneuvering speed.  
C—There hasn’t been a problem doing this in the past.

- 
47. What is the purpose for the runway hold position markings on the taxiway?
- A—Identifies area where aircraft are prohibited.
  - B—Allows an aircraft permission onto the runway.
  - C—Holds aircraft short of the runway.
48. What action can a pilot take to aid in cooling an engine that is overheating during a climb?
- A—Reduce rate of climb and increase airspeed.
  - B—Reduce climb speed and increase RPM.
  - C—Increase climb speed and increase RPM.
49. At high altitudes, an excessively rich mixture will cause the
- A—engine to overheat.
  - B—fouling of spark plugs.
  - C—engine to operate smoother even though fuel consumption is increased.
50. What effect does high density altitude have on aircraft performance?
- A—It increases engine performance.
  - B—It reduces climb performance.
  - C—It increases takeoff performance.

# Stage Exam Figures

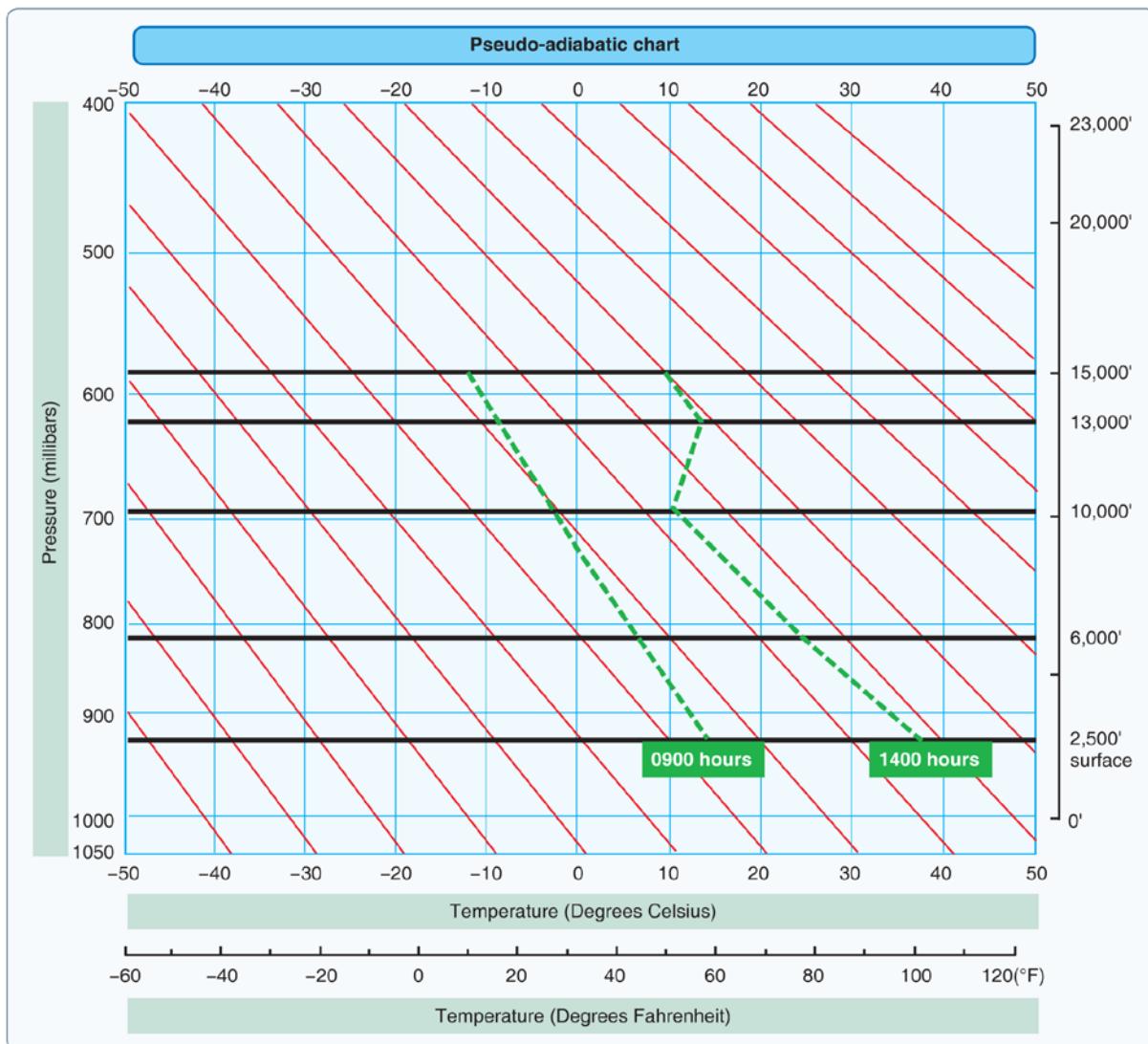
## Stage 1 Exam

LESSON	Ground reference maneuvers	STUDENT	DATE	/	/
A	To develop the student's skill in planning and following a pattern over the ground compensating for wind drift at varying angles.				
B	Use of ground references to control path Observation and control of wind effect Control of airplane attitude, altitude, and heading				
C	Preflight discussion :10 Instructor demonstrations :25 Student practice :45 Postflight critique :10				
D	Chalkboard for preflight discussion IFR visor for maneuvers reviewed				
E	Preflight—discuss lesson objective. Diagram "S" turns, eight along a road, and rectangular course on a chalkboard.  Inflight—demonstrate elements. Demonstrate following a road, "S" turns, eights along a road, and rectangular course, coach student practice.  Postflight—critique student performance and make study assignment.				
F	Preflight—discuss lesson objective and resolve questions.  Inflight—review previous maneuvers including power-off stalls and flight at minimum controllable airspeed. Perform each new maneuver as directed.  Postflight—ask pertinent questions.				
G	Student should demonstrate competency in maintaining orientation, airspeed within 10 knots, altitude within 100 feet, and headings within 10 degrees, and in making proper correction for wind drift.				

FAA Figure 1 — for Stage 1, Question #34

# Stage Exam Figures

## Stage 2 Exam



FAA Figure 2 — for Stage 2, Question #6

### Airspeed calibration—Normal system

Flaps 0°		Flaps 15°		Flaps 45°	
KIAS	KCAS	KIAS	KCAS	KIAS	KCAS
80	84	70	79	70	76
100	102	80	86	80	84
120	122	90	94	90	93
140	141	100	103	100	102
160	161	110	112	110	111
180	181	120	121	120	120
200	201	130	131	130	129
220	221	140	141	140	138
240	242	150	151		

KIAS—indicated airspeed in knots

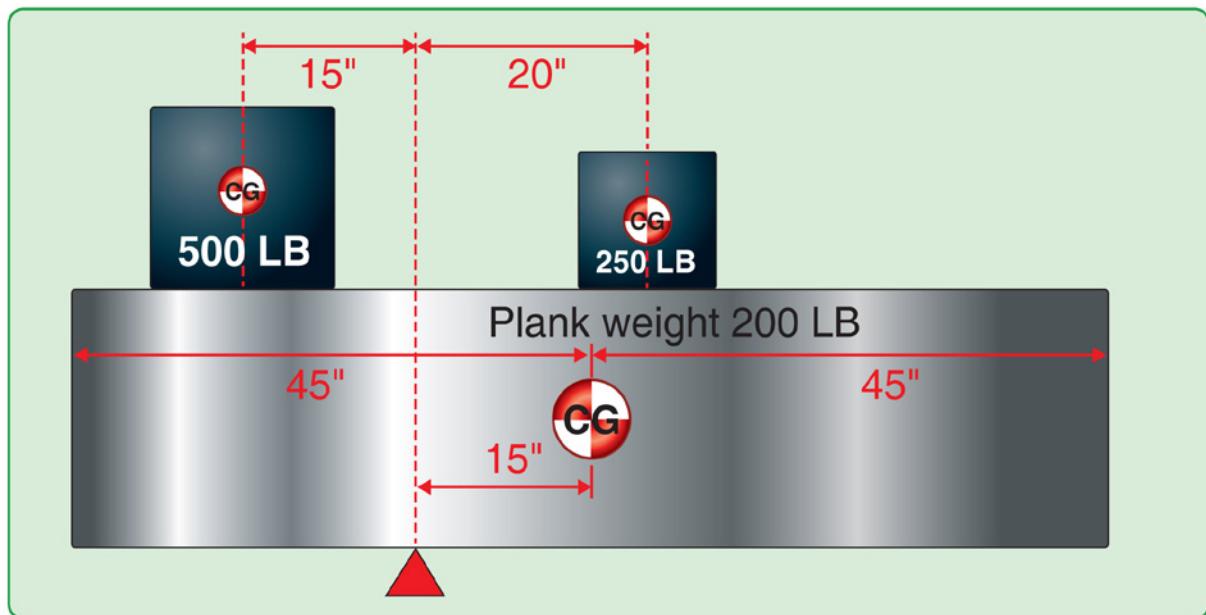
KCAS—calibrated airspeed in knots

### Stall speeds—KCAS

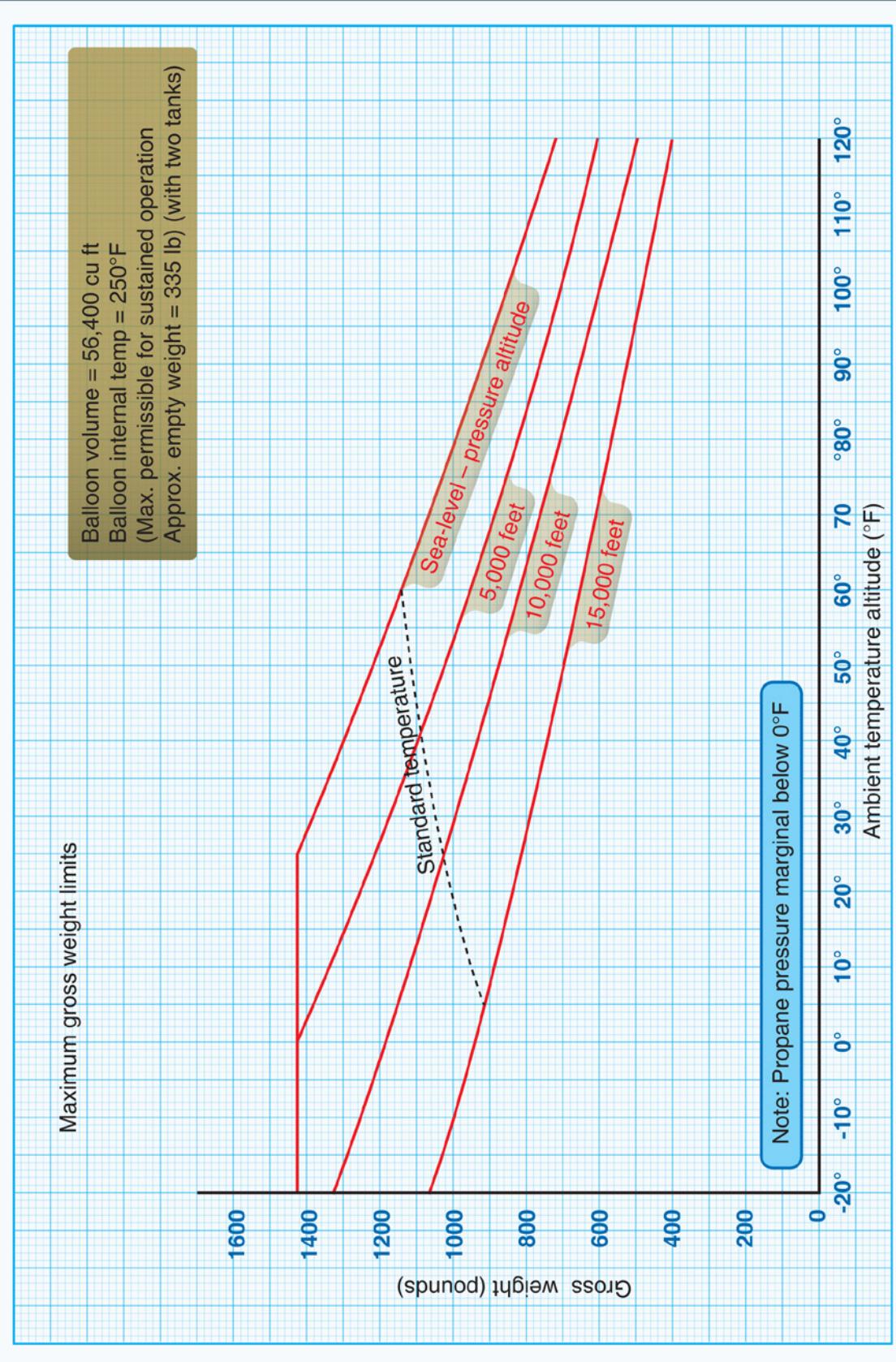
4,600 lb gross weight

Configuration	Angle of bank			
	0°	20°	40°	60°
Gear and flaps up	84	87	97	119
Gear down and flaps 15°	80	83	92	113
Gear down and flaps 45°	76	79	87	108

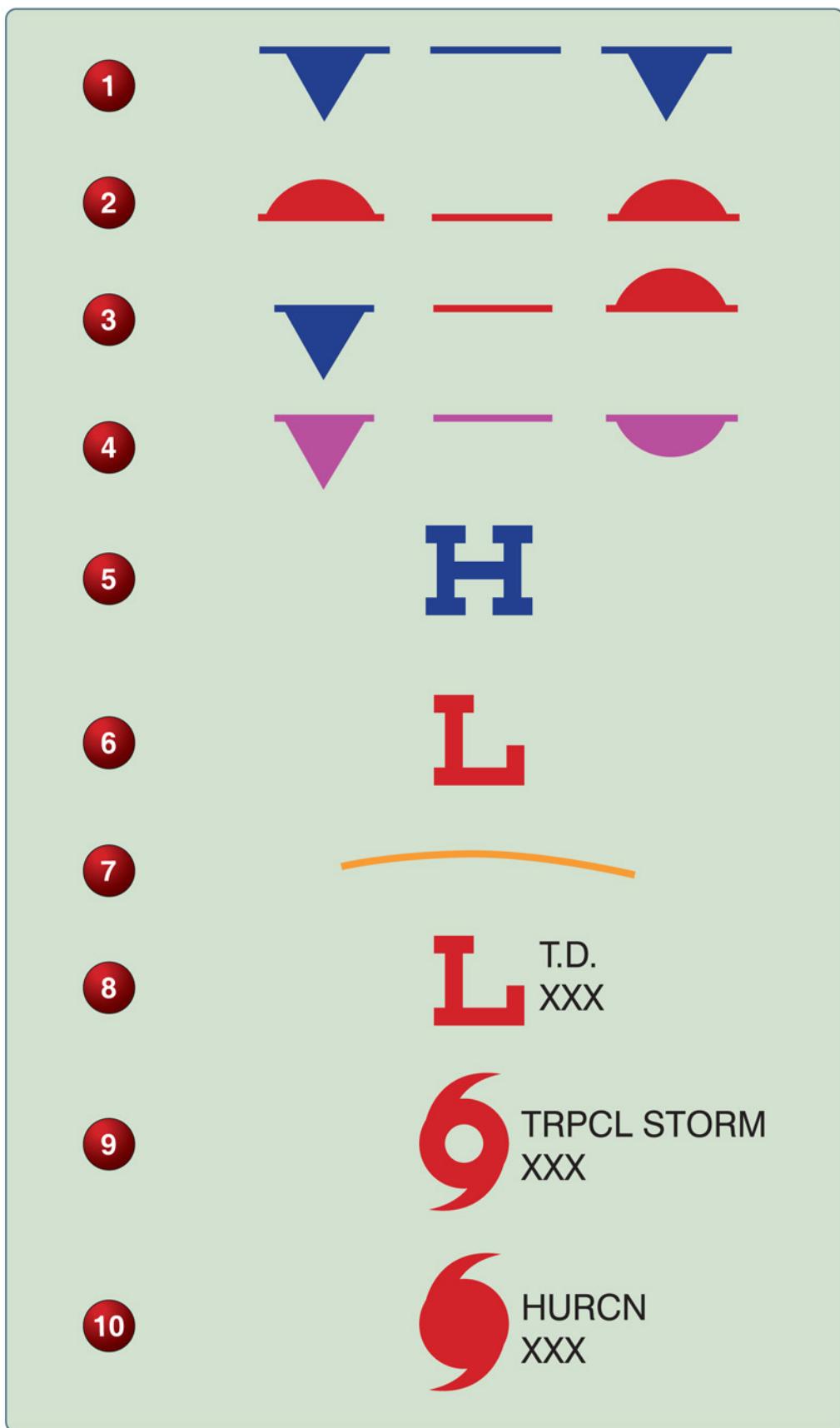
FAA Figure 9 — for Stage 2, Question #7



**FAA Figure 25** — for Stage 2, Question #7



FAA Figure 34 — for Stage 2, Question #25



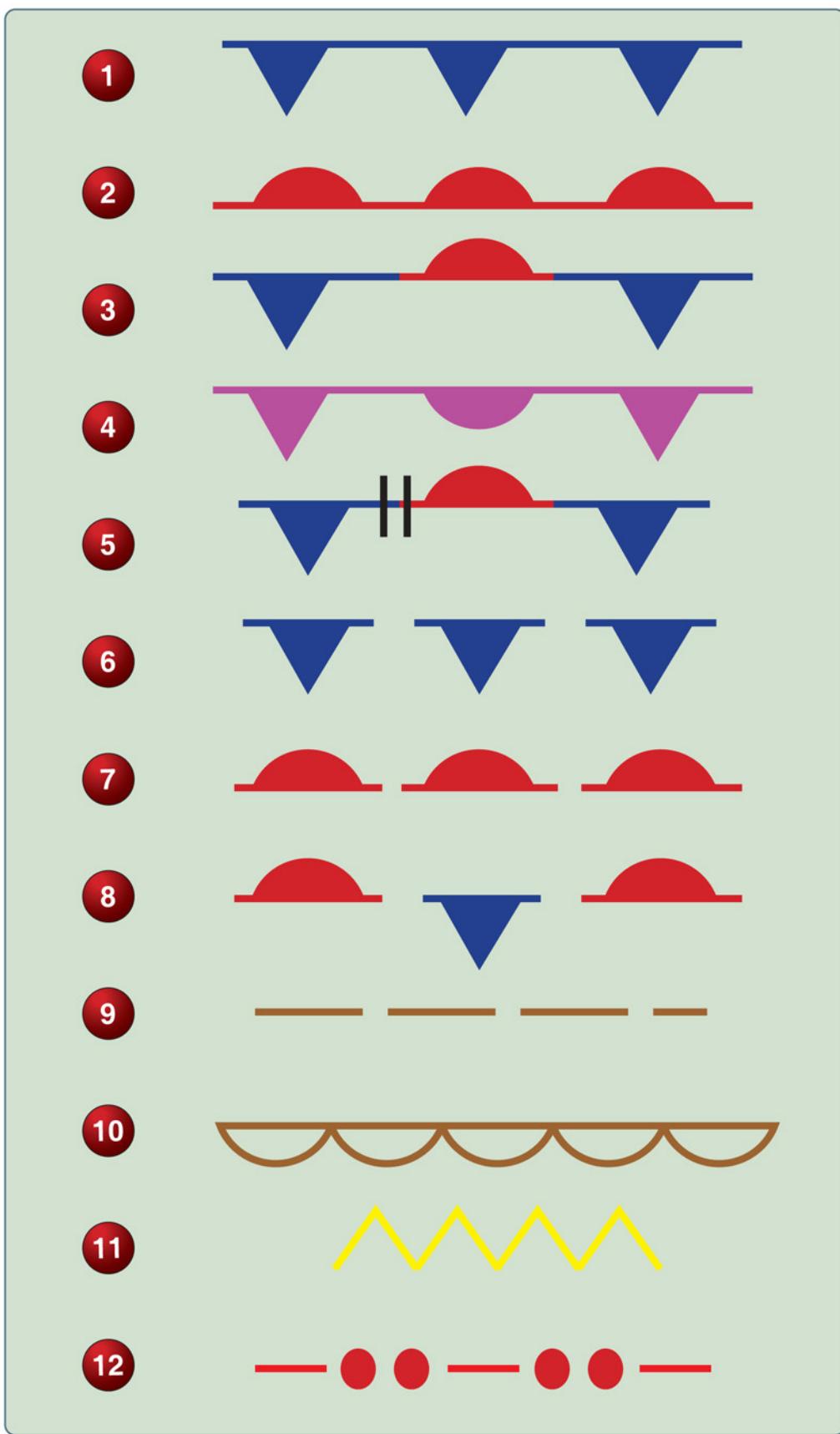
FAA Figure 39 — for Stage 2, Question #28

# Stage Exam Figures

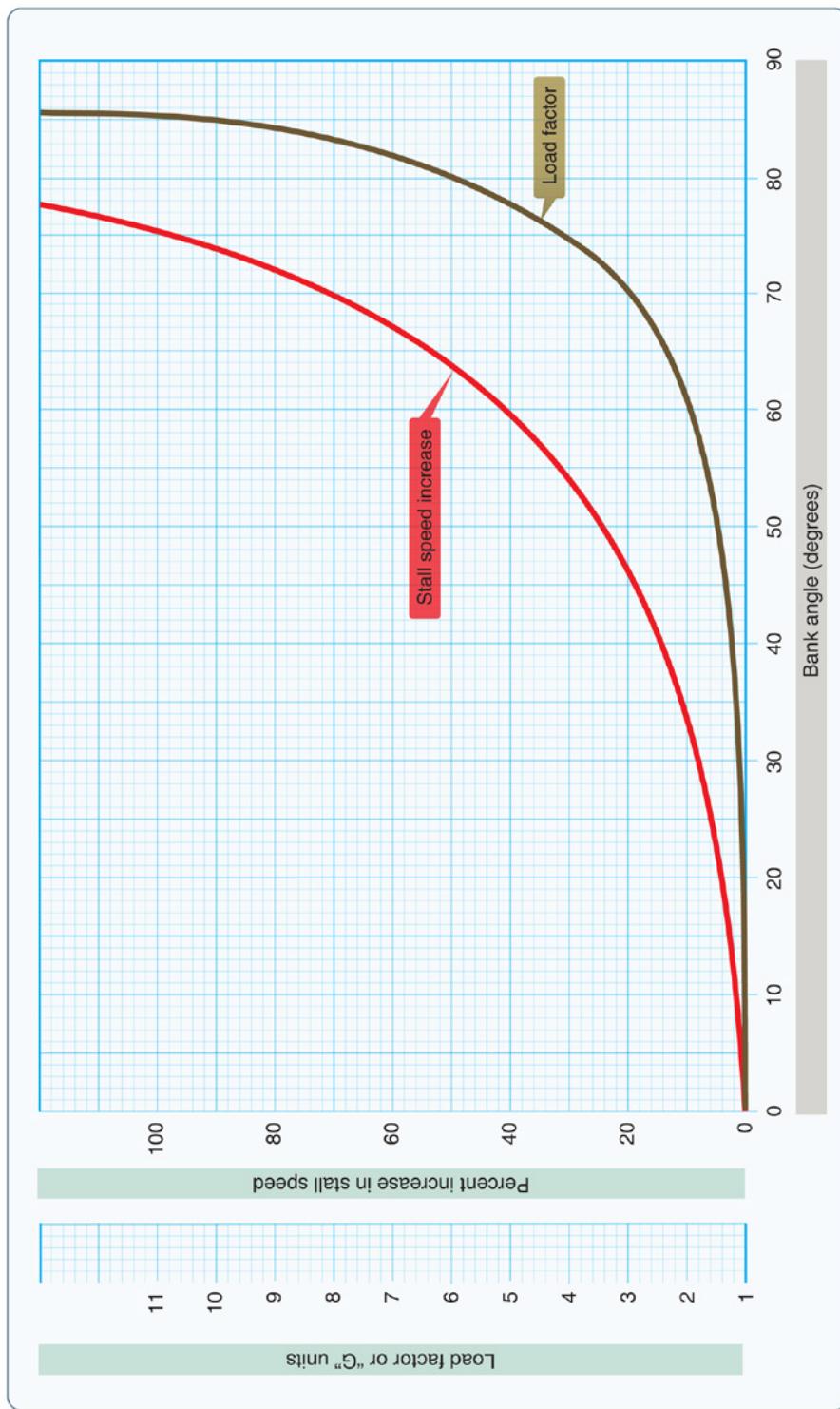
## Stage 3 Exam

TAF
KMEM 121720Z 121818 20012KT 5SM HZ BKN030 PROB40 2022 1SM TSRA OVC008CB FM2200 33015G20KT P6SM BKN015 OVC025 PROB40 2202 3SM SHRA FM0200 35012KT OVC008 PROB40 0205 2SM-RASN BECMG 0608 02008KT BKN012 BECMG 1012 00000KT 3SM BR SKC TEMPO 1214 1/2SM FG FM1600 VRB06KT P6SM SKC=
KOKC 051130Z 051212 14008KT 5SM BR BKN030 TEMPO 1316 1 1/2SM BR FM1600 18010KT P6SM SKC BECMG 2224 20013G20KT 4SM SHRA OVC020 PROB40 0006 2SM TSRA OVC008CB BECMG 0608 21015KT P6SM SCT040=

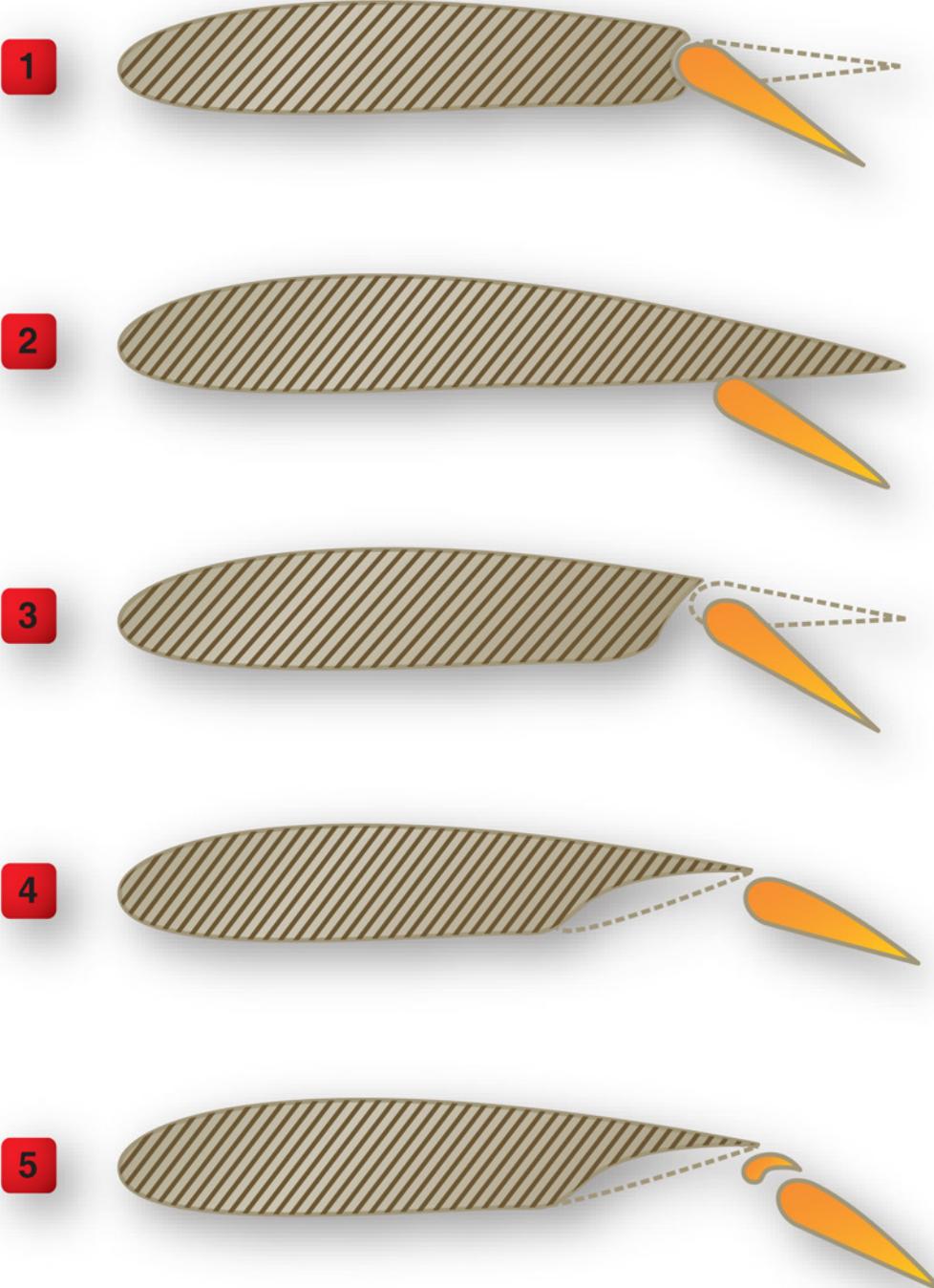
**FAA Figure 5** — for Stage 3, Question #6



FAA Figure 8 — for Stage 3, Question #7



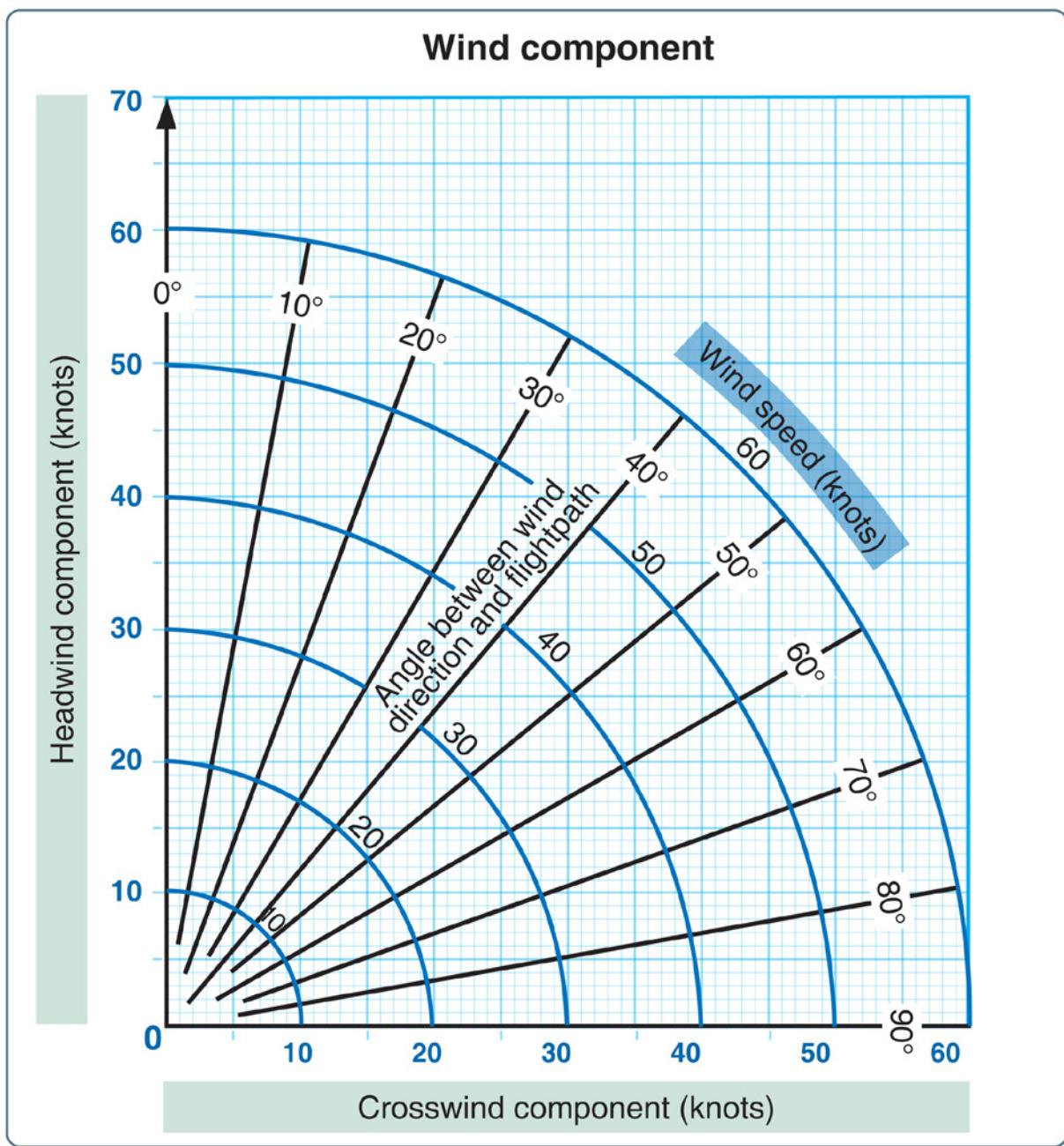
**FAA Figure 18** — for Stage 3, Question #21



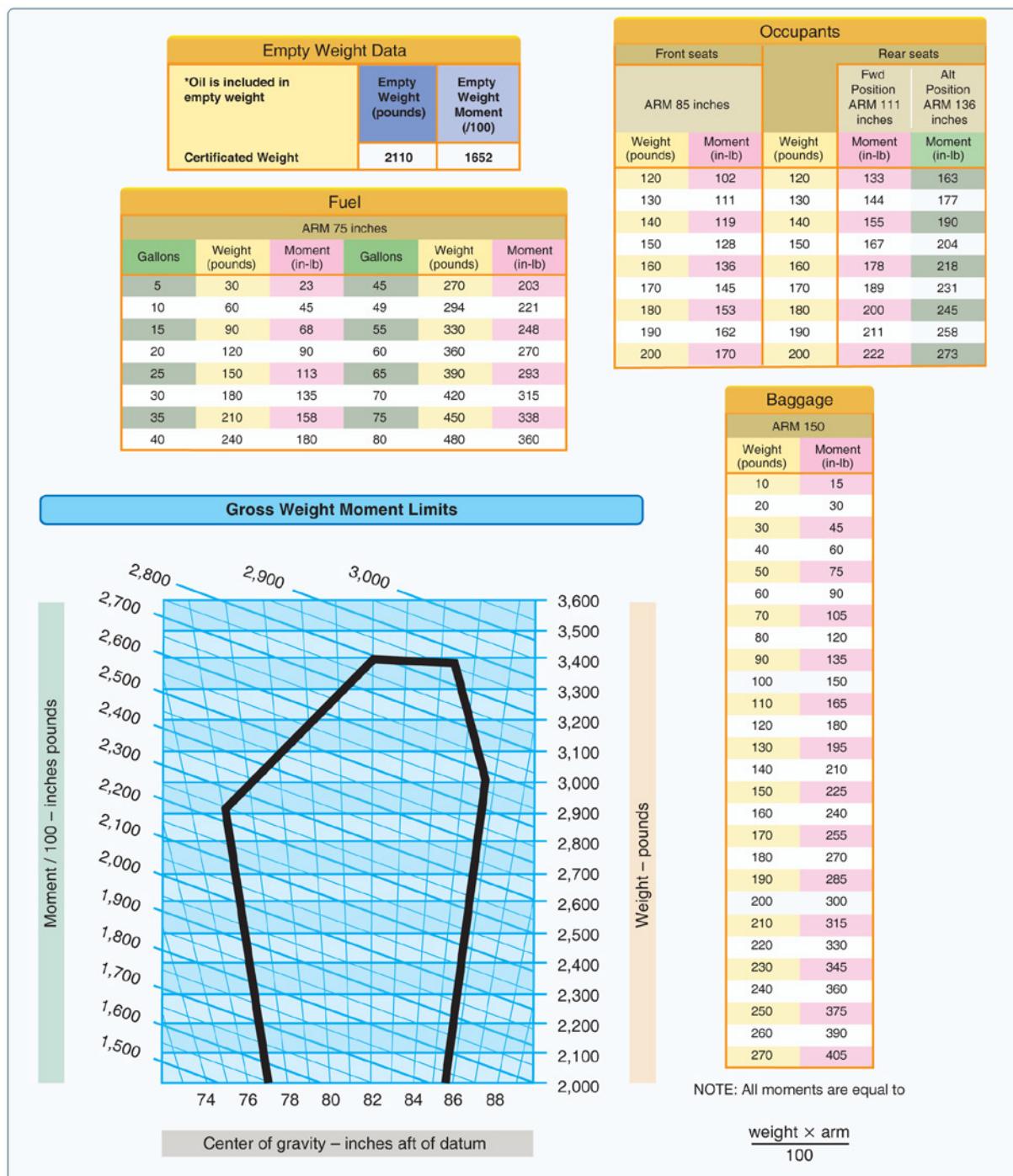
**FAA Figure 23 — for Stage 3, Question #25**

Short-field takeoff distance								
Weight LB	Takeoff to 50 foot obstacle speed KIAS	Pressure altitude feet	20 °C		30 °C		40 °C	
			Ground roll feet	Total distance to clear 50' OBS	Ground roll feet	Total distance to clear 50' OBS	Ground roll feet	Total distance to clear 50' OBS
5500	82	Sea level	1390	1760	1490	1890	1590	2020
		1,000	1530	1950	1640	2080	1760	2230
		2,000	1680	2150	1810	2300	1940	2470
		3,000	1860	2380	2000	2550	2150	2750
		4,000	2060	2650	2220	2850	2380	3070
		5,000	2280	2950	2460	3190	2640	3450
		6,000	2530	3310	2730	3590	2950	3900
		7,000	2830	3750	3160	4190	3410	4570
		8,000	3280	4420	3540	4840	3830	5330
		9,000	3690	5170	4000	5730	4330	6420
		10,000	4150	6140	4500	6980	4880	8130
5100	78	Sea level	1160	1470	1240	1570	1330	1680
		1,000	1280	1620	1370	1730	1470	1850
		2,000	1400	1780	1500	1910	1610	2040
		3,000	1550	1960	1660	2100	1780	2260
		4,000	1710	2180	1840	2340	1970	2510
		5,000	1890	2410	2030	2590	2180	2790
		6,000	2090	2690	2250	2890	2420	3120
		7,000	2330	3010	2510	3250	2700	3520
		8,000	2600	3400	2800	3690	3030	4010
		9,000	2920	3890	3270	4360	3530	4760
		10,000	3390	4580	3660	5030	3960	5560
4700	75	Sea level	960	1220	1020	1300	1090	1380
		1,000	1050	1340	1120	1430	1200	1520
		2,000	1150	1460	1230	1560	1320	1670
		3,000	1270	1610	1360	1720	1460	1840
		4,000	1400	1770	1500	1900	1610	2030
		5,000	1540	1960	1650	2100	1780	2250
		6,000	1700	2170	1830	2330	1970	2500
		7,000	1890	2410	2030	2590	2190	2790
		8,000	2100	2700	2260	2910	2440	3140
		9,000	2350	3040	2540	3290	2730	3570
		10,000	2620	3430	2830	3730	3060	4060

FAA Figure 28 — for Stage 3, Question #27



FAA Figure 30 — for Stage 3, Question #28



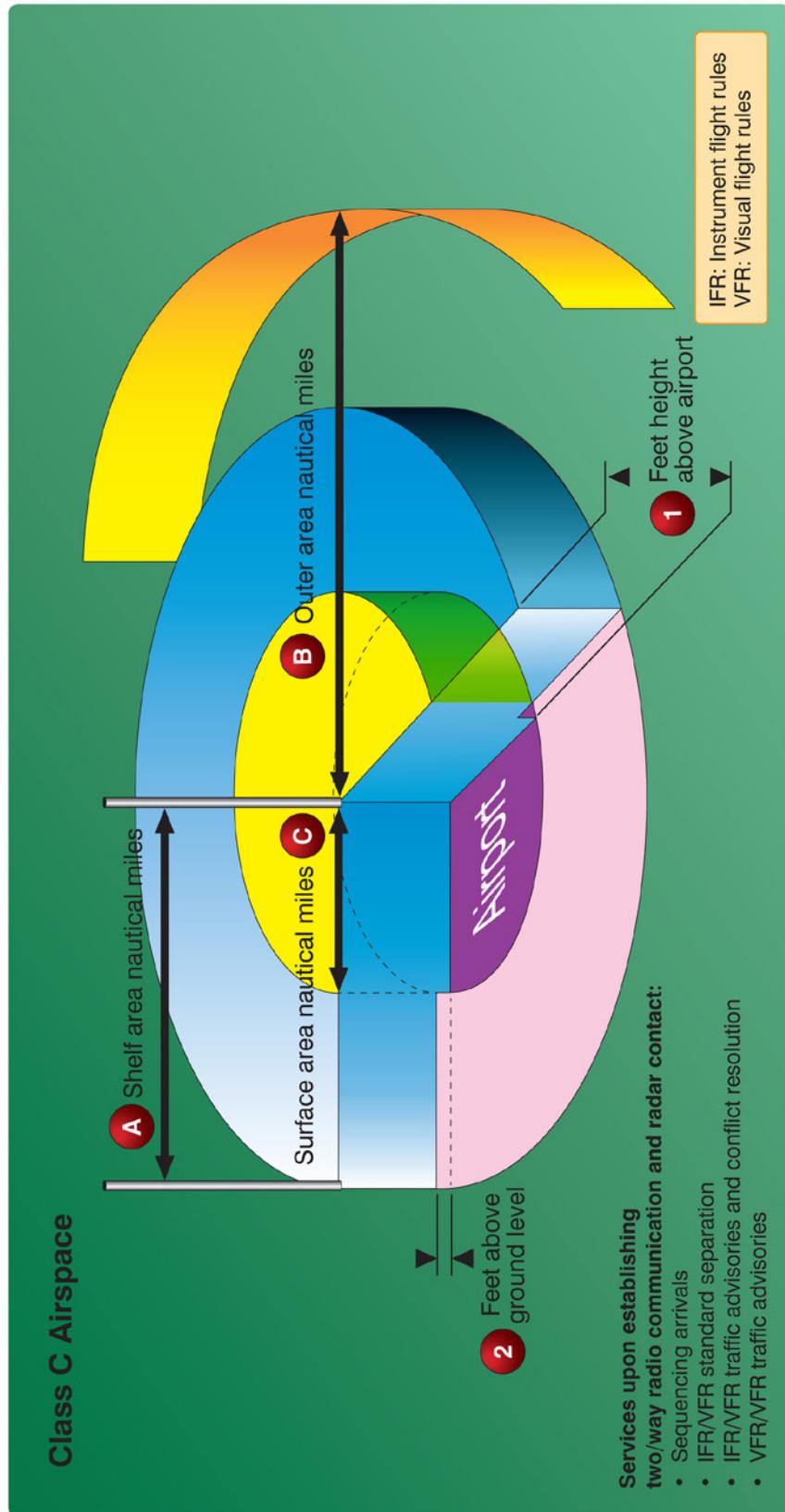
FAA Figure 36 — for Stage 3, Question #29



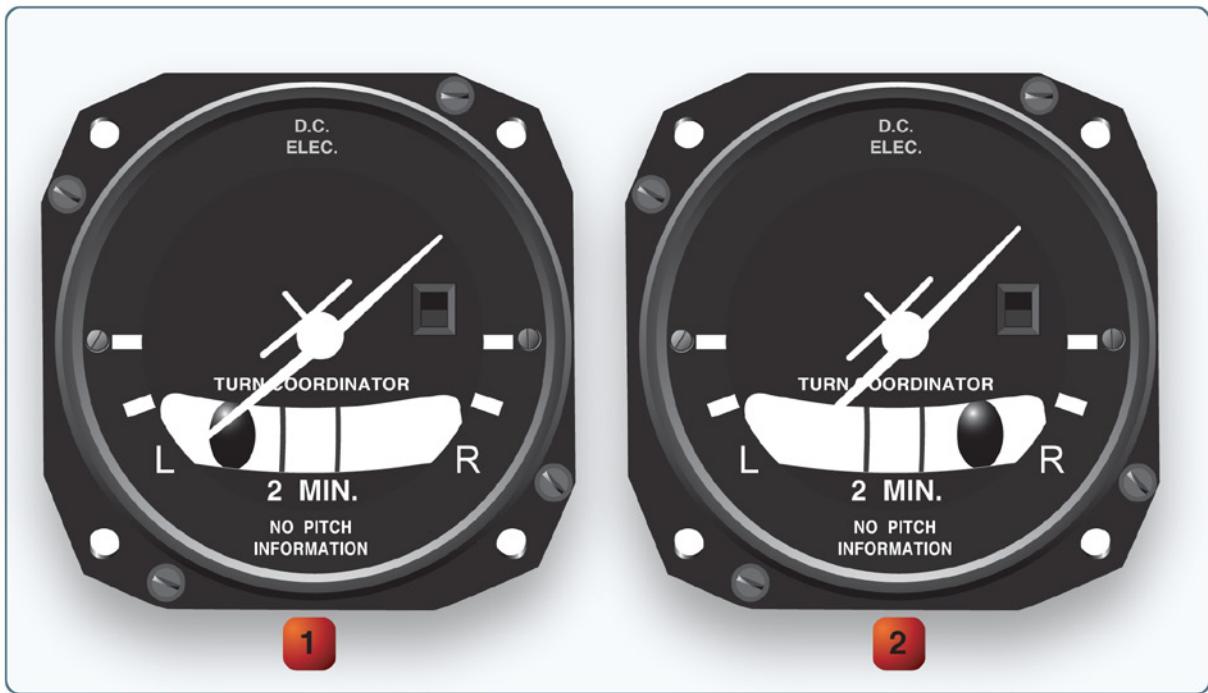
FAA Figure 44 — for Stage 3, Question #33



FAA Figure 45 — for Stage 3, Questions #34 and 35



FAA Figure 47 — for Stage 3, Question #36



**FAA Figure 52** — for Stage 3, Question #40