The Pilot's Manual

Private Pilot Syllabus

Seventh Edition

A Flight & Ground Training Course for
Private Pilot Airplane Certification
based on The Pilot's Manual *Ground School*

Meets Part 61 and 141 Requirements

by Jackie Spanitz

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Includes an Appendix providing Aviation Training Device (ATD) integration with your existing instructional methods

Aviation Supplies & Academics, Inc.
Newcastle, Washington

The Pilot's Manual: Private Pilot Syllabus
Seventh Edition

Aviation Supplies & Academics, Inc.
7005 132nd Place SE
Newcastle, Washington 98059-3153
(425) 235-1500
Internet: www.asa2fly.com
Email: asa@asa2fly.com

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

ASA-PM-S-P7-PD

Contents

About This Syllabus

Course Objective:

The objective of this syllabus is for the student to gain the necessary aeronautical skill, knowledge and experience to meet the requirements of a Private Pilot certificate with an Airplane Category rating and a Single-Engine Land class rating.

Prerequisites:

The student must be able to read, speak, and understand the English language, meet the physical standards for a third class medical certificate, and possess a valid student pilot certificate. Student must be 16 years old to solo, and 17 years old to gain certification.

Experience Requirements for a Private Pilot Certificate Include:

35 hours of flight time (40 hours for §61 programs)
35 hours of ground training (No minimum time is specified for §61 programs.)

Note: Ground training consists of classroom + preflight + postflight briefings.

Private Pilot Certification Course:

The Private License is made up of 2 requirements: Aeronautical Skill and Aeronautical Knowledge. This syllabus is written to satisfy 14 CFR §141 requirements. With the addition of 5 hours of flight, this syllabus will be equally effective for 14 CFR §61 programs. The syllabus is in four Stages, containing Modules. Each stage must be completed in _____ days, not to be more than 90 days. Each Module contains both a flight and ground lesson. This presents an integrated flight training process and will promote easier learning and a more efficient flight training program. Ideally, the ground lesson will be completed prior to the flight. Each flight lesson must include a pre- and post-flight briefing.

Testing Procedures:

Each module contains a reading assignment associated with the ground training program. The review questions following each chapter will test the student's understanding of the material covered throughout the ground lesson, and must be answered prior to moving on to the next module. A Stage Exam is included with each stage, testing the student on both the ground and flight training material covered throughout the stage. This exam must be passed with a minimum score of 80%, and reconciled to 100%, in order to proceed to the next Stage.

It is essential that the objective of each module be accomplished before moving on to the next module.

Minimum Requirements:

The time necessary for the syllabus to qualify for 141 operations includes meeting 35 hours of both ground and flight instruction (40 hours flight training for §61 programs). This is a *minimum* time — the national average for completion of the private certificate is 73 flight hours. Many factors play into the finishing flight time: frequency of flying, cooperative weather, airplane and instructor scheduling, and lapses in the flight training process. It is recommended the student fly at least twice a week. This type of schedule produces the most efficient training, and cuts down on review time. If there is a lapse in between flights, it may be necessary to review maneuvers; use the optional review flights accompanying each Stage for this purpose (this will allow the student to continue following the syllabus, which is necessary for a 141 program). The student should feel comfortable performing each task in all previous modules before progressing to the next stage. If student exceeds more than ____ hours of the minimum 141 recommended time allotted per module, the chief flight instructor must be informed.

Note to Instructors: Instructors are responsible for ensuring the completion standards have been. It may require multiple meetings and/or flights for the student to complete all tasks to the defined standards.

Instruction in a full flight simulator that meets the requirements of §141.41 (a) may be credited for a maximum of 20% of the total flight training hours requirements of the approved course, or of this sections, whichever is less. Instruction in a flight training device that meets the requirement for §141.41 (b) may be credited for a maximum of 15% of the total flight training hour requirement of the approved course, or of this sections, whichever is less. When a flight training device (FTD) is used, the ideal sequence is to learn in the flight training device (FTD) and practice in the airplane.

Required Materials for the Private Pilot Certification Course:

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

Recommended Materials for the Private Pilot Certification Course:

• The Pilot's Manual *Flight School* (#ASA-PM-1)
• FAA Private Pilot Airman Certification Standards (referred to as ACS) (#ASA-ACS-6)
• ASA *FAR/AIM* (#ASA-FR-AM-BK, updated annually)
• ASA *Private Pilot Test Prep* (#ASA-TP-P, updated annually)
• ASA logbook (student's choice)
• ASA flight computer (E6-B or CX-2 Pathfinder)
• ASA plotter (student's choice)
• ASA flight logs for cross-country flights (#ASA-FP)
• ASA *Private Oral Exam Guide* (#ASA-OEG-P)
• Sectional for local area
• Chart Supplement (previously Airport/Facility Directory or A/FD)

The syllabus uses "The Pilot's Manual" series *Ground School* textbook for the ground training program. The review following each chapter should be finished with the assigned reading. *Flight School*, also in "The Pilot's Manual" series, is recommended for use in enhancing the flight training program. Both books contain an index that will help pinpoint the material for the subject you are working on. ASA's *Private Pilot Test Prep* is also recommended to enhance the program. Use of the test prep will ensure the student is completely prepared for the FAA Knowledge Exam upon completion of the course. Instructors using this syllabus must ensure current FAA standards are upheld and that *Airplane Flying Handbook* (FAA-H-8083-3) procedures are maintained at all times.

If you have any questions on how to best use this syllabus, please call ASA directly at 1-800-ASA-2-FLY. We will be happy to provide suggestions on how to tailor this syllabus to specifically meet your training needs. *Note to Instructors:* Answers to the Stage Exams are available to instructors by calling 1-800-ASA-2-FLY, or fax your request on letterhead to 1-425-235-0128.

Visit **www.asa2fly.com/register** to stay informed of industry and regulatory changes that may affect your §141 curriculum.

Private Pilot Minimum Course Hours
For Part 141, Appendix B Compliance

These course hours are for student/instructor guidance only. They are a suggested time schedule which will ensure minimum flight and ground training compliance with 14 CFR §141.

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

Page		Dual Flight	Solo Flight	Dual Cross-Country	Solo Cross-Country	Dual Night	Solo Night	Instrument Instruction	** Ground Instruction
01	**Stage 1**								
03	Module 1	1.0							2.0
04	Module 2	1.0						.3	2.0
05	Module 3	1.0							1.5
06	Module 4	1.0						.3	1.5
07	Module 5	1.0 + Stage Check						.3	1.5 + Exam
08	** Review*	*1.0*							*1.5*
09	**Stage 2**								
11	Module 1	1.0						.3	2.0
12	Module 2	1.0							2.0
13	Module 3	1.0						.3	1.5
14	Module 4	1.0							1.5
15	** Review*	*1.0*							*1.5*
16	Module 5	.5	2.0						1.5 + Exam
18	Module 6	1.0 + Stage Check						.3	2.0
19	**Stage 3**								
21	Module 1	1.0	1.0					.3	1.5
23	Module 2		1.0*						1.5
24	Module 3	2.0		2.0				.3	2.0
25	** Review*	*1.5*		*1.5*					*1.0*
26	Module 4		2.0		2.0				1.0
27	Module 5	1.0 + Stage Check	6.0*		6.0*				1.5 + Exam
29	**Stage 4**								
31	Module 1	1.0						.3	1.5
32	Module 2	3.0		1.5		3.0		.3	2.0
33	Module 3		2.0*		2.0		2.0		1.5
34	Module 4		1.0*						1.5
35	** Review*	*1.0*							*1.5*
36	Module 5	1.5 + Stage Check						.3	2.0 + Exam
	TOTALS	20.0 + Stage Checks † 10 optional	5.0 † 10 optional	3.5	1 X/C more than 100 NM, 3 points	3.0	2.0	3.3	35.0 + Exams

** Reviews are not necessary to meet §141 compliance, and are not counted in the TOTALS for the program. They are optional, and should be used if the student is not ready to move on to the next module.*

*** Ground instruction consists of classroom + preflight + postflight briefings.*

† 14 CFR §141 requires 20 hours of dual flight, 5 hours of solo flight, and a total of 35 hours of flight time for the Private Pilot Certificate. Those flights tagged with an asterisk (*) indicate the flights which may be conducted either dual or solo, at the instructor's discretion.

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

Part 141 Appendix B — Ground Training		Covered in Syllabus
1	Applicable Federal Aviation Regulations for private pilot privileges, limitations, and flight operations	Stage 1 Modules 4, 5
2	Accident reporting requirements of the National Transportation Safety Board	Stage 1 Module 5
3	Applicable subjects of the Aeronautical Information Manual and the appropriate FAA advisory circulars	Stage 1 Module 4
4	Aeronautical charts for VFR navigation using pilotage, dead reckoning, and navigation systems	Stage 2 Module 3, 5 Stage 3 Module 3, 4, 5
5	Radio communication procedures	Stage 2 Module 4
6	Recognition of critical weather situations from the ground and in flight, windshear avoidance, and the procurement and use of aeronautical weather reports and forecasts	Stage 2 Module 2 Stage 3 Module 2 Stage 4 Module 2, 3
7	Safe and efficient operation of aircraft, including collision avoidance, and recognition and avoidance of wake turbulence	Stage 1 Module 3, 4 Stage 2 Module 1 Stage 3 Module 1
8	Effects of density altitude on takeoff and climb performance	Stage 2 Module 1 Stage 3 Module 1
9	Weight and balance computations	Stage 2 Module 6 Stage 3 Module 2
10	Principles of aerodynamics, powerplants, and aircraft systems	Stage 1 Module 2, 4
11	Stall awareness, spin entry, spins, and spin recovery techniques	Stage 1 Module 4
12	Aeronautical decision making and judgment	Stage 1 Module 5 Stage 2 Module 2
13	Preflight actions that include (1) how to obtain information on runway lengths at airports of intended use, data on takeoff and landing distances, weather reports and forecasts, and fuel requirements; and (2) how to plan for alternatives if the planned flight cannot be completed or delays are encountered	Stage 3 Module 2

Part 141 Appendix B – Flight Training	Covered in Syllabus
35 hours of flight training	Stages 1-4, all modules
20 hours of dual instruction	Stage 1 Modules 1-5 Stage 2 Modules 1-6 Stage 3 Module 1, 3, 5 Stage 4 Modules 1, 2, 5
↳ 3 hours cross-country flight training	Stage 3, Module 3 Stage 4, Module 2
↳ 1 cross-country flight more than 100 NM total distance	Stage 4, Module 2
↳ 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport	Stage 3, Module 3 Stage 4, Module 2
↳ 3 hours of flight training in preparation for the practical test within 60 days preceding the date of the test	Stage 4, Module 2 Stage 4, Module 5

Enrollment Certificate

This is to certify that

_____

Student Name

is enrolled in the Federal Aviation Administration approved **Private Pilot 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 **Private Pilot Certification Course** conducted by

_____

School and Certificate Number

_____ _____

Chief Instructor *Date of Graduation*

Stage 1
Introduction to Flying

Objective
The objective of Stage 1 is for the student to become proficient in, and have an understanding of the following:

Ground Training
- Course objective
- School requirements, procedures, regulations
- Grading criteria
- Forces acting on an airplane
- Stability and control
- Training airplane (airframe, engine, systems, flight instruments)
- Basic flight maneuvers
- Flight information
- Flight physiology
- Regulations

Flight Training
- Flight training process
- Training airplane
- Preflight
- Taxiing
- Four basics of flight (straight and level, turns, climbs, descents)
- Use of sectional
- Collision avoidance
- Slow Flight
- Stall series
- Steep Turns
- Instrument scan

Completion Standards
Stage 1 is complete when the student achieves the objective of each lesson, and can list or describe the correct process or reference for accomplishing elements, exercises and activities. Student shall score at least 80% on the Stage 1 Exam, and all deficient areas shall be reconciled to 100%. Student shall have third-class medical and student pilot certificate upon completion of this stage.

Stage 1 / **Module 1**

Minimum 141 Requirements: Dual
1.0 hour flight
2.0 hours ground instruction

Ground Training

Objective:
For the student to be introduced to the Private Pilot Certification program, and learn the flight school requirements, procedures, regulations, and grading criteria. Student shall also become familiar with stability, control, and the forces acting on an airplane.

Content:

____ Review of course and objectives
____ School requirements, procedures, regulations
____ Grading criteria, expectations of student
____ Review objective of Stage 1

The forces acting on an airplane

____ Weight
____ Lift
- ____ streamline/turbulent flow
- ____ Bernoulli's Principle
- ____ dynamic/static pressure
- ____ airspeed
- ____ airfoil shape
- ____ aerodynamic force
- ____ pressure distribution and CP movement

____ Drag
- ____ total drag
- ____ parasite drag
- ____ skin-friction drag
- ____ form drag
- ____ interference drag
- ____ induced drag
- ____ angle-of-attack
- ____ wing design
- ____ lift/drag ratio
- ____ wing flaps
- ____ leading-edge devices
- ____ spoilers

____ Thrust
- ____ propeller motion
- ____ forces on a propeller blade
- ____ propeller efficiency
- ____ controllable-pitch propellers
- ____ takeoff effects of propellers
- ____ propeller torque effect
- ____ gyroscopic effect
- ____ P-factor

Stability and control

____ Stability
- ____ static/dynamic stability
- ____ stability vs. maneuverability
- ____ airplane equilibrium
- ____ pitching moments
- ____ longitudinal/directional/lateral stability

____ Control
- ____ elevator
- ____ ailerons
- ____ rudder
- ____ control effectiveness

Completion Standards:
This lesson is complete when the student has successfully completed all review questions following the assigned reading.

Assignment:
Ground School, Chapters 1 and 2

Flight Training

Objective:
For the student to be introduced to and become familiarized with preflight inspections, checklist operations, starting and taxi procedures, and the function and use of the airplane controls.

Content:

____ Preflight inspection and aircraft documents (certificates and documents, aircraft logbooks, airplane servicing)
____ Starting procedures
____ Taxi
____ Control effects on ground and in flight
____ Checklist introduction and use
____ Normal takeoff
____ Four Basics: straight and level, climbs, descents, turns
____ Collision avoidance procedures
____ Normal approach and landing
____ Postflight procedures

Completion Standards:
This lesson is complete when the student can conduct the preflight with minimum assistance, properly use all checklists, start the airplane, taxi, and operate the controls.

Recommended Reading:
Flight School

Stage 1 / **Module 1**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage 1 / **Module 2**

Minimum 141 Requirements: Dual
1.0 hour flight,
0.3 instrument work
2.0 hours ground instruction

Ground Training

Objective:
For the student to have an understanding of the airplane's airframe, engine, and system.

Content:
Airframe
____ Fuselage
____ Wings
____ Empennage
____ Flight controls
____ Landing gear
____ Engine and propeller
Engine
____ Description and principles
____ Four-stroke engine cycle
____ Ignition
____ Starter
____ Exhaust system
____ Carburetor
____ Accelerator pump
____ Idling system
____ Fuel/air mixture control
____ Abnormal combustion
    ____ detonation
    ____ preignition
____ Carburetor ice
    ____ impact ice
    ____ fuel ice
    ____ throttle ice
____ Carburetor heat
____ Fuel injection systems
Systems
____ Fuel system
____ Oil system
____ Cooling system
____ Electrical system
____ Vacuum system

Completion Standards:
This lesson is complete when the student has successfully completed all review questions following the assigned reading.

Assignment:
Ground School, Chapters 4, 5, and 6

Flight Training

Objective:
For the student to become proficient with the four basics of flight: straight and level, climbs, turns, and descents; and collision avoidance procedures.

Content:
____ Preflight
____ Radio communications
____ Normal takeoff and climbout
____ Collision avoidance procedures
____ Climbs
____ Straight and level
____ Turns: 90, 180, 360 degrees, and turns to headings
____ Descents: with and without power and flaps
____ Scanning procedures
____ Normal approach and landing
____ Postflight procedures

Completion Standards:
This lesson is complete when the student has an understanding of the four basics of flight, and can maintain altitude within 200 feet, airspeed within 20 knots, and heading within 20 degrees, while performing the maneuvers listed in the content of this module.

Recommended Reading:
Flight School

Stage 1 / **Module 2**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage 1 / **Module 3**

Minimum 141 Requirements: Dual
1.0 hour flight
1.5 hours ground instruction

Ground Training

Objective:
For the student to understand how to properly operate the engine, and have an understanding of the flight instruments.

Content:
Engine operation
____ Starting the engine
____ Stopping the engine
____ Changing power setting with a constant-speed propeller
____ Engine handling
____ Rough running
____ Cross-checking engine instruments
____ Taxiing
____ Engine failure in flight
____ Engine fire in flight
____ Engine fire on startup
Flight instruments
____ Pressure Instruments
    ____ static pressure
    ____ dynamic pressure
    ____ total pressure
    ____ pitot-static system
    ____ airspeed indicator
    ____ altimeter
    ____ vertical speed indicator
____ Gyroscopic Instruments
    ____ turn coordinator/turn indicator
    ____ attitude indicator
    ____ heading indicator
____ Magnetic compass

Completion Standards:
This lesson is complete when the student has successfully completed all review questions following the assigned reading.

Assignment:
Ground School, Chapters 6 and 7

Flight Training

Objective:
For the student to become proficient in postflight and trimming procedures. The student will also be introduced to Slow Flight and become oriented with the practice area.

Content:
____ Preflight
____ Use of sectional
____ Radio communications
____ Normal takeoff and departure
____ Review of four basics
____ Trimming
____ Outline of practice area and reference to airport
____ Slow Flight
____ Collision avoidance
____ Normal approach and landing
____ Postflight procedures

Completion Standards:
This lesson is complete when the student can maintain flight within 200 feet altitude, 20 degrees heading, and 20 knots airspeed, while performing the maneuvers listed in the content of this module. Also the student must be proficient in the art of trimming, postflight operations, be oriented to the practice area and airport, and be familiarized with Slow Flight.

Recommended Reading:
Flight School

Stage 1 / **Module 3**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage 1 / **Module 4**

Minimum 141 Requirements: Dual
1.0 hour flight,
0.3 instrument work
1.5 hours ground instruction

Ground Training

Objective:
For the student to gain knowledge of the basic flight maneuvers required for the private pilot certificate, and the tools available for obtaining flight information.

Content:
Basic flight maneuvers

- ____ Straight-and-level
- ____ Climbing and descending
  - ____ climbs
  - ____ descent
- ____ Turning and load factor
- ____ Forces in a turn
  - ____ thrust in a turn
  - ____ steep turns
  - ____ stalling in a turn
- ____ Stalling
  - ____ awareness of the stall
  - ____ recovery from the stall
  - ____ factors affecting stall speed
  - ____ stall warning devices
  - ____ wing design and the stall
- ____ Spinning
  - ____ spin entry
  - ____ spins
  - ____ spin recovery

Flight information

- ____ NOTAMs
- ____ Chart Supplement U.S.
- ____ Aeronautical Information Manual
- ____ Federal Aviation Regulations
- ____ Pilot/Controller Glossary
- ____ Advisory Circulars

Completion Standards:
This lesson is complete when the student has successfully completed all review questions following the assigned reading.

Assignment:
Ground School, Chapter 3

Flight Training

Objective:
For the student to become proficient in the use of sectionals, and to be introduced to Power-on Stalls, Power-off Stalls, and Steep Turns.

Content:

- ____ Preflight
- ____ Radio communications
- ____ Normal takeoff and landing
- ____ Use of sectional
- ____ Collision avoidance procedures
- ____ Four basics
- ____ Steep Turns
- ____ Slow Flight
- ____ Power-on Stalls
- ____ Power-off Stalls
- ____ Normal approach and landing
- ____ Postflight procedures

Completion Standards:
This module is complete when the student can maintain flight within 200 feet altitude, 20 degrees heading, 20 knots airspeed, while performing the maneuvers listed in the content of this module. The student must also be able to orient himself/herself with use of the sectional, and be introduced to Power-on and Power-off Stalls, and Steep Turns.

Recommended Reading:
Flight School

Stage 1 / **Module 4**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage 1 / **Module 5 and Stage Check**

Ground Training

Objective:

For the student to understand the factors which affect the physiology of flight, and to become familiar with the regulations which govern the student and private pilot, and general aviation flight.

Content:

Flight physiology

____ Am I Fit to Fly?
- ____ physical fitness
- ____ mental fitness
- ____ medical checks
- ____ medication
- ____ upper respiratory tract problems
- ____ corrective lenses
- ____ food poisoning
- ____ alcohol
- ____ smoking
- ____ fatigue and sleep deprivation
- ____ blood donation

____ Low Temperatures

____ Respiration
- ____ increased altitude
- ____ hypoxia
- ____ carbon monoxide poisoning
- ____ hyperventilation
- ____ decompression sickness

____ Balance
- ____ sensing acceleration
- ____ inner ear balance mechanism
- ____ motion sickness
- ____ vertigo
- ____ spatial disorientation
- ____ sensory illusions

____ Vision
- ____ structure of the eye
- ____ adaptation of eyes to darkness
- ____ scanning for aircraft
- ____ visual illusions on approach

____ Aeronautical decision making and judgment

____ Discuss and obtain medical and student pilot certificate

____ 14 CFR §1

____ 14 CFR §61

____ 14 CFR §91

____ NTSB 830

Completion Standards:

This lesson is complete when the student has successfully completed all review questions following the assigned reading. Stage 1 Exam must be passed with a minimum score of 80%, and reconciled to 100%.

Assignment:

Ground School, Chapters 12 and 19
Stage 1 Exam

Minimum 141 Requirements: Dual
1.0 hour flight,
0.3 instrument work
Stage check
1.5 hours ground instruction
Stage exam

Flight Training

Objective:

For the student to be introduced to the instrument scan, and gain proficiency in Steep Turns, Slow Flight, and stalls. Student should have medical certificate or self-certification equivalent at the completion of this stage. For the Stage Check, student should demonstrate skill in the following areas according to the completion standards.

Content:

____ Verify medical and student pilot certificate

____ Preflight

____ Radio communications

____ Normal takeoff and departure

____ Four basics

____ Steep Turns

____ Slow Flight

____ Power on/off Stalls

____ Spin awareness

____ Use of instrument scan

____ Collision avoidance

____ Use of sectional

____ Normal approach and landing

____ Postflight procedures

Completion Standards:

The student should be able to maintain flight within 150 feet altitude, 15 degrees of heading, and 15 knots of airspeed, while performing the maneuvers listed in the content of this module. The student should be capable of demonstrating preflight, use of checklists, taxiing, the four basics, trimming, Slow Flight, Power on/off Stalls, Steep Turns, scanning, collision avoidance, and use of sectional with minimum assistance by the flight instructor.

Recommended Reading:

Flight School
Private Pilot Test Prep, Chapters 1, 2, and 3

Stage 1 / **Module 5**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage Exam Score:_____

Stage Check Successful:_____

Optional **Stage 1 Review**

Lesson Time: Dual 1.0 hour flight, or whatever is necessary to meet objective
1.5 hours ground instruction, or whatever is necessary to meet objective

Flight Training

Objective:
For the student to review all Stage 1 tasks and meet all objectives.

Content:
____ Preflight
____ Taxi
____ Checklist use
____ Radio communications
____ Normal takeoff and departure
____ Four basics
____ Steep Turns
____ Slow Flight
____ Power on/off Stalls
____ Use of instrument scan
____ Collision avoidance
____ Use of sectional
____ Normal approach and landing
____ Postflight procedures

Completion Standards:
The student should be able to maintain flight within 150 feet altitude, 15 degrees of heading, and 15 knots of airspeed, while performing the maneuvers listed in the content of this module. The student should have a practical understanding of preflight, checklists, taxiing, the four basics, trimming, Slow Flight, Power on/off Stalls, Steep Turns, scanning, collision avoidance, and use of sectional.

Recommended Reading:
Flight School

Optional **Stage 1 Review**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage 2
Solo

Objective
The objective of Stage 2 is for the student to become proficient in, and to have an understanding of the following:

Ground Training
- Airplane performance factors
- Operational weather concerns
- Obtaining a weather briefing
- Making the go-no go decision
- Charts and airspace
- Airports and airport operations
- Visual navigation fundamentals
- Using the flight computer
- Weight and balance

Flight Training
- Pre-solo maneuvers (per 14 CFR § 61.87)
- Traffic pattern operations
- Emergency situations
- Normal and crosswind takeoffs and landings
- Solo flight

Completion Standards
Stage 2 is complete when the student achieves the objective of each lesson, and can list or describe the correct process or reference for accomplishing elements, exercises and activities. Student shall score at least 80% on the Stage 2 Pre-Solo Written Exam, and all deficient areas shall be reconciled to 100%.

Stage 2 / **Module 1**

Minimum 141 Requirements: Dual
1.0 hour flight,
0.3 instrument work
2.0 hours ground instruction

Ground Training

Objective:
For the student to have an understanding of the factors which affect airplane performance, and a working knowledge of ground reference maneuvers.

Content:
____ Review objective of Stage 2
Airplane performance factors
- ____ Airworthiness
  - ____ registration certificate
  - ____ airworthiness certificate
  - ____ approved flight manual
  - ____ maintenance
- ____ Airframe Limitations
  - ____ weight limitations
  - ____ speed limitations
  - ____ flying in turbulence
  - ____ load factor limitations
  - ____ velocity/load factor or V-G diagram
- ____ Air Density
  - ____ factors affecting air density
  - ____ standard atmosphere
  - ____ pressure altitude
  - ____ temperature
  - ____ density altitude
  - ____ indicated airspeed and performance
- ____ Wind Drift

Ground Reference Maneuvers
- ____ Site selection
- ____ Wind direction and speed
- ____ Entry track
- ____ Altitude
- ____ Aircraft speed
- ____ Emergency operations

Completion Standards:
This lesson is complete when the student has successfully completed all review questions following the assigned reading.

Assignment:
Ground School, Chapter 8

Flight Training

Objective:
For the student to be introduced to cockpit management, ATC light signals, Rectangular Course, and to become proficient with radio communications.

Content:
____ Preflight
____ Discussion of cockpit management and ATC light signals
____ Radio work
____ Normal takeoff and departure
____ Review of four basics (pitch + power = performance)
____ Steep Turns
____ Slow Flight
____ Power on/off Stalls
____ Rectangular Course
____ Normal approach and landing
____ Postflight procedures

Completion Standards:
This module is complete when the student can maintain flight within 150 feet, 15 degrees, and 15 knots, while performing the maneuvers listed in the content of this module. The student must also be capable of maintaining the radio, and be knowledgeable in ATC light signals and cockpit management.

Recommended Reading:
Flight School

Stage 2 / **Module 1**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage 2 / **Module 2**

Minimum 141 Requirements: Dual
1.0 hour flight
2.0 hours ground instruction

Ground Training

Objective:
For the student to have an understanding of the operational weather factors, and a practical understanding of obtaining a weather briefing, and making the go-no go decision.

Content:
Operational weather factors

____ Icing
- ____ Structural icing
- ____ Clear ice
- ____ Rime ice
- ____ Mixed ice
- ____ Frost
- ____ Structural icing and cloud type
- ____ Induction icing
  - ____ carburetor icing
  - ____ engine intake icing
- ____ Instrument icing

____ Cold weather operations

____ Visibility
- ____ Particles in the air
- ____ Inversions and reduced visibility
- ____ Condensation
- ____ Fog
  - ____ radiation fog
  - ____ advection fog
  - ____ upslope fog
  - ____ frontal fog
  - ____ steam fog

____ Turbulence
- ____ Clear air turbulence
- ____ Classification of turbulence

____ Windshear

____ Thunderstorms

____ Microbursts

____ Obtaining a weather briefing

____ Making the go-no go decision

Completion Standards:
This lesson is complete when the student has successfully completed all review questions following the assigned reading.

Assignment:
Ground School, Chapter 17 and Chapter 18: "Obtaining a Weather Briefing" (only)

Flight Training

Objective:
For the student to become proficient with traffic pattern operations, and be introduced to S-turns, Turns Around a Point, and wake turbulence avoidance.

Content:

____ Preflight
____ Obtain weather
____ Go-no go decision
____ Wake turbulence avoidance
____ Normal/crosswind takeoff and departure
____ Slow Flight
____ Power on/off Stalls
____ Steep Turns
____ Rectangular Course
____ S-turns
____ Turns Around a Point
____ Pattern work
____ Normal/crosswind approach and landing
____ Postflight procedures

Completion Standards:
This module is complete when the student can maintain flight within 150 feet, 15 degrees, 15 knots, while performing the maneuvers listed in the content of this module. Student must also be able to enter and depart a normal traffic pattern, perform wake turbulence avoidance, S-turns, and Turns Around a Point.

Recommended Reading:
Flight School

Stage 2 / **Module 2**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage 2 / **Module 3**

Minimum 141 Requirements: Dual
1.0 hour flight,
0.3 instrument work
1.5 hours ground instruction

Ground Training

Objective:
For the student to have an understanding of aviation charts and the airspace system, and a practical understanding of no-flap landings, slips, aborted takeoffs, and rejected landings (go-arounds).

Content:
Charts
____ Sectional charts
____ VFR Terminal Area charts
Airspace
____ Class A
____ Class B
____ Class C
____ Class D
____ Class E
____ Class G
____ Temporary Flight Restrictions (TFRs)
____ Special use airspace
____ Other airspace
Special Takeoffs and Landings
____ No-flap landing
____ Slips
____ Aborted takeoff
____ Rejected landing (go-around)

Completion Standards:
This lesson is complete when the student has successfully completed all review questions following the assigned reading.

Assignment:
Ground School, Chapters 20 and 21

Flight Training

Objective:
For the student to become proficient with normal and crosswind takeoffs and landings, and be introduced to go-around and aborted takeoff procedures, and no flap or slips to landings.

Content:
____ Preflight
____ Obtain weather, go-no go decision
Pattern work
____ Normal and crosswind takeoffs
____ Normal and crosswind landings
____ Emergency approaches
____ No flap landing
____ Aborted takeoff (warn tower before starting)
____ Slips to landing
____ Go-around procedures
____ Postflight procedures

Completion Standards:
This module is complete when the student can operate proficiently in traffic patterns and can takeoff and land being the sole manipulator of the controls.

Recommended Reading:
Flight School

Stage 2 / **Module 3**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage 2 / **Module 4**

Minimum 141 Requirements: Dual
1.0 hour flight
1.5 hours ground instruction

Ground Training

Objective:
For the student to become familiar with airports and airport operations.

Content:
Airports
____ Taxiway and runway markings and signs
____ Airport lighting
Airport operations
____ ATIS
____ Taxiing
____ Standard traffic pattern
____ Legs of a traffic pattern
____ Wind effect in the traffic pattern
____ Departing the traffic pattern
____ Radio communications
____ Entering the traffic pattern
____ Airport Radar Services
    ____ TRSA radar service
    ____ basic radar service
    ____ traffic sequencing for pilots
    ____ full radar services

Completion Standards:
This lesson is complete when the student has successfully completed all review questions following the assigned reading.

Assignment:
Ground School, Chapter 22

Flight Training

Objective:
For the student to become proficient in emergency situations, including system and equipment malfunctions, forward slips to landing, aborted takeoffs, and go-arounds.

Content:
____ Preflight
____ Discussion of pre-solo requirements (14 CFR § 61.87)
____ Discussion of emergency equipment and survival gear
____ Slow Flight
____ Takeoff and departure stalls
____ Approach to landing stalls
____ Rectangular Course
____ Turns Around a Point
____ S-turns
____ Cruise emergency situations (system and equipment malfunction)
____ Normal and crosswind takeoffs
____ Normal and crosswind landings
____ Slip to a landing
____ Aborted takeoff (warn tower before starting)
____ Go-arounds
____ Forced landings from practice area and pattern
____ Postflight procedures

Completion Standards:
This module is complete when the student can operate in emergency situations in all phases of flight: cruise, takeoff, and landing. Emergencies include: equipment and system malfunctions, conditions forcing an aborted takeoff, and forced landings. Flight in all phases must be within 100 feet, 10 degrees, 10 knots, and coordination must be maintained at all times.

Recommended Reading:
Flight School

Stage 2 / **Module 4**

Date of Completion:_____

Signature:_____

Time Flown:_____

Optional **Stage 2 Review**

Lesson Time: Dual 1.0 hour flight, or whatever is necessary to meet objective
1.5 hours ground instruction, or whatever is necessary to meet objective

Flight Training

Objective:
For the student to gain proficiency in all pre-solo maneuvers. Upon completion of this flight, student will be ready to be signed off for solo operations.

Content:
____ Discussion of pre-solo requirements
____ Normal/crosswind takeoff and landing
____ Pre-solo maneuvers (per 14 CFR § 61.87)
____ Emergency situations
____ Student is sole manipulator of controls for entire flight

Completion Standards:
This module is complete when the student is comfortable with all of the pre-solo maneuvers and can conduct all with minimum assistance from the flight instructor. Flight must be maintained within 100 feet, 10 degrees, 10 knots, and coordination must be maintained.

Recommended Reading:
Flight School

Assignment:
Stage 2 Pre-Solo Written Exam

Optional **Stage 2 Review**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage 2 / **Module 5**

Minimum 141 Requirements: Dual 0.5 hour flight
Solo 2.0 hours flight
1.5 hours ground instruction
Stage exam (pre-solo written)

Ground Training

Objective:

For the student to become proficient in the fundamentals of visual navigation. Student must also have an understanding of the pre-solo requirements, and demonstrate that knowledge through a pre-solo written exam.

Content:

Visual navigation fundamentals

____ Pilotage
____ Dead reckoning
____ Navigation
____ Course
____ Heading
____ True airspeed
____ Wind velocity/direction
____ Ground track/Ground speed
____ Drift/Wind correction angle
____ Tracking error
____ Latitude/Longitude
____ Nautical mile
____ Knot
____ Altitude/Flight level
____ VFR cruise altitude
____ Minimum safe altitude
____ Standard/Local time
____ UTC/Zulu time
____ Daylight time
____ Dateline

Completion Standards:

This lesson is complete when the student has successfully completed all review questions following the assigned reading. Stage 2 Exam must be passed with a minimum score of 80%, and reconciled to 100%.

Assignment:

Ground School, Chapter 23
Ensure Stage 2 Pre-Solo Written Exam is completed and graded.

Flight Training

Objective:

For the student to be signed off for solo work. The suggestion is to conduct this module in three flights: (A) dual flight, (B) supervised solo, and (C) solo session.

Content:

Flight A (Dual)

____ Preflight
____ Review of pre-solo maneuvers
____ Normal/crosswind takeoff and landing
____ Emergency situations
____ Student is sole manipulator of controls for entire flight
____ Postflight

Flight B (Supervised Solo)

Pattern work

____ Instructor endorsement
____ Preflight
____ 10 takeoffs and landings
____ Radio work
____ Slips to landing
____ Emergency go-arounds
____ Postflight

Flight C (Solo)

____ Preflight
____ Normal/crosswind takeoffs and landings (3)
____ Slow Flight
____ Power on/off Stalls
____ Steep Turns
____ Rectangular Course
____ S-turns
____ Turns Around a Point
____ Pilotage/dead reckoning back to airport
____ Postflight

Completion Standards:

This module is complete when the student is signed off for solo work, and the student has conducted two solo flights — one flight strictly in the pattern, perfecting takeoffs and landings, and one practicing all the private maneuvers. Flight must be maintained within 100 feet, 10 degrees, 10 knots, and coordination maintained, while performing the maneuvers listed in the content of this module.

Recommended Reading:

Flight School

Stage 2 / **Module 5**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage Exam Score:_____

Instructor Note: Follow the formats below when signing-off endorsements for your students. (From AC 61-65)

1. Endorsement for pre-solo aeronautical knowledge: 14 CFR §61.87(b)

I certify that _____ *(First name, MI, Last name)* has satisfactorily completed the pre-solo knowledge exam of §61.87(b) for the _____ *(make and model aircraft)*.

[date] J. Jones 654321 CFI [expiration date]

2. Endorsement for pre-solo flight training: 14 CFR §61.87(c)

I certify that _____ *(First name, MI, Last name)* has received the required pre-solo training in a _____ *(make and model aircraft)*. I have determined he/she has demonstrated the proficiency of §61.87(d) and is proficient to make solo flights in _____ *(make and model aircraft)*.

[date] J. Jones 654321 CFI [expiration date]

3. Endorsement for solo flight (first 90-day period): 14 CFR §61.87(n)

I certify that _____ *(First name, MI, Last name)* has received the required training to qualify for solo flying. I have determined he/she meets the applicable requirements of §61.87(n) and is proficient to make solo flights in _____ *(make and model aircraft)*.

[date] J. Jones 654321 CFI [expiration date]

4. Endorsement for solo (each additional 90-day period): 14 CFR §61.87(p)

I certify that _____ *(First name, MI, Last name)* has received the required training to qualify for solo flying. I have determined he/she meets the applicable requirements of §61.87(p) and is proficient to make solo flights in _____ *(make and model aircraft)*.

[date] J. Jones 654321 CFI [expiration date]

5. Endorsement for solo flight in the Class B airspace: 14 CFR §61.95(a)

I certify that _____ *(First name, MI, Last name)* has received the training required by §61.95(a). I have determined he/she is proficient to conduct solo flights in _____ *(name of Class B)* airspace. *(List any applicable conditions or limitations.)*

[date] J. Jones 654321 CFI [expiration date]

6. Endorsement for solo flight to, from, or at an airport located within Class B airspace: 14 CFR §61.95(a) and §91.131(b)(1)

I certify that _____ *(First name, MI, Last name)* has received the required training of §61.95(a)(1). I have determined that he/she is proficient to conduct solo flight operations at _____ *(name of airport)*. *(List any applicable conditions or limitations.)*

[date] J. Jones 654321 CFI [expiration date]

Stage 2 / **Module 6 and Stage Check**

Ground Training

Objective:

For the student to have a practical understanding of using the flight computer and calculating weight and balance.

Content:

Using the flight computer

- ____ Calculator side
- ____ Wind side
- ____ Finding TAS
- ____ Finding/Determining heading and groundspeed
- ____ Finding the time en route and fuel requirements
- ____ Speed-Time-Distance problems
- ____ Fuel consumption problems
- ____ Finding wind components
- ____ Conversions

Weight and balance

- ____ Weight
  - ____ empty weight
  - ____ gross weight
- ____ Balance
  - ____ moment of a force
  - ____ finding CG
  - ____ airplane datums
  - ____ effect of CG on airplane handling
- ____ Weight and Balance calculations
  - ____ finding the CG
  - ____ graphical/tabular presentation of weight-and-balance data
  - ____ weight-shift calculations
  - ____ weight-change calculations
  - ____ CG movement
- ____ Review cross-country flight requirements (per 14 CFR §61.93)

Completion Standards:

This lesson is complete when the student has successfully completed all review questions following the assigned reading.

Assignment:

Ground School, Chapters 11 and 24

Minimum 141 Requirements: Dual
1.0 hour flight,
0.3 instrument work
Stage check
2.0 hours ground instruction

Flight Training

Objective:

For the student to experience takeoffs at V_X and V_Y, and to experience short-field takeoffs and landings. The student should also gain knowledge and experience in navigation and instrument work. For the Stage Check, student should demonstrate skill in the following areas according to the completion standards.

Content:

- ____ Preflight
- ____ V_X and V_Y takeoffs and landings
- ____ Four basics under the hood
- ____ Slow Flight
- ____ Stalls (power on/off)
- ____ Steep Turns
- ____ Ground reference maneuvers
- ____ Navigation
- ____ Short-field takeoffs and landings
- ____ Postflight procedures

Completion Standards:

This module is complete when the student can fly takeoffs and landings at V_X and V_Y, perform short-field takeoffs and landings, navigate with radio facilities (VOR), and perform the four basics in instrument conditions (under the hood). Flight should be within 150 feet, 15 degrees, and 15 knots, while performing the maneuvers listed in the content of this module. Student should demonstrate pre-solo maneuvers without instructor assistance.

Recommended Reading:

Flight School
Private Pilot Test Prep, Chapters 4, 5, and 12

Stage 2 / **Module 6**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage Check Successful:_____

Stage 3
Cross-Country Flight

Objective
The objective of Stage 3 is for the student to gain knowledge and experience in the following:

Ground Training
- Takeoff performance
- Landing performance
- Enroute performance
- Flight planning
- Ground-based navigation: VOR, ADF, radar, transponder, DME, and RNAV
- Enroute navigation

Flight Training
- Pre-cross-country maneuvers (per 14 CFR § 61.93)
- Cross-country flight planning
- The required dual and solo cross-country time

Completion Standards
Stage 3 is complete when the student achieves the objective of each lesson, and can list or describe the correct process or reference for accomplishing elements, exercises and activities. Student shall score at least 80% on the Stage 3 Exam, and all deficient areas shall be reconciled to 100%.

Stage 3 / **Module 1**

Minimum 141 Requirements: Dual 1.0 hour flight,
0.3 instrument work
Solo 1.0 hour flight
1.5 hours ground instruction

Ground Training

Objective:
For the student to have a practical understanding of takeoff, landing, and enroute performance.

Content:
____ Review objective of Stage 3

Takeoff performance
- ____ Factors affecting takeoff performance
  - ____ weight
  - ____ increased takeoff speed
  - ____ air density
  - ____ head/tail winds
  - ____ crosswinds
  - ____ runway surface/slope
  - ____ flaps
- ____ Takeoff distance graph/table

Landing performance
- ____ Factors affecting landing performance
  - ____ weight
  - ____ air density
  - ____ effect of wind
  - ____ runway surface/slope
  - ____ flaps
  - ____ fast approach speeds
- ____ Landing distance graph/table

____ Wake Turbulence

____ Ground Effect

____ Windshear

____ Taxiing

Enroute performance
- ____ Cruise altitude
- ____ Power setting
- ____ Fuel consumption/requirements
- ____ Effects of wind

Completion Standards:
This lesson is complete when the student has successfully completed all review questions following the assigned reading.

Assignment:
Ground School, Chapters 9 and 10

Flight Training

Objective:
For the student to become proficient in navigation, and to become competent to perform at satellite airports. The student will also gain experience in soft-field techniques, and gain proficiency in instrument work and lost procedures.

Content:
Flight A (Dual)
- ____ Preflight
- ____ Crosswind takeoffs and landings
- ____ Short-field takeoffs and landings
- ____ Soft-field takeoffs and landings
- ____ Pilotage to another airport/Diversion

Instrument
- ____ Four basics
- ____ Constant airspeed climbs
- ____ Constant airspeed descents
- ____ Turns to headings
- ____ Slow Flight
- ____ Stalls

____ NAVAIDs

____ Lost procedures

____ Postflight procedures

Flight B (Solo)
- ____ Instructor endorsement
- ____ Preflight
- ____ Pilotage and navigation to satellite airport
- ____ Crosswind takeoffs and landings
- ____ Short-field takeoffs and landings
- ____ Soft-field takeoffs and landings
- ____ Postflight

Completion Standards:
This module is complete when the student can perform soft-field techniques, navigate by pilotage, fly to an assigned diversion, and fly at Slow Flight in instrument conditions. Flight should be within 100 feet, 10 degrees, and 10 knots, while performing the maneuvers listed in the content of this module. Landings should be within 200 feet of chosen point of landing.

Recommended Reading:
Flight School

Stage 3 / **Module 1**

Date of Completion:_____

Signature:_____

Time Flown:_____

Instructor Note: Follow the format below when signing-off the endorsement for your students. (From AC 61-65)

Endorsement for solo landings and takeoffs at another airport within 25 NM: 14 CFR §61.93(b)(1)

I certify that _____ *(First name, MI, Last name)* has received the required training of §61.93(b)(1). I have determined that he/she is proficient to practice solo takeoffs and landings at _____ *(airport name).* The takeoffs and landings at _____ *(airport name)* are subject to the following conditions: _____ *(List any applicable conditions or limitations.)*

[date] J. Jones 654321 CFI [expiration date]

Stage 3 / **Module 2**

Minimum 141 Requirements: * Solo
1.0 hour flight
1.5 hours ground instruction

* Flight can be conducted dual or solo at the instructor's discretion.

Ground Training

Objective:
For the student to have a practical understanding of flight planning, and a working knowledge of weather in preparation for solo cross-country flight.

Content:
____ *Flight planning*
- ____ Personal navigation equipment
- ____ Weather and operational considerations
- ____ Preflight planning
  - ____ altitude
  - ____ courses and distances
  - ____ speed, time and heading calculations
  - ____ completing the flightlog
  - ____ fuel calculations
  - ____ weight-and-balance
  - ____ takeoff and landing performance
- ____ The flight plan form
- ____ Airplane documentation and preparation for flight
- ____ Flight following

____ *Right-of-way rules*
____ *Weather discussion*
- ____ Clouds
- ____ Thunderstorms
- ____ Air masses
- ____ Frontal weather
- ____ Low- and high-pressure systems
- ____ Weather reports
- ____ Weather forecasts

Completion Standards:
This lesson is complete when the student has successfully completed all review questions following the assigned reading.

Assignment:
Ground School, Chapter 25

Flight Training

Objective:
For the student to gain knowledge and experience in private maneuvers, specialty takeoffs and landings. Student shall become proficient at flying to satellite airports.

Content:
____ Preflight
____ Crosswind takeoffs and landings
____ Short-field takeoffs and landings
____ Soft-field takeoffs and landings
____ Navigation to satellite airport
____ Steep Turns
____ Slow Flight
____ Stalls
____ Ground reference maneuvers
____ Postflight

Completion Standards:
This module is complete when the student can fly within 100 feet, 10 degrees, and 10 knots, while performing the maneuvers listed in the content of this module.

Recommended Reading:
Flight School

Stage 3 / **Module 2**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage 3 / **Module 3**

Minimum 141 Requirements: Dual, Cross-Country
2.0 hours flight,
0.3 instrument work
2.0 hours ground instruction

Ground Training

Objective:
For the student to have a practical understanding of ground-based navigation using the VOR.

Content:
Navigation aids

____ VOR
- ____ VOR/DME, TACAN and VORTAC
- ____ Course deviation indicator
- ____ TO/FROM arrow
- ____ Radio magnetic indicator (RMI)
- ____ Horizontal situation indicator (HSI)
- ____ VOR receiver check
- ____ Orientation
- ____ Intercepting course
- ____ Tracking

Completion Standards:
This lesson is complete when the student has successfully completed all review questions following the assigned reading.

Assignment:
Ground School, Chapter 27

Flight Training

Objective:
For the student to become competent at performing cross-country duties. Student should also gain experience in instrument flight at unusual attitudes.

Content:
- ____ Cross-country discussion
  - ____ Plotting course
  - ____ Flightlog
  - ____ Weather
  - ____ Filing flight plan
  - ____ Flight computer
- ____ Preflight
- ____ Cross-country flight
- ____ Use of flightlog
- ____ Navigation
- ____ Radio communications
- ____ Instrument unusual attitudes
- ____ Short-field takeoffs and landings
- ____ Soft-field takeoffs and landings
- ____ Postflight

Completion Standards:
This module is complete when the student is competent to conduct solo cross-country operations. Flight must be within 200 feet, 15 degrees, and 10 knots, and coordination maintained at all times. Cross-country operations must be within 5 minutes of ETA and 3 NM of route.

Recommended Reading:
Flight School

Stage 3 / **Module 3**

Date of Completion:_____

Signature:_____

Time Flown:_____

Optional **Stage 3 Review**

Lesson Time: Dual, Cross-Country
1.5 hours flight, or whatever is necessary to meet objective
1.0 hour ground instruction, or whatever is necessary to meet objective

Flight Training

Objective:
For the student to become competent at performing cross-country duties. Student should also gain experience in instrument flight at unusual attitudes.

Content:
____ Cross-country discussion
- ____ Plotting course
- ____ Flightlog
- ____ Weather
- ____ Filing flight plan
- ____ Flight computer

____ Preflight
____ Cross-country flight
____ Flightlog use
____ Navigation
____ Radio communications
____ Instrument unusual attitudes
____ Short-field takeoffs and landings
____ Soft-field takeoffs and landings
____ Postflight

Completion Standards:
This module is complete when the student is competent to conduct solo cross-country operations. Flight must be within 200 feet, 15 degrees, and 10 knots, and coordination maintained at all times. Cross-country operations must be within 5 minutes of ETA and 3 NM of route.

Recommended Reading:
Flight School

Optional **Stage 3 Review**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage 3 / **Module 4**

Minimum 141 Requirements: Solo — Cross-Country
2.0 hours flight
1.0 hour ground instruction

Ground Training

Objective:
For the student to gain a practical understanding of ground-based navigation including ADF, Radar, the Transponder, DME, and RNAV.

Content:
Navigation aids

____ Ground-based navigation
- ____ ADF and heading indicator
- ____ NDB range, accuracy, identification
- ____ ADF control panel
- ____ ADF relative bearing indicator (RBI)
- ____ ADF radio magnetic indicator
- ____ orientation
- ____ intercepting course
- ____ tracking

____ Radar
____ Transponder
____ DME
____ RNAV — Area Navigation
____ GPS

Completion Standards:
This lesson is complete when the student has successfully completed all review questions following the assigned reading.

Assignment:
Ground School, Chapter 27

Flight Training

Objective:
For the student to gain the required experience in solo cross-country operations. Flight must be at least 150 NM, with landings at a minimum of three points.

Content:
____ Cross-country planning
____ Instructor endorsement
____ Preflight
____ Ground-based navigation
____ Pilotage
____ Dead Reckoning
____ Flightlog kept throughout flight
____ At least one landing with more than 50 NM between the takeoff and landing locations
____ Postflight

Completion Standards:
This module is complete when the student can maintain flight coordinated and within 200 feet, 15 degrees, and 10 knots, at all times. Cross-country should be flown within 3 NM of the planned route at all times, and arrive at the en route checkpoints and destinations within 5 minutes of the initial or revised ETA.

Recommended Reading:
Flight School

Stage 3 / **Module 4**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage 3 / **Module 5 and Stage Check**

Minimum 141 Requirements: Dual 1.0 hour flight
* Solo: Cross-country
6 hrs flight
Stage check
1.5 hours ground instruction
Stage exam

* Flight can be conducted dual or solo at the instructor's discretion.

Ground Training

Objective:
For the student to gain an understanding of enroute navigation.

Content:
Enroute navigation

____ Compensating for wind effect
____ Departure from an airport
____ Cruise
  ____ map-reading in flight
  ____ chart orientation in the airplane
  ____ log keeping
____ Navigation techniques
  ____ groundspeed checks
  ____ heading corrections
____ Diversions
  ____ en route diversions
  ____ diversions to an alternate airport
____ Lost procedures
____ Flight following
____ Emergency Locator Transmitter (ELT)

Completion Standards:
This lesson is complete when the student has successfully completed all review questions following the assigned reading. Stage 3 Exam must be passed with a minimum score of 80%, and reconciled to 100%.

Assignment:
Ground School, Chapter 26
Stage 3 Exam

Stage 3 / **Module 5**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage Exam Score:_____

Stage Check Successful:_____

Flight Training

Objective:
For the student to gain experience in solo cross-country operations. For the Stage Check, student should demonstrate skill in the following areas according to the completion standards.

Content:
Flight A (Dual, Local, 1.0 hour)

____ Preflight
____ Normal takeoff and landing
____ Slow Flight
____ Stall series
____ Steep Turns
____ Ground reference maneuvers
____ Ground-based navigation
____ Pilotage
____ Dead Reckoning
____ Postflight

Flight B (Solo Cross-Country, 2.0 hours)*

____ Cross-country planning
____ Instructor endorsement
____ Preflight
____ Ground-based navigation
____ Pilotage
____ Dead Reckoning
____ Flightlog kept throughout flight
____ At least one landing more than 50 NM from departure airport
____ Postflight

Flight C (Solo Cross-Country, 4.0 hours)*

____ Cross-country planning
____ Instructor endorsement
____ Preflight
____ Ground-based navigation
____ Pilotage
____ Dead Reckoning
____ Flightlog kept throughout flight
____ Postflight

Completion Standards:
Flight should be coordinated and within 200 feet, 15 degrees, 10 knots, at all times, and cross-countries should be flown within 3 NM of the planned route at all times, and arrive at the en route check-points and destinations within 5 minutes of the initial or revised ETA.

Recommended Reading:
Flight School
Private Pilot Test Prep, Chapters 9, 10, and 11

Instructor Note: Follow the format below when signing-off the endorsement for your students. (From AC 61-65)

1. Endorsement for initial solo-country flight: 14 CFR 61.93(c)(1)

I certify that _____ *(First name, MI, Last name)* has received the required solo cross-country training. I find he/she has met the applicable requirements of §61.93, and is proficient to make solo cross-country flights in a _____ *(make and model)* airplane.

[date] J. Jones 654321 CFI [expiration date]

2. Endorsement for each solo cross-country flight: 14 CFR §61.93(c)(2)

I have reviewed the cross-country planning of _____ *(First name, MI, Last name)*. I find the planning and preparation to be correct to make the solo flight from _____ *(location)* to _____ *(destination)* via _____ *(route of flight)* with landings at _____ *(name the airports)* in a _____ *(make and model aircraft)* on _____ *(date)*. *(List any applicable conditions or limitations.)*

[date] J. Jones 654321 CFI [expiration date]

3. Endorsement for repeated solo cross-country flights not more than 50 NM from the point of departure: 14 CFR §61.93(b)(2)

I certify that _____ *(First name, MI, Last name)* has received the required training in both directions between and at both _____ *(airport names)*. I have determined he/she is proficient of §61.93(b)(2) to conduct repeated solo cross-country flights over that route, subject to the following conditions: _____ *(list applicable conditions)*.

[date] J. Jones 654321 CFI [expiration date]

Stage 4
Prep for Checkride

Objective
The objective of Stage 4 is for the student to gain knowledge and experience in the following:

Ground Training
- Heating effects in the atmosphere
- Wind
- Clouds and thunderstorms
- Air masses and frontal weather
- Weather reports and forecasts
- Private Pilot Airman Certification Standards (ACS)
- Prep for checkride (oral)
- Take and pass the FAA Knowledge Exam

Flight Training
- The experience and knowledge required by the Private certificate
- Review all Private maneuvers, performed according to the ACS
- Sign-off for the Private Checkride

Completion Standards
Stage 4 is complete when the student achieves the objective of each lesson, and can list or describe the correct process or reference for accomplishing elements, exercises and activities. Student shall score at least 80% on the Stage 4 Exam, and all deficient areas shall be reconciled to 100%. Students must take and pass the FAA Private Knowledge Exam. At the completion of this stage, student is signed off to take the Private Pilot checkride.

Note: 3 hours must be dedicated to preparation for the practical test within 60 days preceding the date of the test for §141 compliance.

Stage 4 / **Module 1**

Minimum 141 Requirements: Dual
1.0 hour flight,
0.3 instrument work
1.5 hours ground instruction

Ground Training

Objective:
For the student to have an understanding of wind and the heating effects in the atmosphere.

Content:
____ Review objective of Stage 4

The atmosphere
- ____ Air density
- ____ Subdivision of the atmosphere
- ____ Gases in air
- ____ Standard atmosphere

Heat exchange processes
- ____ The sun
- ____ Terrestrial re-radiation
- ____ General circulation
- ____ Local heating and cooling
- ____ Local air movements
- ____ Temperature inversions

Wind
- ____ Coriolis effect
- ____ Geostrophic wind
- ____ Gradient wind
- ____ Surface wind
- ____ Wind in the tropics

Completion Standards:
This lesson is complete when the student has successfully completed all review questions following the assigned reading.

Assignment:
Ground School, Chapters 13 and 14

Flight Training

Objective:
For the student to become proficient in hood work, Slow Flight and stalls with distractions, and spin awareness.

Content:
____ Preflight
____ Slow Flight
____ Power on/off Stalls
____ Spin awareness training
____ Steep Turns

Hood work
- ____ Four basics
- ____ Slow Flight
- ____ Stalls
- ____ Use of radios and navaids

____ Ground reference maneuvers
____ Short-field takeoffs and landings
____ Soft-field takeoffs and landings
____ Postflight

Completion Standards:
This module is complete when the student is within Private Pilot ACS at all times.

Recommended Reading:
Flight School

Stage 4 / **Module 1**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage 4 / **Module 2**

Minimum 141 Requirements: Dual: Night Local 1.5 hrs flight, 0.3 instrument work
Dual: Night Cross-Country 1.5 hours flight (more than 100 NM)
2.0 hours ground instruction

Ground Training

Objective:
For the student to have an understanding of air masses, frontal weather, clouds, and thunderstorms.

Content:

Clouds

- ____ Naming of clouds
- ____ Moisture in the atmosphere
- ____ Adiabatic processes
- ____ Formation of clouds
  - ____ the Foehn (or Chinook) wind effect
  - ____ clouds formed by turbulence and mixing
  - ____ clouds formed by widespread ascent
- ____ Precipitation from clouds

Thunderstorms

- ____ Three necessary conditions
  - ____ instability
  - ____ moisture
  - ____ lifting force
- ____ Life cycle
  - ____ cumulus stage
  - ____ mature stage
  - ____ dissipating stage
- ____ Severe thunderstorms
- ____ Embedded thunderstorms
- ____ Danger of thunderstorms
  - ____ icing
  - ____ hailstones
  - ____ lightning strikes
  - ____ turbulence
  - ____ downbursts and microbursts
  - ____ tornadoes and water spouts

Air masses

- ____ Origin and path
- ____ Divergence or convergence

Frontal weather

- ____ Warm front
- ____ Cold front
- ____ Occluded front
- ____ Stationary front
- ____ Development and decay of fronts

____ Depressions— areas of low pressure
____ Anticyclones — areas of high pressure
____ Review night flying regulations

Completion Standards:
This lesson is complete when the student has successfully completed all review questions following the assigned reading.

Assignment:
Ground School, Chapters 15 and 16

Flight Training

Objective:
For the student to gain experience in night flying operations, including hood work, and cross-country. This module should be completed within 60 days of the practical test.

Content:

Flight A (Night, Local, 1.5 hours)

____ Weather briefing
____ Night preflight inspection
____ Night navigation
____ Area orientation
____ Steep Turns
____ Slow Flight
____ Stalls (Power on/off)
____ Instrument work
____ Emergency situations and landings
____ Go-arounds
____ Takeoffs and landings (10, with and without panel and landing lights)
____ Postflight

Flight B (Night, Cross-Country, 1.5 hours)

Flight must be more than 100NM total distance.

____ Plotting course
____ Preparation of flightlog
____ Flight plan
____ Weather briefing
____ Night preflight inspection
____ Cross-country
____ Instrument work
____ Emergency situation and landing
____ Postflight

Completion Standards:
This module is complete when the student has the required 3 hours of dual night training, 10 takeoffs and landings, and completed the >100 NM dual cross-country flight. Landings should be within 400 feet of a specified point. Flight should be within 100 feet, 10 degrees, and 10 knots, while performing the maneuvers listed in the content of this module.

Recommended Reading:
Flight School

Stage 4 / **Module 2**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage 4 / **Module 3**

Minimum 141 Requirements: * Solo: Cross-Country, Night
2.0 hours flight
1.5 hours ground instruction

* Flight can be conducted dual or solo, at instructor's discretion.

Ground Training

Objective:
For the student to have a practical understanding of weather reports and forecasts.

Content:
Weather reports

____ Weather depiction chart
____ Surface analysis chart
____ METAR
____ Pilot weather reports (PIREPs)

Weather forecasts

____ Low-level significant weather prognostic charts
____ Terminal Aerodrome forecast (TAF)
____ Aviation Area forecast (FA), Graphical Area forecast (GFA)
____ Weather advisories
  ____ AIRMETs (WA)
  ____ SIGMETs (WS)
  ____ Convective SIGMETs (WST)
  ____ Center Weather Advisories (CWA)
  ____ VFR not recommended
____ Convective outlook
____ Winds and temperature aloft forecast (FB)
____ Severe weather outlook charts (AC)

Staying informed in the air

____ Flight Service
____ SIGMET
____ AIRMET
____ HIWAS
____ ATIS
____ AWOS
____ ASOS

Completion Standards:
This lesson is complete when the student has successfully completed all review questions following the assigned reading.

Assignment:
Ground School, Chapter 18

Flight Training

Objective:
For the student to gain experience in solo, night, and cross-country operations.

Content:
____ Plotting course
____ Flightlog
____ Instructor endorsement
____ Preflight
____ Filing flight plan (round robin)
____ Night flight operations
____ Cross-country flying
____ Postflight

Completion Standards:
This module is complete when the student has gained proficiency in night and cross-country operations.

Recommended Reading:
Flight School

Stage 4 / **Module 3**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage 4 / **Module 4**

Minimum 141 Requirements: *Solo
1.0 hour flight
1.5 hours ground instruction

* Flight can be conducted dual or solo, at instructor's discretion.

Ground Training

Objective:
For the student to gain complete proficiency in all areas included in the Private Pilot Airman Certification Standards.

Content:
____ Review the Private Pilot Airman Certification Standards (ACS)

Assignment:
Review the Private Pilot Airman Certification Standards (ACS)

Flight Training

Objective:
For the student to become proficient in all private maneuvers, in preparation for the checkride.

Content:
____ Preflight
____ Slow Flight
____ Steep Turns
____ Stalls (Power on/off)
____ VOR radial interception and orientation
____ S-turns
____ Turns Around a Point
____ Rectangular Course
____ Emergency landings
____ Short-field takeoffs and landings
____ Soft-field takeoffs and landings
____ Crosswind takeoffs and landings
____ Slips to landings
____ Postflight

Completion Standards:
This module is complete when all the private maneuvers are completed according to the ACS.

Recommended Reading:
Flight School

Stage 4 / **Module 4**

Date of Completion:_____

Signature:_____

Time Flown:_____

Optional **Stage 4 Review**

Lesson Time: Dual 1.0 hour flight, or whatever is necessary to meet objective.
1.5 hours ground instruction, or whatever is necessary to meet objective.

Flight Training

Objective:
For the student to become proficient in all private maneuvers, in preparation for the checkride.

Content:
____ Preflight
____ Slow Flight
____ Steep Turns
____ Stalls (Power on/off)
____ VOR radial interception and orientation
____ S-turns
____ Turns Around a Point
____ Rectangular Course
____ Emergency landings
____ Short-field takeoffs and landings
____ Soft-field takeoffs and landings
____ Crosswind takeoffs and landings
____ Slips to landings
____ Postflight

Completion Standards:
This module is complete when all the private maneuvers are completed according to the ACS.

Recommended Reading:
Flight School

Optional **Stage 4 Review**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage 4 / **Module 5 and Stage Check**

Ground Training

Objective:

For the student to take and pass the FAA Private Pilot Knowledge Exam, and become proficient in all areas required for the private oral exam portion of the checkride.

Content:

____ Review all private pilot subject matter from the Private Pilot Airman Certification Standards

____ Suggested review material: *Private Oral Exam Guide*

Completion Standards:

Stage 4 Exam must be passed with a minimum passing score of 80%, and reconciled to 100%.

Assignment:

Suggested reading: review *Private Oral Exam Guide*
Stage 4 Exam
FAA Private Pilot Knowledge Exam

Minimum 141 Requirements: Dual, 1.5 hours flight,
0.3 instrument work
Stage check
2.0 hours ground instruction
Stage exam

Flight Training

Objective:

For the student to become competent to pass the private pilot checkride. For the Stage Check, student should demonstrate skill in the following areas according to the completion standards. This module should be completed within 60 days of the practical test.

Content:

____ Weather briefing— current, forecast, winds, go-no go decision
____ Weight and Balance
____ Aircraft paperwork
____ Cross-country planning
____ Preflight
____ Starting procedures
____ Taxi
____ Run-up
____ Climb out at V_X and V_Y
____ Cross-country flying
____ Instrument work: four basics, Slow Flight, stalls, unusual attitudes
____ Slow Flight
____ Stalls (Power on/off)
____ Spin awareness and avoidance
____ Steep Turns
____ Emergency situations/landings
____ Turns Around a Point
____ S-turns
____ Rectangular Course
____ Soft-field takeoffs and landings
____ Short-field takeoffs and landings
____ Crosswind takeoffs and landings
____ Forward slips to landing
____ Radio work— nav and com
____ Postflight procedures

Completion Standards:

This module is complete when all the maneuvers and aeronautical knowledge are demonstrated according to the ACS.

Recommended Reading:

Flight School
Private Pilot Test Prep, Chapters 6, 7, and 8

Stage 4 / **Module 5**

Date of Completion:_____

Signature:_____

Time Flown:_____

Stage Exam Score:_____

Stage Check Successful:_____

Instructor Note: Follow the formats below when signing-off endorsements for your students. (From AC 61-65)

1. **Endorsement for aeronautical knowledge: 14 CFR §§ 61.35(a)(1), 61.103(d), and 61.105**

   I certify that _____ *(First name, MI, Last name)* has received the required training in accordance with § 61.105. I have determined he/she is prepared for the Private Pilot Airplane Knowledge Exam.

   [date] J. Jones 654321 CFI [expiration date]

2. **Endorsement for flight proficiency practical test: 14 CFR §§ 61.103(f), 61.107(b), and 61.109**

   I certify that _____ *(First name, MI, Last name)* has received the required training in accordance with § 61.107 and § 61.109. I have determined he/she is prepared for the Private Pilot Airplane Practical Test.

   [date] J. Jones 654321 CFI [expiration date]

Confirm for the Checkride:

- ❑ 3 hours flight training dedicated to preparation for the practical test were flown within 60 days preceding the date of the test.
- ❑ Graded pre-solo written exam
- ❑ Current Student Pilot certificate
- ❑ Each solo cross-country endorsed
- ❑ 90-day current solo endorsement (if necessary)
- ❑ Application form completely filled out
- ❑ Logbook and necessary supplies readily accessible
- ❑ Materials necessary for planning a cross-country flight
- ❑ FAA Knowledge Exam results
- ❑ Identification with photo and signature
- ❑ Instructor endorsements for checkride
- ❑ Graduation certificate
- ❑ Examiner's fee
- ❑ Current Medical

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.

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
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 ATD 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.

FAA Form 8710-1 (04-16) Supersedes Previous Edition NSN: 0052-00-682-5007

TYPE OR PRINT ALL ENTRIES IN INK

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

U.S. Department of Transportation
Federal Aviation Administration

Airman Certificate and/or Rating Application

I. APPLICATION INFORMATION (Mark 'X' in all the blocks applicable to the certificate or rating for which you are applying):

Certificates	Ratings	Other Information/Requests
Pilot: ☐ Student ☐ Recreational ☐ Private ☐ Commercial ☐ ATP-Restricted ☐ ATP *Instructor:* ☐ Flight ☐ Ground	*Category and/or Class:* ☐ ASE ☐ AME ☐ Land ☐ Sea ☐ Helicopter ☐ Balloon ☐ Glider ☐ Gyroplane ☐ Airship ☐ Powered-Lift Type Rating: *Instrument:* ☐ Airplane ☐ Helicopter ☐ Powered-Lift *Ground Instructor:* ☐ Basic ☐ Advanced ☐ Instrument ☐ Added Rating	☐ Initial ☐ Reexamination ☐ Instrument Proficiency Check ☐ Renewal ☐ Reissuance ☐ Medical Flight Test ☐ Reinstatement ☐ Flight Review ☐ Limitation Removal *Specify other:* ☐ IPL

A. Name *(Last, First, Middle)*	B. SSN *(U.S. Only)*	C. Date of Birth MM/DD/YYYY	D. Place of Birth *(City and State) or (City and Country)*

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 ☐ USA ☐ Other *specify:*	G. Do you read, speak, write, & understand the English language? ☐ Yes ☐ No
		H. Height *(inches)* / I. Weight *(pounds)* / J. Hair Color / K. Eye Color / L. Sex ☐ Male ☐ Female	

M. Do you hold, or have you ever held an FAA certificate? ☐ Yes ☐ No	M1. Grade of Certificate	M2. Certificate Number	M3. Date Issued
N. Do you hold a Medical Certificate? ☐ Yes - FAA ☐ Yes - Foreign ☐ Yes-Military ☐ No	N1. Class of Medical Certificate	N2. Name of Medical Examiner	N3. Date Issued

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? ***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.*** ☐ Yes ☐ No — O1. Date of Final Conviction

II. CERTIFICATE OR RATING APPLIED FOR ON BASIS OF:

☐ 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
☐ B. U.S. Military Competence or Experience	1. U.S. Military Service	2. Date Rated in U.S. Military		3. Rank or Grade
	4. List Military aircraft for which you have:	a. logged pilot time or provided flight instruction (IP) *(make and model)*	b. passed an Instrument Proficiency Check *(Pilot or CFI) - (make and model)*	
☐ C Graduate of an Approved Course	1.Training Agency or Training Center:	1a. Name	1b. Location *(City and State)*	1c. Certification Number / 1d. Part 142? ☐ Yes ☐ No
	2. Curriculum From Which Graduated *(Level, Category, and Class and/or Type Rating)*			3. Date
☐ D Holder of Foreign License	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.)*			
☐ E. Air Carrier Training Program	1. Name of Air Carrier	2. Date Training Began	3. Accomplished Training Program ☐ Initial ☐ Upgrade ☐ Transition ☐ Recurrent	

III. RECORD OF PILOT TIME ***(Do not write in the shaded areas)***

	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: SEL PIC/SIC; MEL PIC/SIC; SES PIC/SIC; MES PIC/SIC	Number of: Flights; Aero-Tows; Ground Launches; Powered Launches
Airplanes				PIC / SIC			PIC / SIC				PIC / SIC	PIC / SIC		
Rotorcraft				PIC / SIC			PIC / SIC				PIC / SIC	PIC / SIC	Helicopter; Gyroplane	
Powered Lift				PIC / SIC			PIC / SIC				PIC / SIC	PIC / SIC		
Gliders				PIC / SIC										
Lighter-Than-Air				PIC / SIC			PIC / SIC				PIC / SIC	PIC / SIC	Balloon; Airship	
FFS													SE; ME; Helicopter	
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? ☐ Yes ☐ No

V. APPLICANT'S CERTIFICATION: 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

☐ 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.

Instructor Action ☐ Rejected Student Pilot Application

☐ Flight Review ☐ Instrument Proficiency Check ☐ Recommendation - *I have personally instructed the applicant and consider this person ready to take the test.*

Date	Certified Flight Instructor's Signature *(Print Name and Sign)*	Certificate Number	CFI Certificate Expires

Air Agency's Recommendation

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

Designated Examiner or Airman Certification Representative Report

☐ Accepted-Student Pilot Application ☐ Rejected Student Pilot Application

☐ 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.

☐ 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)

☐ I have personally tested and/or verified this applicant in accordance with pertinent procedures and standards with the result indicated below.

☐ **I have personally delivered the Written Notification under the Pilot's Bill of Rights to the applicant.**

☐ Approved – Temporary Certificate Issued (Original Attached) ☐ 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

Evaluator's Record (*Use for All ATP Certificate(s) and/or Type Rating(s)*)

	Inspector	Examiner	Signature and Certificate Number	Date
Ground / Oral	☐	☐	_____	_____
Approved FFS/FTD Check	☐	☐	_____	_____
Aircraft Flight Check	☐	☐	_____	_____
Advanced Qualification Program	☐	☐	_____	_____

Aviation Safety Inspector or Technician Report

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)*

☐ **I have personally delivered the Written Notification under the Pilot's Bill of Rights to the applicant.**

☐ Approved – Temporary Certificate Issued (Original Attached) ☐ Disapproved – Disapproval Notice Issued (Original Attached)

☐ Accepted - Student Pilot Application ☐ 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:

☐ Examiner's Recommendation Provided/Reviewed ☐ Accepted ☐ Rejected

☐ Application for a Student Pilot Certificate Accepted

☐ Reissue or exchange of pilot, CFI, or G.I. certificate

☐ Change of name, nationality, gender or date of birth

☐ SIC Type Rating issued under § 61.55(b) (Part 91)

☐ Ground Instructor Certificate Issued ☐ Basic ☐ Advanced ☐ Instrument

☐ Flight Instructor Certificate Issued ☐ Initial ☐ Renewal ☐ Reinstatement

Instructor Renewal Based On:

☐ Activity ☐ Training Course ☐ Test ☐ Duties and Responsibilities ☐ Military Instructor Proficiency Check

Certificate or Rating Based on:

☐ Approved FAA Qualification ☐ Military Competency Criteria Not Identified on Page 1 ☐ Foreign License

☐ Special medical test conducted – report forwarded to issuing medical office or AAM-300

☐ Special Test-Reexamination (44709) conducted ☐ Approved ☐ 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)

Attachments:

☐ Certifying Statement

☐ College Transcript (Official)

☐ ATP CTP Graduation Certificate

☐ Knowledge Test Report

☐ Temporary Airman Certificate

☐ Notice of Disapproval

☐ Superseded Airman Certificate

Airman's Identification (ID) (*U.S. driver's license or passport recommended*)	**Applicant Information** *(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

☐ Meets FAA Aviation English Language Proficiency ☐ Does Not Meet FAA Aviation English Language Proficiency

REMARKS from Inspector or Examiner :

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

Stage 1 Exam
Introduction to Flying

Name: _____

Grade: _____ **Date:** _____

Instructor: _____

Circle the most correct answer choice.

1. How many hours are required for completion of the Private Pilot Certificate, following a §141 program?

A — 35 hours of flight training, 35 hours of ground training.
B — 40 hours of flight training, 35 hours of ground training.
C — 73 hours of flight training, 40 hours of ground training.

2. What has to be completed before a student can move on to the next Module?

A — A student must complete the review questions following each reading assignment.
B — A student must meet the objective specified for each module.
C — Both A and B.

3. What document(s) must be in your personal possession while operating as pilot-in-command of an aircraft?

A — Certificates showing accomplishment of a checkout in the aircraft and a current biennial flight review.
B — A pilot certificate with an endorsement showing accomplishment of an annual flight review and a pilot logbook showing recency of experience.
C — An appropriate pilot certificate, photo ID, and an appropriate current medical certificate.

4. Safety belts are required to be properly secured about which persons in an aircraft and when?

A — Pilots only, during takeoffs and landings.
B — Passengers, during taxi, takeoffs, and landings only.
C — Each person on board the aircraft during the entire flight.

5. What tolerances must be maintained in order to perform Slow Flight according to the Private Pilot Airman Certification Standards?

A — Altitude must be lower than 1,500 feet AGL, and airspeed maintained at 1.2 V_{S1}, +10/-5.
B — Airspeed must be just above stall speed with altitude maintained at ±100 feet, and heading ±10°.
C — Altitude must be no lower than 1,500 feet AGL, and altitude maintained at ±100 feet, and heading ±10°.

6. Which three flight instruments are particularly important at Slow Flight if accuracy is required and a stall is to be avoided?

A — Airspeed indicator, altimeter, coordination ball.
B — Coordination ball, airspeed indicator, heading indicator.
C — Airspeed indicator, altimeter, vertical speed indicator.

7. A pilot should announce the first indication of a Stall when

A — the airplane buffets or decay of control effectiveness.
B — the stall warning horn is activated.
C — both A and B.

8. What tolerances must be maintained to perform a Stall according to the Private Pilot Airman Certification Standards?

A — Altitude must remain above 1,500 feet AGL, heading ±10°, and recovery promptly made after a fully developed stall occurs.
B — Altitude must remain above 3,000 feet AGL, heading ±10°, and recovery promptly made.
C — Announce first indication of stall, maintain heading ±15°, and recover promptly.

9. According to the Private Pilot Airman Certification Standards, a Steep Turn must be performed maintaining

A — a coordinated 360° turn, with a 50° bank, ±5°, rolling out on the entry heading, ±10°.
B — a 45° bank, ±10°, while coordinating a 360° turn.
C — ±100 feet, ±10 knots, V_A or recommended entry speed, and coordination.

10. What should a pilot do if the airplane continues to lose altitude while performing a Steep Turn?

A — Briskly pull back on the control wheel to bring the nose above the horizon.
B — Add power and wait for the airplane to regain the altitude.
C — Roll out of the turn, and try again once the entry requirements are re-established.

11. In preflighting an aircraft, what is the minimum expected of a pilot prior to every flight?

A — Drain fuel from each quick drain.
B — Perform a walk-around inspection of the aircraft.
C — Check the required documents are aboard the aircraft.

12. Why is the use of a written checklist recommended for preflight inspection and engine start?

A — To ensure that all necessary items are checked in a logical sequence.
B — For memorizing the procedures in an orderly sequence.
C — To instill confidence in the passengers.

13. The Four Basics of flight consist of:

A — Power off stall, Power on stall, Slow flight, and Steep turns.
B — Straight and level, Takeoffs, Landings, Turns.
C — Straight and level, Turns, Climbs, Descents.

14. What force makes an airplane turn?

A — The horizontal component of lift.
B — The vertical component of lift.
C — Centrifugal force.

15. Prior to starting each maneuver, pilots should

A — check altitude, airspeed, and heading indications.
B — visually scan the entire area for collision avoidance.
C — announce their intentions on the radio.

16. The most effective method of scanning for other aircraft for collision avoidance during daylight hours is to use

A — regularly spaced concentration on the 3-, 9-, and 12-o'clock positions.
B — a series of short, regularly spaced eye movements to search each 10-degree sector.
C — peripheral vision by scanning small sectors and utilizing off-center viewing.

17. What are the six primary instruments involved in the instrument scan?

A — Airspeed indicator, heading indicator, altimeter, VOR, vertical speed indicator, attitude indicator.
B — Heading indicator, tachometer, VOR, airspeed indicator, altimeter, turn coordinator.
C — Heading indicator, altimeter, vertical speed indicator, turn coordinator, attitude indicator, airspeed indicator.

18. As VFR pilots, it is most crucial for the pilot-in-command to perform the instrument scan,

A — equally dividing his/her time between the 6 primary instruments and the engine instruments.
B — while maintaining collision avoidance by dividing his/her time between inside and outside the cockpit.
C — keeping his/her head inside the cockpit at all times.

19. Current charts must be used at all times. Sectional charts are revised

A — every 56 days.
B — no more than once a year.
C — every 6 months.

20. A sectional chart portrays

A — all aeronautical information, such as airports, airways, and special use airspace.
B — terrain relief and checkpoints such as populated places, roads, railroads, and other distinctive landmarks.
C — both A and B.

21. Steering the airplane on the ground is achieved with the use of the

A —ailerons.
B —rudder pedals.
C —elevator.

22. When taxiing with the wind coming from behind, hold the control column

A —forward and out of the wind.
B —neutral and into the wind.
C —back and out of the wind.

23. Upon completion of this course, students will graduate with a

A —student pilot certificate, with an airplane, single-engine, land class.
B —private pilot certificate.
C —private pilot certificate, with an airplane, single-engine, land class.

24. Students must uphold at all times

A —FAA regulations.
B —school requirements and procedures.
C —both A and B.

25. In order for students to succeed in this §141 program

A —all objectives must be met for each module, homework completed, and Stage Exams passed with at least an 80%.
B —all objectives must be met for each module.
C —all objectives must be met for each module, homework completed, and Stage Exams passed with at least a 70%.

26. The four forces acting on an airplane in flight are

A —lift, weight, thrust, and drag.
B —lift, weight, gravity, and thrust.
C —lift, gravity, power, and friction.

27. An airplane said to be inherently stable will

A —be difficult to stall.
B —require less effort to control.
C —not spin.

28. Lateral stability refers to the motion of the airplane about its

A —longitudinal axis.
B —lateral axis.
C —vertical axis.

29. The main structural component of the wing is the

A —rib.
B —strut.
C —spar.

30. Most light airplane braking systems are operated

A —by cables.
B —pneumatically.
C —hydraulically.

31. Name the four strokes of a piston engine

A —intake, induction, power, expansion.
B —intake, compression, power, exhaust.
C —intake, compression, power, expansion.

32. Which condition is most favorable to the development of carburetor icing?

A —Any temperature below freezing and a relative humidity of less than 50%.
B —Between 32°F and 50°F and low humidity.
C —Between 20°F and 70°F and high humidity.

33. What type of fuel can be substituted in an aircraft if the recommended octane is not available?

A —The next higher octane aviation gas.
B —The next lower octane aviation gas.
C —Unleaded automotive gas of the same octane rating.

34. 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 and increase rpm.
C —Increase climb speed and increase rpm.

35. The engine fuel primer is used

A —during normal in-flight operations.
B —only prior to startup.
C —at shutdown of the engine.

36. What instrument(s) will be affected if the pitot tube becomes clogged, but the static vents remain clear?

A —Airspeed indicator.
B —Vertical speed indicator.
C —Both A and B.

37. In steady straight-and-level flight

A — lift is greater than drag and thrust equals weight.
B — weight equals lift and drag equals thrust.
C — lift equals weight and thrust is greater than drag.

38. Which would most likely result in hyperventilation?

A — Emotional tension, anxiety, or fear.
B — The excessive consumption of alcohol.
C — An extremely slow rate of breathing and insufficient oxygen.

39. Who is responsible for determining if an aircraft is in condition for safe flight?

A — A certificated aircraft mechanic.
B — The pilot-in-command.
C — The owner or operator.

40. In regard to general privileges and limitations, a private pilot may

A — act as pilot-in-command of an aircraft carrying a passenger for compensation if the flight is in connection with business or employment.
B — share the operating expenses of a flight with a passenger.
C — not be paid in any manner for the operating expenses of a flight.

Stage 2 Exam

Solo

Pre-Solo Written

Name: _____

Grade: _____ **Date:** _____

Instructor: _____

Circle the most correct answer choice.

1. If the outside air temperature (OAT) at a given altitude is warmer than standard, the density altitude is

A — equal to pressure altitude.
B — lower than pressure altitude.
C — higher than pressure altitude.

2. Which combination of atmospheric conditions will reduce aircraft takeoff and climb performance?

A — Low temperature, low relative humidity, and low density altitude.
B — High temperature, low relative humidity, and low density altitude.
C — High temperature, high relative humidity, and high density altitude.

3. If the temperature/dew point spread is small and decreasing, and the temperature is 62°F, what type of weather is most likely to develop?

A — Freezing precipitation.
B — Thunderstorms.
C — Fog or low clouds.

4. Which type of weather briefing should a pilot request, when departing within the hour, if no preliminary weather information has been received?

A — An outlook briefing.
B — An abbreviated briefing.
C — A standard briefing.

5. What conditions are necessary for the formation of thunderstorms?

A — High humidity, lifting force, and unstable conditions.
B — High humidity, high temperature, and cumulus clouds.
C — Lifting force, moist air, and extensive cloud cover.

6. When telephoning a weather briefing facility for preflight weather information, pilots should state

A — the full name and address of the pilot-in-command.
B — the intended route, destination, and type of aircraft.
C — the radio frequencies to be used.

7. Who is responsible for making the go-no go decision for each flight?

A — Pilot-in-command.
B — Certified flight instructor.
C — Chief flight instructor.

8. What information is necessary in order to make a go-no go decision?

A — Permission from the chief flight instructor, chief mechanic, and weather briefer.
B — Acceptable weather conditions, an airworthy aircraft, and an airworthy pilot.
C — Permission from the weather briefer, an airworthy aircraft, and an airworthy pilot.

9. Two-way radio communication must be established with the Air Traffic Control facility having jurisdiction over the area prior to entering which class airspace?

A — Class C.
B — Class E.
C — Class G.

10. Unless otherwise authorized, two-way radio communications with Air Traffic Control are required for landings and takeoffs

A — at all tower controlled airports within Class D airspace only when weather conditions are less than VFR.
B — at all tower controlled airports regardless of weather conditions.
C — at all tower controlled airports only when weather conditions are less than VFR.

11. Which is the correct traffic pattern departure procedure to use at a noncontrolled airport?

A — Comply with any FAA traffic pattern established for the airport.
B — Depart in any direction consistent with safety, after crossing the airport boundary.
C — Make all turns to the left.

12. An airport's rotating beacon operated during daylight hours indicates

A — that weather at the airport located in Class D airspace is below basic VFR weather minimums.
B — there are obstructions on the airport.
C — the Air Traffic Control tower is not in operation.

13. The official source of sunrise and sunset times is

A — the *Aeronautical Information Manual*.
B — the Air Almanac.
C — the Federal Aviation Regulations.

14. An aircraft departs an airport in the Eastern Daylight Time Zone at 0945 EDT for a 2-hour flight to an airport located in the Central Daylight Time Zone. The landing should be at what coordinated universal time?

A — 1345Z.
B — 1445Z.
C — 1545Z.

15. In order to comply with Private Pilot Airman Certification Standards, students must perform Turns Around a Point and S-turns

A — at traffic pattern altitude, while maintaining altitude ±100 feet, and airspeed ±10 knots, while maintaining coordination.
B — between 600 and 1,000 feet AGL, while maintaining altitude ±100 feet, and airspeed ±10 knots, while maintaining coordination.
C — at traffic pattern altitude, while maintaining altitude ±100 feet, and heading ±10 degrees, while maintaining coordination.

16. In order to comply with Private Pilot Airman Certification Standards, the student must perform Rectangular Course

A — between 600 and 1,000 feet AGL, while maintaining altitude ±100 feet, and airspeed ±10 knots, while maintaining coordination.
B — between 600 and 1,000 feet AGL, entering 45° to the downwind, while maintaining coordination.
C — at traffic pattern altitude, while maintaining altitude ±100 feet, and airspeed ±10 knots, while maintaining coordination.

17. In headwind conditions, the groundspeed will _____ the airspeed.

A — exceed
B — be less than
C — be the same as

18. To maintain a desired track over the ground, apply

A — a wind correction angle into the wind.
B — a wind correction angle out of the wind.
C — power and a steeper bank angle.

19. The numbers 9 and 27 on a runway indicate that the runway is oriented approximately

A — 009° and 027° true.
B — 090° and 270° true.
C — 090° and 270° magnetic.

20. If two-way communication fails at an airport with a tower and cannot be restored, the recommended procedure is to

A — make an off-airport landing.
B — turn on your landing light, enter the airport area on final approach, and land as soon as possible.
C — observe traffic flow, enter the traffic pattern on the downwind, look for light signals from the tower, and squawk 7600 on your transponder.

21. In an in-flight emergency requiring emergency action, the pilot-in-command

A — may deviate from any rule of 14 CFR §91 to the extent required to meet that emergency.
B — must not deviate from any rule of 14 CFR §91.
C — may deviate from any rule of 14 CFR §91 but only after receiving prior permission from ATC.

22. When approaching another aircraft head-on, each pilot must alter his/her course

A —to the left.
B —to the right.
C —with a descent.

23. Normal and crosswind takeoffs and landings should take place

A —with the wind.
B —into the wind.
C —perpendicular to the wind.

24. When you fly solo, you are pilot-in-command, and you are required to have in your personal possession a

A —pilot certificate and logbook.
B —pilot certificate, photo ID, and medical certificate.
C —CFI solo endorsement, and copy of the FAR/AIM.

25. Student pilots are responsible for all information, rules, and regulations in Parts

A —61, and 91.
B —91, and 121.
C —1, and 67.

26. A person may not act as a crewmember of a civil aircraft if alcoholic beverages have been consumed by that person within the preceding

A —8 hours.
B —12 hours.
C —24 hours.

28. List the grade and capacity of the fuel and oil to be used in the training aircraft used for solo flight:

	Grade	Capacity
Fuel	_____	_____
Oil	_____	_____

29. What do each of the following ATC light signals mean?

	in flight	on the ground
Steady green	_____	_____
Flashing green	_____	_____
Steady red	_____	_____
Flashing red	_____	_____
Flashing white	_____	_____
Alternating red and green	_____	_____

30. What actions will you take for an engine failure:

Immediately after takeoff _____
_____

50 feet after takeoff _____
_____

Downwind, in the traffic pattern _____
_____

In the practice area _____
_____

27. List the airspeeds and their definitions, for the training aircraft to be used for solo flight:

	Speed	Definition
Short-field takeoff	_____	_____
Short-field landing	_____	_____
Normal takeoff	_____	_____
Normal landing	_____	_____
Soft-field takeoff	_____	_____
Soft-field landing	_____	_____
Practice private pilot maneuvers	_____	_____
V_{S1}	_____	_____
V_{S0}	_____	_____
V_A	_____	_____
V_X	_____	_____
V_Y	_____	_____
V_{FE}	_____	_____
V_{NO}	_____	_____
V_{NE}	_____	_____
Best Glide	_____	_____

Stage 3 Exam
Cross-Country Flight

Name: _____

Grade: _____ **Date:** _____

Instructor: _____

Circle the most correct answer choice.

1. The planned course is 165°, and the forecast wind is 330° at 15 knots. If the expected TAS is 145 knots, what is the required heading and groundspeed?

A —173° and 143 knots.
B —167° and 159 knots.
C —154° and 165 knots.

2. If you burn 7 gallons in 35 minutes, what is your rate of fuel consumption, and how long would it take to burn 10 gallons?

A —11.2 gallons/hour, and 68 minutes.
B —12.5 gallons/hour, and 38 minutes.
C —12 gallons/hour, and 50 minutes.

3. Which items are included in the empty weight of an aircraft?

A —Unusable fuel and undrainable oil.
B —Only the airframe, powerplant, and optional equipment.
C —Full fuel tanks and engine oil to capacity.

4. GIVEN:

	Weight (lb)	Arm (in)	Moment (lb-in)
Empty weight	1,495.0	101.4	151,593.0
Pilot & Pax	380.0	64.0	—
Fuel (30 gal)	—	96.0	—

The CG is located how far aft of datum?

A —CG 92.44.
B —CG 94.01.
C —CG 119.8.

5. Which combination of atmospheric conditions will reduce aircraft takeoff and climb performance?

A —Low temperature, low relative humidity, and low density altitude.
B —High temperature, low relative humidity, and low density altitude.
C —High temperature, high relative humidity, and high density altitude.

6. (Refer to Exam Figure 1 on Page 3-3.) Determine the total distance required for takeoff to clear a 50-foot obstacle.

OAT .....Std
Pressure altitude .....4,000 ft
Takeoff weight.....2,800 lbs
Headwind component.....Calm

A —1,500 feet.
B —1,750 feet.
C —2,000 feet.

7. (Refer to Exam Figure 2 on Page 3-4.) Determine the total distance required to land.

OAT 90°F
Pressure altitude .....3,000 ft
Weight.....2,900 lbs
Headwind component.....10 kts
Obstacle .....50 ft

A —1,450 feet.
B —1,550 feet.
C —1,725 feet.

8. (Refer to Exam Figure 3 on Page 3-4.) Determine the total distance required to land over a 50-foot obstacle.

Pressure altitude .....7,500 feet
Headwind.....8 kts
Temperature.....Std
Runway.....Dry grass

A —1,004 feet.
B —1,205 feet.
C —1,506 feet.

9. What is the time en route for the following flight?

Distance 65 miles, true course 060° T, wind 270° T at 12 knots, TAS 110 knots. Add 2 minutes for climb-out.

A —34 minutes.
B —28 minutes.
C —40 minutes.

10. (Refer to Exam Figure 4 on Page 3-5.) What is the expected fuel consumption for a 500 NM flight under the following conditions?

Pressure altitude ..... 4,000 feet
Temperature ..... +29°C
Manifold pressure ..... 21.3 in. Hg
Wind ..... calm

A —40.1 gallons.
B —31.4 gallons.
C —36.1 gallons.

11. Which VFR cruising altitude is acceptable for a flight on a Victor Airway with a magnetic course of 175°? The terrain is lower than 1,000 feet.

A —4,500 feet.
B —5,000 feet.
C —5,500 feet.

12. Cloud bases in Terminal Aerodrome Forecasts are given

A —MSL.
B —AGL.
C —ASL.

13. You are flying MH 080, with the OBS selected to 080, CDI needle showing 2 dots right, and the FROM flag showing. Desired course is the 080 radial outbound. The desired course is

A —out to your left.
B —out to your right.
C —directly behind you.

14. If Air Traffic Control advises that radar service is terminated when the pilot is departing Class C airspace, the transponder should be set to code

A —0000.
B —1200.
C —4096.

15. If you are 3 NM off-course to the right in 20 NM, what is your tracking error?

A —9° left.
B —9° right.
C —12° right.

16. An ATC radar facility issues the following advisory to a pilot flying on a heading of 090°: "Traffic 3 o'clock, 2 miles, Westbound." Where should the pilot look for this traffic?

A —East.
B —South.
C —West.

17. If you lost power at 200 feet after a maximum performance takeoff, what would your initial actions be?

A —Initiate a 180° turn back to the runway.
B —Pitch the nose down rapidly, and land on the remaining runway.
C —Adopt the gliding attitude to maintain flying speed and try to land approximately straight ahead.

18. According to the Private Pilot Airman Certification Standards, a student is required to touchdown within _____ feet while performing a short field landing.

A —200
B —400
C —500

19. According to the Private Pilot Airman Certification Standards, the required accuracy when flying on instruments is

A —altitude ±100 feet, airspeed ±10 knots, and heading ± 10 degrees.
B —altitude ±200 feet, airspeed ±10 knots, and heading ± 20 degrees.
C —altitude ±200 feet, airspeed ±20 knots, and heading ± 20 degrees.

20. Approaching a VOR station while flying southwest at 8,500 feet MSL, you see a multi-engine airplane at the same altitude converging from your left, headed northwest toward the VOR. According to regulations, which pilot should give way and why?

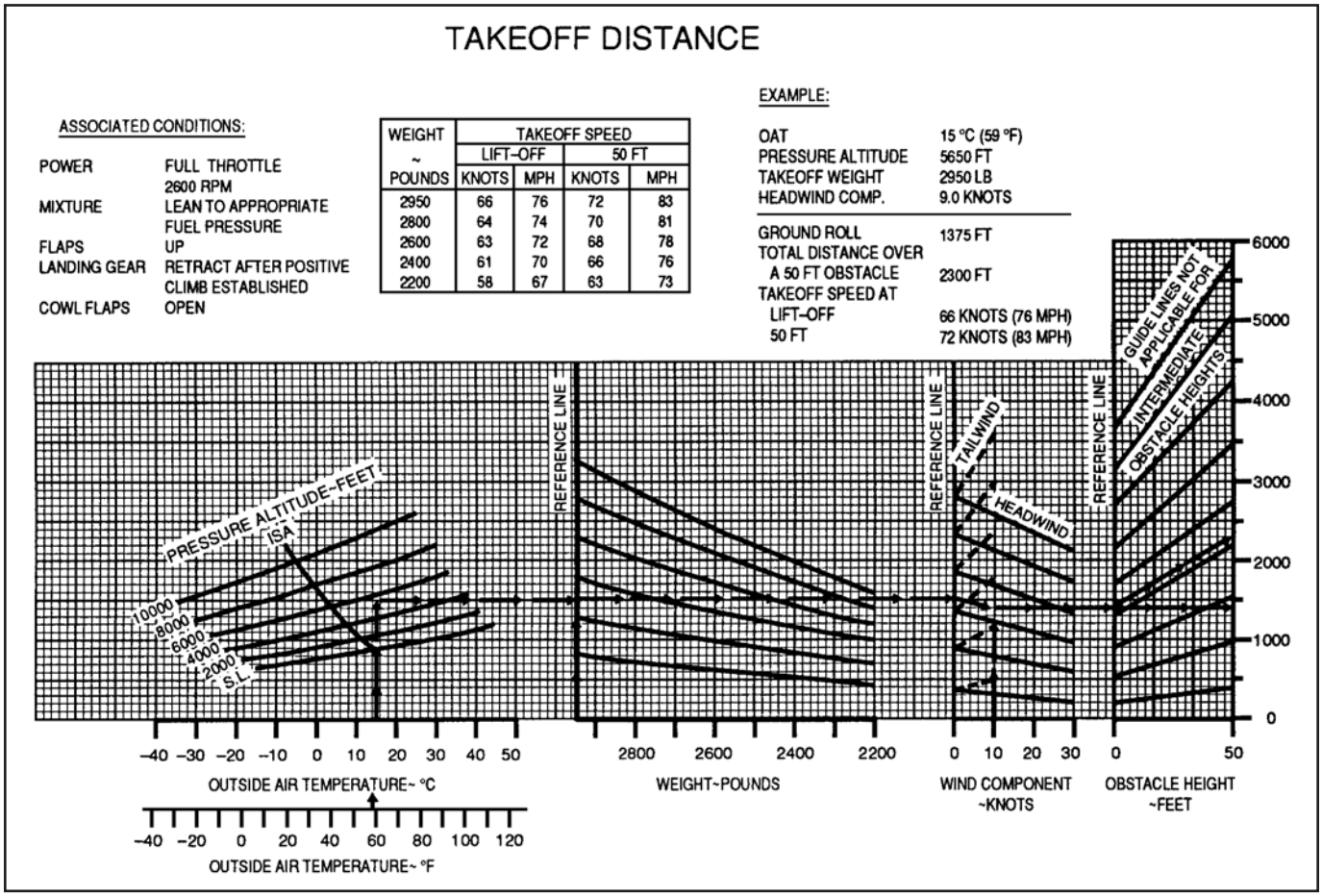
A —The pilot of the multi-engine airplane should give way since the airplane is not flying at the proper VFR cruising altitude.
B —The multi-engine airplane should give way since your airplane is to its right and you have the right-of-way.
C —You should give way since the airplane is to your left and has the right-of-way.

21. In addition to other preflight action for a VFR cross-country flight, regulations specifically require the pilot-in-command to

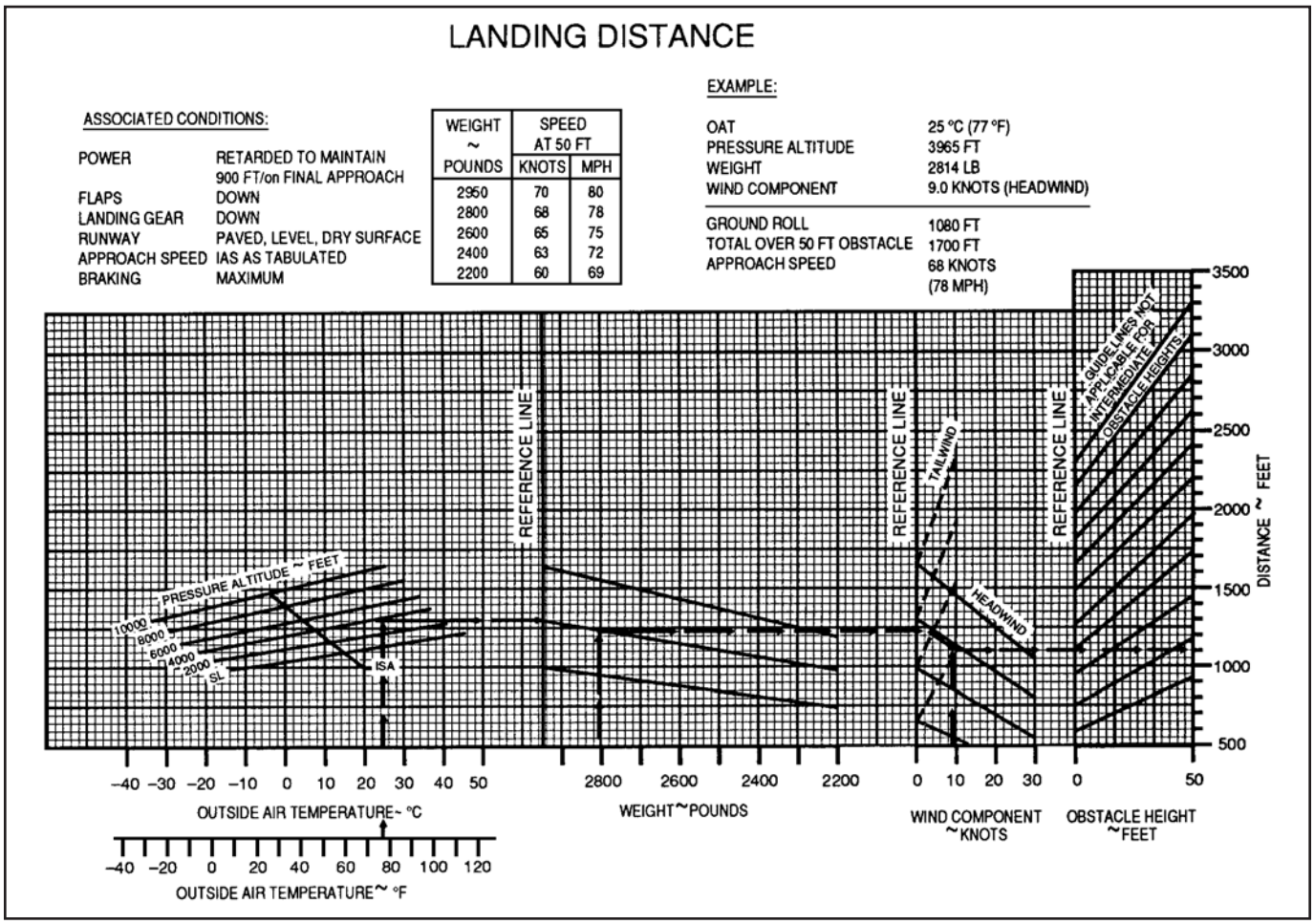
A —determine runway length at the airports of intended use.
B —check each fuel tank visually to ensure that it is always filled to capacity.
C —file a flight plan for the proposed flight.

22. If severe turbulence is encountered, the airplane's airspeed should be reduced to

A —maneuvering speed.
B —the minimum steady flight speed in the landing configuration.
C —maximum structural cruising speed.



Exam Figure 1



Exam Figure 2

LANDING DISTANCE

FLAPS LOWERED TO 40 ° - POWER OFF
HARD SURFACE RUNWAY - ZERO WIND

GROSS WEIGHT LB	APPROACH SPEED, IAS, MPH	AT SEA LEVEL & 59 °F		AT 2500 FT & 50 °F		AT 5000 FT & 41 °F		AT 7500 FT & 32 °F	
		GROUND ROLL	TOTAL TO CLEAR 50 FT OBS	GROUND ROLL	TOTAL TO CLEAR 50 FT OBS	GROUND ROLL	TOTAL TO CLEAR 50 FT OBS	GROUND ROLL	TOTAL TO CLEAR 50 FT OBS
1600	60	445	1075	470	1135	495	1195	520	1255

NOTES: 1. Decrease the distances shown by 10% for each 4 knots of headwind.
2. Increase the distance by 10% for each 60 °F temperature increase above standard.
3. For operation on a dry, grass runway, increase distances (both "ground roll" and "total to clear 50 ft obstacle") by 20% of the "total to clear 50 ft obstacle" figure.

Exam Figure 3

CRUISE POWER SETTINGS

65% MAXIMUM CONTINUOUS POWER (OR FULL THROTTLE)
2800 POUNDS

	ISA –20 °C (–36 °F)								STANDARD DAY (ISA)								ISA +20 °C (+36 °F)							
PRESS ALT.	IOAT		ENGINE SPEED	MAN. PRESS	FUEL FLOW PER ENGINE		TAS		IOAT		ENGINE SPEED	MAN. PRESS	FUEL FLOW PER ENGINE		TAS		IOAT		ENGINE SPEED	MAN. PRESS	FUEL FLOW PER ENGINE		TAS	
FEET	°F	°C	RPM	IN HG	PSI	GPH	KTS	MPH	°F	°C	RPM	IN HG	PSI	GPH	KTS	MPH	°F	°C	RPM	IN HG	PSI	GPH	KTS	MPH
SL	27	-3	2450	20.7	6.6	11.5	147	169	63	17	2450	21.2	6.6	11.5	150	173	99	37	2450	21.8	6.6	11.5	153	176
2000	19	-7	2450	20.4	6.6	11.5	149	171	55	13	2450	21.0	6.6	11.5	153	176	91	33	2450	21.5	6.6	11.5	156	180
4000	12	-11	2450	20.1	6.6	11.5	152	175	48	9	2450	20.7	6.6	11.5	156	180	84	29	2450	21.3	6.6	11.5	159	183
6000	5	-15	2450	19.8	6.6	11.5	155	178	41	5	2450	20.4	6.6	11.5	158	182	79	26	2450	21.0	6.6	11.5	161	185
8000	-2	-19	2450	19.5	6.6	11.5	157	181	36	2	2450	20.2	6.6	11.5	161	185	72	22	2450	20.8	6.6	11.5	164	189
10000	-8	-22	2450	19.2	6.6	11.5	160	184	28	-2	2450	19.9	6.6	11.5	163	188	64	18	2450	20.3	6.5	11.4	166	191
12000	-15	-26	2450	18.8	6.4	11.3	162	186	21	-6	2450	18.8	6.1	10.9	163	188	57	14	2450	18.8	5.9	10.8	163	188
14000	-22	-30	2450	17.4	5.8	10.5	159	183	14	-10	2450	17.4	5.6	10.1	160	184	50	10	2450	17.4	5.4	9.8	160	184
16000	-29	-34	2450	16.1	5.3	9.7	156	180	7	-14	2450	16.1	5.1	9.4	156	180	43	6	2450	16.1	4.9	9.1	155	178

NOTES: 1. Full throttle manifold pressure settings are approximate.
2. Shaded area represents operation with full throttle.

Exam Figure 4

Stage 4 Exam
Prep for Checkride
Final Exam

Name: _____

Grade: _____ **Date:** _____

Instructor: _____

Circle the most correct answer choice.

1. Every physical process of weather is accompanied by, or is the result of, a

A — movement of air.
B — pressure differential.
C — heat exchange.

2. Convective circulation patterns associated with sea breezes are caused by

A — warm, dense air moving inland from over the water.
B — water absorbing and radiating heat faster than the land.
C — cool, dense air moving inland from over the water.

3. The wind at 5,000 feet AGL is southwesterly while the surface wind is southerly. This difference in direction is primarily due to

A — stronger pressure gradient at higher altitudes.
B — friction between the wind and the surface.
C — stronger Coriolis force at the surface.

4. In the Northern Hemisphere, the wind is deflected to the

A — right by Coriolis force.
B — right by surface friction.
C — left by Coriolis force.

5. What conditions are necessary for the formation of thunderstorms?

A — High humidity, lifting force, and unstable conditions.
B — High humidity, high temperature, and cumulus clouds.
C — Lifting force, moist air, and extensive cloud cover.

6. Clouds, fog, or dew will always form when

A — water vapor condenses.
B — water vapor is present.
C — relative humidity reaches 100%.

7. One weather phenomenon which will always occur when flying across a front is a change in the

A — wind direction.
B — type of precipitation.
C — stability of the air mass.

8. What are characteristics of a moist, unstable air mass?

A — Cumuliform clouds and showery precipitation.
B — Poor visibility and smooth air.
C — Stratiform clouds and showery precipitation.

9. (Refer to Exam Figure 5 below.) What are the current conditions depicted for Chicago Midway Airport (KMDW)?

A — Sky 700 feet overcast, visibility 1-1/2 SM, rain.
B — Sky 7000 feet overcast, visibility 1-1/2 SM, heavy rain.
C — Sky 700 feet overcast, visibility 11, occasionally 2 SM, with rain.

METAR KINK 12845Z 11012G18KT 15SM SKC 25/17 A3000
METAR KBOI 121854Z 13004KT 30SM SCT150 17/6 A3015
METAR KLAX 121852Z 25004KT 6SM BR SCT007 SCT250 16/15 A2991
SPECI KMDW 121856Z 32005KT 1 1/2SM RA OVC007 17/16 A2980 RMK RAB35
SPECI KJFK 121853Z 18004KT 1/2SM FG R04/2200 OVC005 20/18 A3006

Exam Figure 5

10. From which primary source should information be obtained regarding expected weather at the estimated time of arrival if your destination has no Terminal Aerodrome Forecast?

A — Low-level Prognostic Chart.
B — Weather Depiction Chart.
C — Aviation Area Forecast.

11. The spin is a condition of

A — stalled, coordinated flight.
B — stalled, uncoordinated flight.
C — unstalled, uncoordinated flight.

12. A 10-knot wind at 45° to the runway direction will cause a crosswind component of

A — 7 knots.
B — 10 knots.
C — 4 knots.

13. Compared with a normal full-flap approach, a zero-flap approach will require

A — a steeper flight path, slower approach speed, lower nose attitude, and shorter ground roll.
B — a shallower flight path, slower approach speed, higher nose attitude, and shorter ground roll.
C — a shallower flight path, faster approach speed, higher nose attitude, and longer ground roll.

14. A forward slip can be used to

A — steepen an approach.
B — flatten an approach.
C — extend an approach.

15. What tolerances must be maintained in order to perform Slow Flight according to the Private Pilot Airman Certification Standards?

A — Altitude must be lower than 1,500 feet AGL, and airspeed maintained at 1.2 V_{S1}, +10/-5.
B — Airspeed must be just above stall speed with altitude maintained at ±100 feet, and heading ±10°.
C — Altitude must be no lower than 1,500 feet AGL, and altitude maintained at ±100 feet, and heading ±10°.

16. What tolerances must be maintained to perform Stalls according to the Private Pilot Airman Certification Standards?

A — Altitude must remain above 1,500 feet AGL, heading ±10°, and recovery promptly made after a fully developed stall occurs.
B — Altitude must remain above 3,000 feet AGL, heading ±10°, and recovery promptly made.
C — Announce first indication of stall, maintain heading ±15°, and recover promptly.

17. According to the Private Pilot Airman Certification Standards, a Steep Turn must be performed maintaining

A — a coordinated 360° turn, with a 50° bank, ±5°, rolling out on the entry heading, ±10°.
B — a 45° bank, ±10°, while coordinating a 360° turn.
C — ±100 feet, ±10 knots, V_A or recommended entry speed, and coordination.

18. In order to comply with Private Pilot Airman Certification Standards, students must perform Turns Around a Point and S-turns

A — at traffic pattern altitude, while maintaining altitude ±100 feet, and airspeed ±10 knots, while maintaining coordination.
B — between 600 and 1000 feet AGL, while maintaining altitude ±100 feet, and airspeed ±10 knots, while maintaining coordination.
C — at traffic pattern altitude, while maintaining altitude ±100 feet, and heading ±10°, while maintaining coordination.

19. In order to comply with Private Pilot Airman Certification Standards, student must perform Rectangular Course

A — between 600 and 1,000 feet AGL, while maintaining altitude ±100 feet, and airspeed ±10 knots, while maintaining coordination.
B — between 600 and 1,000 feet AGL, entering 45° to the downwind, while maintaining coordination.
C — between 600 and 1,000 feet AGL, entering 45° to the downwind, while maintaining altitude ±100 feet, airspeed ±10 knots, while maintaining coordination.

20. According to the Private Pilot Airman Certification Standards, a student is required to touchdown within _____ feet while performing a short field landing.

A —200
B —400
C —500

21. According to the Private Pilot Airman Certification Standards, the required accuracy when flying on instruments is

A —altitude ±100 feet, airspeed ±10 knots, and heading ± 10°.
B —altitude ±200 feet, airspeed ±10 knots, and heading ± 20°.
C —altitude ±200 feet, airspeed ±20 knots, and heading ± 20°.

22. The normal takeoff will use

A —full power and the mixture rich.
B —reduced power and the mixture significantly leaned.
C —full power and the mixture significantly leaned.

Aviation Training Device (ATD)
Syllabus

Course Objective

To supplement traditional flight training with improvements made possible with a Aviation Training Device (ATD). Instructors are encouraged to use the ATD creatively in producing scenario-based training that goes beyond the development of base motor skills.

Minimum Requirements

Flight instruction received with the ATD is loggable for Private Pilot training under Federal Aviation Regulations:

- 14 CFR 61.109 k)(1); **2.5 hours** towards the Private Pilot experience requirements.
- 14 CFR 141.57; any number of hours deemed appropriate by the school when conducting a special curricula dedicated to pilot proficiency.

Notes for Instructors

An ATD can effectively be integrated with ongoing training as a *supplemental* training tool.

Concepts are much easier to demonstrate and/or explain in a controlled and noiseless simulator environment. Take advantage of the *pause* button!

Flight schools can maximize the usefulness of the ATD by leaving the unit on and accessible to instructors during periods of ongoing flight training. Instructors who can make free use of the device for specific discussions/skills development will maximize their students' training value. This is an inherent benefit to having computer based training available to the instructing staff.

Instructors should individually spend 2 to 3 hours apiece becoming familiar with the ATD themselves in order to get comfortable with flight characteristics and functionality.

Important* Remember that primary students who do any flying in desktop flight simulators will naturally tend to favor the gauges once they transition to an airplane. It is critical to employ integrated instruction techniques from the outset. Cover the airplane instrument panel if needed!

Use the following syllabus as a guide to implementing this technology with your overall training, but also as a starting point for even more diverse applications. There is no set limit to the usefulness of an ATD in accomplishing your flight training objectives.

Lesson Placement

The following Modules may be supplemented using an approved ATD in lieu of an airplane. The following Modules are suggested because the associated tasks and placement within the curriculum lend themselves particularly well to an integrated flight training environment:

ATD Lesson	The Pilot's Manual: Private Pilot Syllabus	Lesson time
Lesson 1	Stage 1/Module 1	0.5 hr
Lesson 2	Stage 1/Module 3	0.5 hr
Lesson 3	Stage 1/Module 4	0.5 hr
Lesson 4	Stage 2/Module 3	0.5 hr
Lesson 5	Stage 2/Module 4	0.5 hr
Lesson 6	Stage 3/Module 1	0.5 hr
Lesson 7	Stage 3/Module 4	0.5 hr
Lesson 8	Stage 3/Module 3	0.5 hr

Total Loggable Time on ATD: 2.5 hr

Specialized Flight Tasks—Optional Review

Objective

To utilize the ATD environment to enhance specific flight skills.

While not comprehensive, this list is meant to offer instructors some suggestions on how to augment traditional instruction with the ATD. Both instructors and students are encouraged to implement the device in ways that go beyond logging the hours.

Content

___ Go-around procedures
___ Radio procedures (various airspace)
___ Airspace navigation (using VOR/DME)
___ Power off stalls (only procedures, not the physical skills)
___ Power on stalls (only procedures, not the physical skills)
___ Positioning controls for wind during taxi
___ Side slipping on approach for crosswind (control inputs, not the actual landing)
___ Lost communications

Lesson 1: Indoctrination

Lesson time:
0.5 hour

Objective:
For the student to gain familiarization with aircraft control and instrument interpretation.

Content:
____ Functionality and use of primary flight controls
____ Functionality and use of primary engine controls
____ Functionality of the basic flight instruments
____ Operation of the engine controls and interpretation of the engine instruments
____ Use of elevator trim
____ Straight and level
    ____ Relationship between pitch and airspeed/rate of climb
    ____ Effects of changing power
____ Pre-maneuver checks (general)
____ Turns
    ____ Attitude indicator
    ____ Rate of turn and angle of bank
    ____ Level turns

Completion Standards:
Student is able to maintain flight within 400 feet altitude, 20 degrees of heading, and 20 knots while performing the maneuvers listed.

Lesson 2: Primary Flight Skills

Lesson time:
0.5 hour

Objective:
For the student to learn and practice techniques for turning flight and slow flight. Emphasis will be on underlying principles and set-up of the maneuvers.

Content:
____ Pre-maneuver checks
____ Straight and level at target airspeeds
____ Level turns—10, 20, 30 degrees of bank
    ____ Inclinometer—slips/skids
    ____ Standard rate turns
    ____ Turn coordination
    ____ Shallow turns—explanation of adverse yaw, proper rudder technique
    ____ Steeper turns—explanation of horizontal component of lift
____ Turns to a heading

Completion Standards:
The student should be able to complete turns to within 20 degrees of a specified heading. During slow flight, student maintains altitude within 400 feet, heading within 20 degrees, airspeed with 20 knots.

Lesson 3: Basic Flight Skills

Lesson time:
0.5 hour

Objective:
For the student to combine previously learned skill sets and practice turns to headings while climbing/descending and leveling off.

Content:
____ Pre-maneuver checks (general)
____ Level-off techniques—climbs and descents
____ Constant airspeed climbs/descents to altitude
____ Constant rate climbs/descents to altitude
____ Climbing and descending turns to a heading and altitude
____ Slow flight
    ____ Discussion of airplane performance with high induced drag
    ____ Discussion of pitch and power use during the maneuver
    ____ Maneuver set up
    ____ Exploring performance at 60 knots (C172)
        ____ Climbs on heading
        ____ Descents on heading
        ____ Turns: climbing/descending/straight and level

Completion Standards:
Upon completion the student should be able to complete turns to within 20 degrees of a specified heading, level off within 200 feet of altitude and maintain airspeed within 15 knots.

Lesson 4: Instrument Skills/Abnormal Operations

Lesson time:
0.5 hour

Objective:
For the student to increase scanning proficiency and be introduced to instrument flying techniques. The student will also be introduced to unexpected instrument conditions including unusual attitudes.

Content:
____ Basic instrument skills—scanning techniques
____ Flying the numbers (pitch + power = performance)
____ Basic maneuvers
____ Abnormal operations
    ____ Inadvertently encountering IMC
    ____ Compass turns (and associated errors)
    ____ Encountering turbulence
    ____ Unusual attitude recovery
    ____ Aborted takeoff—lack of indicated airspeed (ASI can be failed, or pitot tube blocked from the failures page—click setup/failures)

Completion Standards:
Upon completion the student should be able to maintain altitude within 300 feet, heading within 15 degrees, and airspeed within 15 knots throughout maneuvering.

Lesson 5: Emergencies and Equipment Malfunctions

Lesson time:
0.5 hour

Objective:
To introduce the student to various possible emergencies as well as their corresponding recovery actions.

Content:
____ Partial or complete power loss
____ Engine roughness or overheat
____ Loss of oil pressure
____ Fuel starvation
____ Electrical malfunction
____ Vacuum/pressure, and associated flight instruments malfunction
____ Pitot/static
____ Landing gear or flap malfunction
____ Inoperative trim
____ Structural icing
____ Smoke/fire/engine compartment fire
____ Any other emergency appropriate to the airplane

Completion Standards:
Upon completion the student should have a grasp of the principles underlying the listed emergencies as well as their corrective actions.

Lesson 6: Navigation

Lesson time:
0.5 hour

Objective:
For the student to gain a practical understanding of NAVAIDs using the VOR and DME.

Content:
____ VOR introduction
- ____ Components of VOR radio and display
- ____ VOR navigation—concepts
  - ____ Demonstration—note: you can effectively demonstrate the principles of navigating with the VOR from On Top's position page (click setup/position) as well as from the map page (rewind/replay a flight to illustrate movement of the CDI.
  - ____ Course intercept
  - ____ Tracking

VOR exercises
- ____ Plotting a course using VOR radials (using sectional chart)
- ____ VOR radio operation including identification and signal loss
- ____ VOR intercept and tracking drills including station passage
- ____ Dead reckoning
- ____ Determining position (using sectional chart)

____ DME

Completion Standards:
Upon completion the student should understand the principles of VOR navigation and DME. The student should be able to intercept and track a VOR radial while holding altitude within 300 feet, heading within 15 degrees, and airspeed within 10 knots.

Lesson 7: ADF Navigation and Lost Procedures

Lesson time:
0.5 hour

Objective:
For the student to understand the principles of NAVAIDs using ADF. The student will also learn how to proceed after becoming lost.

Content:
____ NDB and ADF
- ____ Principle of bearings and ADF display
- ____ Operating the ADF
- ____ ADF relative bearing indicator (RBI)
- ____ Orientation
- ____ ADF exercises: homing drills

____ Lost procedures
- ____ Initial actions
- ____ Determining position with VOR/ADF
- ____ Radio communications and radar services (using sectional chart)
- ____ Navigating to an airport

Completion Standards:
Upon completion the student should understand the principles of ADF navigation. The student should be able to home to an NDB station (or appropriate airport) using the ADF. Altitude should be within 300 feet, heading within 15 degrees and airspeed within 10 knots.

Lesson 8: Cross-Country Procedures

Lesson time:
0.5 hour

Objective:
For the student to practice a pre-planned cross-country segment and become familiar with the associated elements, including radio work and dead reckoning. The student will also practice diverting.

Content:
____ Cross-country operations
- ____ Obtaining weather
- ____ Completion of planning, including Nav Log
- ____ Cockpit organization
- ____ Simulated flight segment
  - ____ 1. Departure
  - ____ 2. Communications, radio advisories and warnings
- ____ ATIS and CTAF
- ____ SIGMETS, AIRMETS, NOTAMS
- ____ FSS communication—flight plans/flight plan changes
- ____ Flight following
  - ____ 3. Intercepting course (VOR radial) after takeoff
  - ____ 4. Enroute—Completion of Nav Log
  - ____ 5. Dead reckoning between points A and B
  - ____ 6. Arrival procedures

____ Diversion
- ____ Practicing unexpected diversion (using sectional)
- ____ Alternate selection
- ____ Estimate of heading, groundspeed, ETA and fuel

Completion Standards:
Upon completion the student should be familiar with basic cross-country operations. The student should be able to track a VOR radial, know how to divert safely and know how to handle becoming lost. Altitude should be within 300 feet, heading within 15 degrees.

The Pilot's Manual

Private Pilot Syllabus

This syllabus presents the most integrated and comprehensive flight training program available, along with many advantages:

- Based on *The Pilot's Manual Series*. Schools, instructors, or students can choose to supplement the program with other texts, videos, etc. This allows freedom to teach or learn the material in the most effective way—on an individual basis.
- All Part 141 requirements have been met in a logical and user-friendly manner.
- Flight lessons are presented side-by-side with their coordinating ground lessons. This integrated approach provides the most efficient path to completion, and is easier to follow than separate ground and flight training programs.
- Flexible enough to be effective for all programs.
- Includes "Optional Reviews" in each stage—allowing the student to review material when necessary, yet still follow the syllabus and maintain progress.
- Includes an Appendix providing ATD integration with your existing instructional methods.
- Every syllabus in the series includes:
  - Instructor endorsements
  - All Stage Exams needed for the program
  - Airman Certificate Rating Application and checkride checklist

All curriculums for *The Pilot's Manual Series* also available as free downloads from the ASA website:

Private Pilot Syllabus
Instrument Rating Syllabus
Commercial Pilot Syllabus

Aviation Supplies & Academics, Inc.
7005 132nd Place SE
Newcastle, WA 98059-3153
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