

PRIVATE PILOT LESSON PLAN GUIDE

Training Material

- [*Airplane Flying Handbook*](#) FAA-H-8083-3A
- [*Pilots Handbook of Aeronautical Knowledge*](#) FAA-H-8083-25A
- [*Aeronautical Information Manual \(AIM\)*](#)
- [*Federal Aviation Regulations \(FAR's\)*](#) e-CFR
- [*Aviation Weather*](#) AC-00-6A
- [*Certification: Pilots*](#) AC-61-65E
- [*Aircraft Weight & Balance Handbook*](#) FAA-H-8083-1A
- [*Private Pilot Practical Test Standards \(PTS\)*](#) FAA-S-8081-14A
- [*Student Pilot Guide*](#) FAA-H-8083-27A

Recommended Online Study Courses

- [The Gold Seal Online Ground School](#) is a complete resource for your Private Pilot training and review. It is not just a test-prep site – the Ground School covers everything. The Ground School is divided into SIX topical sections. Each section contains multiple Lessons. You should generally go through them in order, but there is no harm in jumping around a bit. The Ground School tracks your progress through the individual Lessons. Registration is FREE and gives you access to roughly a third of the Lessons. That's right...you can take many of the lessons without *any charge!* You may Enroll at any time for just \$149.00 – this will give you instant access to the entire program. Be sure and list my email address (rodney@flighttrainmonroe.com) as your Flight Instructor so I can track your progress.
- The [King Schools](#) offer three Private Pilot courses – the *Get It All Package* - \$579, the *Written & Checkride Package* - \$398 and the *Written Only Package* - \$279
- [Sporty's Pilot Shop](#) offers two Private Pilot courses – the Deluxe Learn To Fly Course - \$349, and the Standard Learn To Fly Course - \$199.99.

All material and links are available from the Flight Train Monroe website:
www.flighttrainmonroe.com

FIRST LESSON: #1, Preflight and the Basics

Suggested student homework assignments:

- *Airplane Flying Handbook* – Chapters 1 & 2
- *Pilots Handbook of Aeronautical Knowledge* – Chapter 1 - Introduction To Flying
- *Pilots Handbook of Aeronautical Knowledge* – Chapter 5 – Flight Controls
 - Primary Flight Controls – page 5-3
 - Secondary Flight Controls – page 5-8
- *Gold Seal Online Ground School* – Section 1, Lessons 1 through 4

LESSON 1 – Preflight and the Basics

Dual – ground: 1.0, flight 0.5

Objective: Introduce student to the preflight inspection, aircraft structure and terms, the principals of flight and primary aircraft control surfaces.

Discussion topics:

- 1) positive exchange of flight controls
- 2) required certificates and documents for pilot and aircraft
- 3) airplane logbooks and required inspections
- 4) primary and secondary flight controls
- 5) aircraft fuel system
- 6) aircraft electrical system
- 7) use of checklists

Introduce:

- 1) starting procedures
- 2) radio communications
- 3) taxiing
- 4) before takeoff check
- 5) normal and crosswind takeoff and climb
- 6) effect and use of primary flight controls and trim
- 7) collision avoidance procedures
- 8) parking and securing aircraft

Completion standards:

- 1) Display understanding of aircraft control surfaces, aircraft systems, use of checklists, preflight, and post-flight procedures
- 2) Demonstrate understanding of aircraft control

NEXT LESSON: #2, Four fundamentals of flight

Suggested student homework assignments:

- *Airplane Flying Handbook* – Chapter 3 - Basic Flight Maneuvers
- *Pilots Handbook of Aeronautical Knowledge* – Chapter 2 – Aircraft Structure
 - Lift, weight, thrust, drag, pitch, roll, yaw – page 2-2
 - Slotted Fowler Flaps – page 2-5 and 5-9
- *Gold Seal Online Ground School* – Section 1, Lessons 5, 6 & 8

LESSON 2 – Four fundamentals of flight

Dual – ground: 0.5, flight: 1.0

Objective: Introduce student to the four principals of flight, takeoff, straight and level flight, climbs, turns, and descents.

Discussion topics:

- 1) Lift - Weight, Thrust - Drag
- 2) Pitch – Roll - Yaw
- 3) aircraft airworthiness

Review:

- 1) engine starting
- 2) use of checklists
- 3) before takeoff check
- 4) visual scanning and collision avoidance
- 5) parking and securing aircraft

Introduce:

- 1) crosswind taxi
- 2) normal takeoff
- 3) straight and level flight to include use of trim
- 4) aircraft configuration changes
- 5) speeds associated with use of flaps
- 6) normal approach and landing

Completion standards:

- 1) smooth engine start (no excessive engaging of starter)
- 2) student can explain run-up procedures using checklist
- 3) increased proficiency with preflight procedures and ground operations

NEXT LESSON: #3, Integrated flight instruction

Suggested student homework assignments:

- *Airplane Flying Handbook* – Basic Flight Maneuvers – Chapter 3
- *Pilots Handbook of Aeronautical Knowledge* – Chapter 3 – Principles of Flight
 - Atmospheric Pressure & Pressure Altitude – page 3-2
 - Density Altitude – page 3-3
 - Newton’s Basic Laws of Motion – page 3-4
 - Bernoulli’s Principal of Pressure/Lift – page 3-7
- *Gold Seal Online Ground School* – Section 1, Fundamentals of Aerodynamics

LESSON 3 – Integrated flight instruction

Dual – ground: 0.3, flight: 1.0

Objective: Develop student’s ability to apply coordinated control inputs and introduce the relationship between attitude and aircraft instruments

Discussion topics:

- 1) collision-avoidance procedures
- 2) flight instruments and their purpose
- 3) required medical and pilot documents

Review:

- 1) Taxiing techniques
- 2) Straight and level flight
- 3) Turns
- 4) Climbs and descents
- 3) Normal approach and landing

Introduce:

- 1) crosswind takeoff
- 2) constant airspeed climb
- 3) constant airspeed descent
- 4) turns to headings
- 5) traffic pattern entry and procedure
- 6) crosswind landings

Completion standards:

- 1) Ability to taxi in varying conditions without assistance
- 2) Student understands the concept of coordinated flight and can fly the aircraft in a coordinated matter with minimal instructor assistance
- 3) Student can conduct a stabilized approach and landing with instructor’s assistance

NEXT LESSON: #4, Slow flight and stall entries and recoveries

Suggested student homework assignments:

- *Airplane Flying Handbook* – Chapter 4 - Slow Flight, Stalls and Spins
- *Pilots Handbook of Aeronautical Knowledge* – Chapter 4 – Aerodynamics of Flight
 - Lift, Weight, Thrust, Drag – page 4-2
 - Angle of Attack – page 4-3
 - Wing Tip Vortices – page 4-8
 - Ground Effect – page 4-9
 - Axes on an Aircraft – page 4-11
 - Static Stability – page 4-13
 - Stalls – page 4-22
 - Basic propeller principles – page 4-23
 - Torque, P-factor and Slipstream Effect – page 4-26
 - Gyroscopic Effect – page 4-27
- *Gold Seal Online Ground School* – Section 2, Lessons 1 through 4

LESSON 4 – Slow flight and stall recoveries

Dual – ground: 0.5, flight: 1.0

Objective: Introduce student to slow flight and stall characteristics.

Discussion topics:

- 1) fundamentals of slow flight and stalls
- 2) terms – chord line, relative wind and angle of attack
- 3) static stability
- 4) axes on an aircraft: pitch – lateral, roll/bank – longitudinal, yaw – vertical
- 5) left turning tendency
- 6) spin awareness

Review:

- 1) constant airspeed climb and descent
- 2) turns to headings
- 3) practice area familiarization

Introduce:

- 1) flight at various airspeeds from cruise to slow flight
- 2) maneuvering during slow flight emphasizing correct use of rudder to negate increased adverse yaw at slow airspeeds
- 3) power-off stalls and recovery
- 4) power-on stalls and recovery

Completion standards:

- 1) Demonstration of understanding of stall and recovery concept
- 2) Demonstrates understanding of slow-flight concept through flight at minimum controllable airspeed
- 3) Altitude, heading, and airspeed at or near PTS standards

NEXT LESSON: #5, Emergency procedures

Suggested student homework assignments:

- *Aeronautical Information Manual* – Chapter 5 – Emergency Procedures
- *Pilot's Operating Handbook* – review emergency procedures & checklist
- *Pilots Handbook of Aeronautical Knowledge* – Chapter 6 – Aircraft Systems
 - Carburetor – page 6-7
 - Carburetor ice – page 6-8
 - Carburetor heat – page 6-9
 - Ignition system – page 6-14
 - Electrical system – page 6-28

LESSON 5 – Emergency procedures

Dual – ground: 0.5, flight: 1.0

Objective: To gain an understanding of emergency operations and to increase understanding of slow flight and stall recovery

Discussion topics:

- 1) Aircraft systems – carburetor, ignition, electrical
- 2) types of possible emergencies
- 3) best engine out glide speed
- 4) using the GPS to locate the nearest airport
- 5) use of all available resources in an emergency situation

Review:

- 1) human factors and symptoms
- 2) maneuvering during slow flight
- 3) stall recovery

Introduce:

- 1) systems and equipment malfunctions
- 2) emergency procedures using both memory items and use of checklists
- 3) emergency descent
- 4) emergency approach and landing

Completion standards:

- 1) Display increased proficiency with control of airplane
- 2) Perform unassisted takeoffs
- 3) Demonstrate basic understanding of emergency operations

NEXT LESSON: #6, Steep turns and ground reference maneuvers

Suggested student homework assignments:

- *Airplane Flying Handbook* – Chapter 6 – Ground Reference Maneuvers
- *Airplane Flying Handbook* – Chapter 9 – Performance Maneuvers/Steep Turns (pages 1 & 2)
- *Gold Seal Online Ground School* – Section 3, Lessons 7 & 8

LESSON 6 – Steep turns and ground reference maneuvers

Dual – ground: 0.5, flight: 1.0

Objective: Introduce student to performance maneuvers

Discussion topics:

- 1) steep turns
- 2) fundamentals of ground reference maneuvers
- 3) wake turbulence avoidance
- 4) traffic pattern elements/rectangular course

Review:

- 1) maneuvering during slow flight
- 2) emergency procedures

Introduce:

- 1) steep turns
- 2) rectangular course/traffic pattern
- 3) S-turns
- 4) turns around a point

Completion standards

- 1) Ability to maintain specific ground track during ground-reference maneuvers
- 2) Altitude, airspeed, and heading within PTS standards during straight and level flight

NEXT LESSON: #7, Maneuvers review

Suggested student homework assignment:

- Review previously assigned reading, research the answers to any questions, and be prepared to discuss them during the preflight ground briefing of the review lesson.
- Diagram ground reference maneuvers showing wind corrections at different positions during the maneuvers.
- *Airplane Flying Handbook* – Chapter 5 – Takeoff and Departure Climbs

LESSON 7—Maneuvers review

Dual—ground: 0.5, flight: 1.2, simulated instrument: 0.3

Objective: Review material learned in previous lessons and increase comfort level with the airplane in various flight regimes

Discussion topics:

- 1) Pilot-in-command (PIC) responsibility and authority
- 2) Elements of basic instrument maneuvers

Review:

- 1) Normal and crosswind takeoffs and landings
- 2) Stall recoveries
- 3) Steep turns
- 4) Maneuvering during slow flight
- 5) Ground reference maneuvers
- 6) Emergency procedures

Introduce:

- 1) Flight by reference to instruments

Completion standards:

- 1) Demonstrate increased proficiency during maneuvers
- 2) Altitude, airspeed, and heading within PTS standards during straight and level flight

NEXT LESSON: #8, Traffic Pattern/Normal & Crosswind Takeoff & Landings

Suggested student homework assignments:

- *Operations at non-towered Airports*
http://flighttrainmonroe.com/uploads/Operations_at_Non-Towered_Airports.pdf
- *Operations at Towered Airports*
http://flighttrainmonroe.com/uploads/Operations_at_Towered_Airports.pdf
- *Airplane Flying Handbook* – Chapter 5 – Takeoff and Departure Climbs
- *Airplane Flying Handbook* – Chapter 7 – Airport Traffic Patterns
- *Airplane Flying Handbook* – Chapter 8 – Approached and Landings
- *Gold Seal Online Ground School* – Section 2, Lessons 5 & 6

LESSON 8 – Traffic Pattern/Normal & Crosswind Takeoff & Landings

Dual – ground: 0.5, flight: 1.0

Objective: Review and perfect traffic pattern operations, practice takeoffs and landings

Discussion topics:

- 1) traffic pattern operations and radio phraseology
(upwind/crosswind/downwind/base/final)

Review:

- 1) normal and crosswind takeoff and climb
- 2) traffic pattern operations
- 3) normal and crosswind approach and landing

Introduce:

- 1) traffic pattern engine-out procedures
- 2) controlled/uncontrolled field operations
- 3) no-flap landings
- 4) forward slips to landing
- 5) go-arounds from rejected landings

Completion standards:

- 1) Ability to perform takeoffs and landings with no instructor input
- 2) Stays within traffic pattern and maintains adequate ground track

NEXT LESSON: #9, Pre-solo Review

Suggested student homework assignments:

- Federal Aviation Regulations on student pilot solo requirements (61.87)
- Airport/Facilities Directory data on airport at which solo will occur.
- Practice getting weather briefings and evaluating suitability of conditions.

LESSON 9 – Pre-solo review

Dual – ground: 1.0, flight: 1.0, simulated instrument: 0.3

Objective: Determine that the student is ready for the first solo flight

Discussion topics:

- 1) present pre-solo quiz and correct to 100%
- 2) weak areas on quiz

Review:

- 1) operation of systems
- 2) preflight inspection
- 3) engine starting
- 4) radio communications
- 5) normal and crosswind taxiing
- 6) before-takeoff check
- 7) normal and crosswind takeoff
- 8) climbing and descending turns
- 9) straight-and-level flight
- 10) turns to headings
- 11) stalls and recovery
- 12) spin awareness
- 13) steep turns
- 14) ground reference maneuvers
- 15) systems and equipment malfunctions
- 16) emergency procedures
- 17) traffic patterns
- 18) forward slips to landing
- 19) go-arounds from rejected landings
- 20) normal and crosswind approach and landing
- 21) PIC responsibility and authority
- 22) flight by reference to instruments

Introduce:

- 1) flight at slow airspeeds with realistic distractions

Completion standards:

- 1) Pre-solo exam completed with 80%
- 2) Demonstrate readiness for solo flight in the traffic pattern
- 3) Indicates good understanding of local airport and airspace rules, as well as systems and equipment malfunctions
- 4) Demonstrate mature PIC decision-making and authority

NEXT LESSON: #10, First solo

- *Gold Seal Online Ground School – Section 2, Lesson 6 – Your First Solo Flight*

LESSON 10 – First solo

Dual – ground: 0.3, flight: 0.5

Solo – 0.5

Objective: Student demonstrates control of airplane without assistance of on-board instructor

Discussion topics:

- 1) student questions
- 2) endorse logbook and Student Pilot Certificate

Review:

- 1) traffic pattern communications and operations
- 2) traffic pattern emergency procedures

Introduce (all solo):

- 1) radio communications
- 2) taxiing
- 3) before-takeoff check
- 4) normal takeoffs and climbs
- 5) traffic patterns
- 6) normal approaches and landings
- 7) after-landing procedures
- 8) parking and securing

Completion standards:

- 1) Student's ability to conduct a safe solo flight in the traffic pattern. At no time will the safety of flight be in question.

NEXT LESSON: #11, Stage check

Suggested student homework assignments:

- Federal Aviation Regulations on student pilot limitations (61.89)
- Federal Aviation Regulations – 61.93 (a)(i)(ii)
- *Pilots Handbook of Aeronautical Knowledge* – Chapter 7 – Flight Instruments
 - Pitot-Static flight instruments – page 7-2
 - Altimeter – pages 7-3, 11-5
 - Types of altitude – page 7-6
 - Airspeed indicator – page 7-8
 - Airspeed indicator markings – page 7-9
 - Blocked pitot system – page 7-10
 - Blocked static system – page 7-11
 - Gyroscopic flight instruments – page 7-15
 - Magnetic compass induced errors – page 7-23
 - Magnetic variation – page 15-7
 - Magnetic deviation – pages 7-24, 15-7
- *Gold Seal Online Ground School* – Section 3, Lessons 1 through 7

LESSON 11 – Stage check

Dual – ground: 0.3, flight: 1.5, simulated instrument: 0.3

Objective: Determine that the student can safely depart the traffic pattern, conduct solo flights in the practice area, and return to the airport and land with no instructor assistance.

Discussion topics:

- 1) boundaries of local practice area – FAR 61.93 (a)(i)(ii)
- 2) solo dispatch criteria; limitations placed in student's logbook

Review:

- 1) airworthiness criteria
- 2) human factors checklist
- 3) preflight procedures
- 4) runway incursion avoidance
- 5) wake turbulence avoidance
- 6) collision avoidance
- 7) normal and crosswind takeoff and climb
- 8) maneuvering during slow flight
- 9) power-off stall and recovery
- 10) power-on stall and recovery
- 11) systems and equipment malfunctions
- 12) en route emergency procedures
- 13) emergency approach and landing
- 14) traffic patterns
- 15) normal and crosswind approach and landings
- 16) go-around
- 17) post-flight procedures
- 18) forward slips
- 19) flight by reference to instruments

Completion standards:

- 1) Instructor determines if student is able to competently conduct solo flights in the practice area
- 2) Altitude within 150 feet, airspeed within 10 knots, heading within 15 degrees
- 3) Demonstrate ability to depart airport, find local practice area, and return to airport with no instructor assistance

NEXT LESSON: #12, Solo practice

Suggested student homework assignment:

- Review POH
- Research in AIM any flight operations questions that arose during solo.
- *Pilots Handbook of Aeronautical Knowledge* – Chapter 9 – Weight & Balance
 - Principles of weight & balance computations – page 9-6
 - Determining loaded weight and CG – page 9-7
- *Gold Seal Online Ground School* – Review all lessons in Sections 1, 2 & 3.
- *Gold Seal Online Ground School* – Section 5, Lesson 5 – Weight & Balance

LESSON 12 – Solo practice

Dual – ground: 0.5

Solo – 1.0

Objective: To review flight maneuvers and allow student to feel comfortable when soloing the airplane

Discussion topics:

- 1) weight and balance computations
- 2) performance computations
- 3) aeronautical decision making
- 4) PIC authority and responsibility

Review (solo):

- 1) normal and crosswind takeoff and climb
- 2) radio communications
- 3) traffic patterns
- 4) maneuvering during slow flight
- 5) steep turns
- 6) power-off stall and recovery
- 7) ground reference maneuvers
- 8) normal and crosswind approach and landing

Completion standards:

- 1) Successful flight to and return from practice area
- 2) Altitude, airspeed, heading within or approaching PTS standards

NEXT LESSON: #13, Performance takeoffs and landings.

Suggested student homework assignments:

- *Airplane Flying Handbook* – Chapter 5 – pages 8-11 – short & soft field operations
- *Airplane Flying Handbook* – Chapter 8 – pages 17-19 – short & soft field operations
- *Pilot Operating Handbook (POH)* - review procedures for short and soft-field operations
- *Pilots Handbook of Aeronautical Knowledge* – Chapter 10 – Aircraft Performance
 - Atmospheric Pressure – page 10-2
 - Pressure Altitude – page 10-3
 - Density Altitude – page 10-3
 - Takeoff Performance – page 10-13
 - Landing Performance – page 10-15
 - Performance Speeds and Charts – page 10-17
 - Takeoff Charts – page 10-19
 - Climb and Cruise Charts – page 10-20
- *Private Pilot Practical Test Standards* – begin review of basic requirement for the Private Pilot practical test.
- *Gold Seal Online Ground School* – Section 4, Lessons 1 through 6
– Section 5, Performance Charts

LESSON 13 – Performance takeoffs and landings

Dual – ground: 0.5, flight: 1.0

Objective: Introduce student to varying runway conditions and develop skill during takeoff and landing

Discussion topics:

- 1) performance computation
- 2) elements related to performance takeoffs and landings

Review:

- 1) flight at slow airspeeds with realistic distractions
- 2) recognition and recovery from low-level stalls
- 3) forward slips

Introduce:

- 1) short-field takeoff and climb
- 2) soft-field takeoff and climb
- 3) short-field approach and landing
- 4) soft-field approach and landing

Completion standards:

- 1) Student understanding of the need to use performance takeoffs and landings
- 2) Student demonstration of the correct procedure to be used under simulated or actual conditions

NEXT LESSON: #14, Solo practice

Suggested student homework assignments:

- Read the September 1996 AOPA Pilot magazine article *Skill Sharpening: A Solo Syllabus*
<http://www.aopa.org/members/files/pilot/1996/newpi9609.html>
- Read the May 10,2002 Training Tips article in the AOPA ePilot Student Newsletter: *Making the Most of Your Solo Flights*
<http://www.aopa.org/members/files/pilot/epilot/ft/2002/020510epilot.html>

LESSON 14 – Solo practice

Dual – ground: 0.2

Solo – 1.0

Objective: To increase student proficiency with solo takeoffs and landings

Discussion topics:

1) solo traffic pattern procedures

Review:

- 1) radio communications
- 2) taxiing
- 3) before-takeoff check
- 4) normal takeoff and climb
- 5) traffic patterns
- 6) normal approach and landing
- 7) after-landing procedures
- 8) parking and securing

Completion standards:

- 1) Use of correct takeoff techniques. Rotation speed within 5 knots
- 2) Stabilized approach to landing. Final approach speed within 5 knots
- 3) Smooth landing within 300 feet of desired touchdown location
- 4) Judgment—executes go-around if necessary

NEXT LESSON: #15, Navigation

Suggested student homework assignments:

- *Aeronautical Information Manual* – Chapter 3 – Airspace
- *VFR Chart Legend*
- *Aeronautical Chart Users Guide* – Section 1 – VFR Charts
- *Pilot's Handbook of Aeronautical Knowledge* – Chapter 14 - Airspace
 - Controlled Airspace – A,B,C,D,E – page 14-2
 - Uncontrolled Airspace – G – page 14-3
 - Special Use Airspace – page 14-3
 - VFR weather minimums chart – page 14-8
 - Operating rules and pilot/equipment requirements – page 14-7
- *Pilots Handbook of Aeronautical Knowledge* – Chapter 15 - Navigation
 - Aeronautical charts – page 15-2
 - Converting knots to MPH – page 15-11
 - Dead reckoning – page 15-12
 - Charting the course – pages 15-17, 15-19
 - Filing a VFR flight plan – page 15-20
 - VOR – page 15-25
 - Tracking with VOR – page 15-25
- Read the May 1997 AOPA Pilot article *Navigation Necessities*
<http://www.aopa.org/members/files/pilot/1997/mos9705.html>
- *Gold Seal Online Ground School* – Section 5, Lessons 1 through 4

LESSON 15 – Navigation

Dual – ground: 0.5, flight: 1.5, simulated instrument: 0.5

Objective: Introduction to use of aircraft's navigation systems

Discussion topics:

- 1) use of VOR system to include identification and tracking VOR signals
- 2) use of all available resources in the aircraft

Review:

- 1) performance takeoffs and landings
- 2) flight by reference to instruments

Introduce:

- 1) VOR orientation and tracking
- 2) GPS orientation and tracking
- 3) emergency descents using radio aids or radar vectors
- 4) use of airplane navigation systems in emergency situations

Completion standards:

- 1) Demonstrate basic understanding of use of aircraft navigation systems

NEXT LESSON: #16, Introduction to cross-country flying

Suggested student homework assignments:

- Read the November 7, 2003, Training Tips article in the AOPA ePilot Student Newsletter: *Checking that Checkpoint*
<http://www.aopa.org/members/files/pilot/epilot/ft/2003/031107epilot.html>.
- Study cruise performance and fuel consumption calculations as given in the performance charts in your Pilot's Operating Handbook.
- *Pilot's Handbook of Aeronautical Knowledge* – Chapter 11 –Weather Theory
 - Coriolis force – page 11-3
 - Aneroid barometer – page 11-5
 - Wind patterns – page 11-7
 - Wind shear – page 11-11
 - Temperature/Dew Point relationship – page 11-13
 - Fog and Clouds – page 11-15
 - Ceiling – page 11-17
 - Fronts – page 11-18
- *Gold Seal Online Ground School* – Section 5, Lessons 6 through 9

LESSON 16—Introduction to cross-country flight

Dual—ground: 1.0, flight: 2.0, simulated instrument: 0.5

Objective: Introduction to cross-country flying procedures to include flight planning, pilotage, and dead reckoning; diversion to an alternate airport; and lost procedures

Discussion topics:

- 1) Use of flight publications
- 2) Route selection and flight planning
- 3) Airspace rules
- 4) Weather information
- 5) Fuel requirements
- 6) Performance limitations
- 7) Navigation log
- 8) Opening and closing flight plans
- 9) Weight and balance computation
- 10) Cockpit management
- 11) Aeronautical decision making

Review:

- 1) VOR orientation and tracking
- 2) GPS orientation and tracking
- 3) Emergency procedures
- 4) Flight by reference to instruments

Introduce:

- 1) Setting cruise power and fuel mixture
- 2) Estimating in-flight visibility
- 3) Computing groundspeed, ETA, and fuel consumption
- 4) Obtaining in-flight weather information
- 5) Operations at unfamiliar airports
- 6) Position fix by navigation facilities
- 7) Use of Approach Control and Departure Control – Flight Following

Completion standards:

- 1) Demonstrate the skill to control the aircraft during a cross-country flight and make necessary corrections to ensure proper course
- 2) Arrive at ETA within 3 minutes (recalculating groundspeed based on changed winds, if necessary)

NEXT LESSON: #17, Introduction to night flight

Suggested student homework assignments:

- *Gold Seal Online Ground School* – Section 5, Lesson 5 – Night Flight
- Read “Flying’s Forgotten 5 Percent,” an article on night flying from the September 2004 *AOPA Flight Training* available online
http://flighttraining.aopa.org/magazine/2004/September/200409_Features_Flyings_forgot_ten_5%25.html

LESSON 17 – Introduction to Night Flight

Dual – ground: 1.0, flight: 1.0

Objective: Introduce the student to the basics of and preparations for flying at night.

Discussion topics:

- 1) preparation techniques for night flying
- 2) visual illusions
- 3) night scanning techniques and collision avoidance
- 4) night flying regulations
- 5) airport lighting

Introduce (night flight):

- 1) normal and crosswind takeoff and climb
- 2) power-off stalls and recovery
- 3) power-on stalls and recovery
- 4) steep turns
- 5) maneuvering during slow flight
- 6) VFR navigation
- 7) normal and crosswind approach and landing
- 8) emergency procedures

Completion standards:

- 1) Complete five takeoffs and landings at night under varying conditions (landing light off, runway lights off)
- 2) Demonstration of ability to return to airport using all available resources
- 3) Altitude within 150 feet, airspeed within 10 knots, heading within 10 degrees

NEXT LESSON: #18, Night cross-country flying

Suggested student homework assignments:

- Read the January 2001 AOPA Pilot article *Into the Heart of Darkness*
<http://www.aopa.org/members/files/pilot/2001/ounce0101.html>.
- Federal Aviation Regulations – 61.87 (o)(1,2,3)

LESSON 18 – Night cross-country flight

Dual: - ground: 1.0, flight: 2.0, simulated instrument: 0.5

Objective: Introduce student to basics of navigation at night, and help to prepare the student for solo cross-country flight

Discussion topics:

- 1) sectional charts
- 2) flight publications
- 3) route selection and basic navigation procedures
- 4) weather information
- 5) fuel and performance requirements
- 6) weight and balance
- 7) navigation log
- 8) FAA flight plan
- 9) cockpit management
- 10) aeronautical decision making
- 11) aeromedical factors
- 12) night VFR fuel requirements

Review:

- 1) emergency operations
- 2) lost procedures
- 3) night operations

Completion standards:

- 1) Demonstrate ability to safely perform a cross-country flight as the sole occupant of the airplane
- 2) Demonstrate complete flight planning skills
- 3) Altitude within 100 feet, airspeed within 10 knots, heading within 10 degrees

NEXT LESSON: #19, Solo cross-country

Suggested student homework assignments:

- Read the AOPA Air Safety Foundation's Safety Advisor: *Do the Right Thing: Decision Making for Pilots* http://flighttrainmonroe.com/uploads/Decision_Making_for_Pilots.pdf
- Read the January 27, 2006 ePilot Student Newsletter's Training Tips article "Solo Limitations." <http://www.aopa.org/members/files/pilot/epilot/ft/2006/060127epilot.html>
- Practice obtaining weather briefings and making go/no-go decisions based on the information provided
- *Gold Seal Online Ground School* – Review all lessons – Sections 1 through 5

LESSON 19 – Solo cross-country

Dual – ground: 0.5

Solo – 2.5

Objective: Use of previously gained knowledge to complete a solo cross-country flight

Discussion topics:

- 1) solo cross-country briefing
- 2) required documents and endorsements
- 3) determining performance and weight and balance
- 4) basic VFR weather minimums
- 5) airspace rules
- 6) en route communications
- 7) ATC services
- 8) En route weather information
- 9) lost procedures
- 10) emergency operations
- 11) diversions
- 12) ATC light signals
- 13) aeronautical decision making
- 14) cockpit management

Review:

- 1) computing groundspeed, ETA, and fuel requirements
- 2) use of dead reckoning
- 3) VOR interception and tracking
- 4) use of navigation log
- 5) filing and opening and closing FAA flight plan

Completion standards:

- 1) Demonstrate accurate planning and conduct of a solo cross-country flight using the three common methods of navigation

NEXT LESSON: #20, Long solo cross-country

Suggested student homework assignments:

- *Pilot's Handbook of Aeronautical Knowledge* – Chapter 13 – Airport Operations
 - Notices to Airmen (NOTAMS) – page 13-3
 - Runway markings – page 13-4
 - Taxiway markings – page 13-5
 - Airport signs and lighting – page 13-6
 - Wind direction indicators – page 13-10
 - Traffic patterns page 13-10
 - The Phonetic Alphabet – page 13-14
 - ATC Light Signals – page 13-15
 - Wake Turbulence and Vortex Generation – pages 13-15, 13-16
- Read the June 28, 2002 ePilot Student Newsletter's Training Tips article Unplanned Diversions <http://www.aopa.org/members/files/pilot/epilot/ft/2002/020628epilot.html>.

LESSON 20 – Long-distance solo cross-country

Dual – ground: 0.5

Solo – 3.0

Objective: Further develop solo cross-country flying skills

Discussion topics:

- 15) solo cross-country briefing
- 16) required documents and endorsements
- 17) determining performance and weight and balance
- 18) basic VFR weather minimums
- 19) airspace rules
- 20) en route communications
- 21) ATC services
- 22) En route weather information
- 23) lost procedures
- 24) emergency operations
- 25) diversions
- 26) aeronautical decision making

Review:

- 6) computing groundspeed, ETA, and fuel requirements
- 7) use of dead-reckoning
- 8) VOR interception and tracking
- 9) use of navigation log
- 10) filing and opening and closing FAA flight plan

Completion standards:

- 1) Successful flight in accordance with FAR 61.109(a)(5)(ii)

NEXT LESSON: #21, Flight test prep

Suggested student homework assignments:

- *Private Pilot Practical Test Standards* – read and review all requirements. Be sure that maneuvers will be practiced to tolerances equal to or exceeding the requirements, and to become familiar with the flight-testing process.
- *Pilots Handbook of Aeronautical Knowledge* – Chapter 12 – Aviation Weather Services
- *Pilots Handbook of Aeronautical Knowledge* – Chapter 16 – Aeromedical Factors
- Use the valuable resources of the AOPA Flight Training web site's Flight Test Prep page <http://flighttraining.aopa.org/students/flighttestprep/> to answer frequently asked questions and sharpen your knowledge.
- *Gold Seal Online Ground School* – Section 6, Lesson 1 – Written Test Preparation

LESSON 21 – Practical test preparation

Dual – ground: 0.3, flight: 1.5, simulated instrument: 0.5

Objective: Determine proficiency level

Discussion topics:

- 1) applicable performance criteria
- 2) applicable rules

Review:

- 1) minimum equipment list
- 2) cross-country flight planning
- 3) airplane logbook entries
- 4) preflight inspection
- 5) cockpit management
- 6) engine starting
- 7) radio communications
- 8) airport and runway markings and lighting
- 9) normal and crosswind taxiing
- 10) before-takeoff check
- 11) short-field takeoff and climb
- 12) soft-field takeoff and climb
- 13) navigation procedures
- 14) diversion procedures
- 15) steep turns
- 16) maneuvering during slow flight
- 17) stalls and recovery
- 18) emergency procedures
- 19) flight by reference to instruments
- 20) pilot in command authority and responsibility
- 21) cockpit resource management
- 22) aeronautical decision making
- 23) traffic patterns
- 24) short-field approach and landing
- 25) soft-field approach and landing
- 26) forward slip to landing
- 27) go-around
- 28) after-landing procedures
- 29) post-flight procedures

Completion standards:

- 1) Demonstrates mastery of designated maneuvers and knowledge items
- 2) Altitude, heading, and airspeed meet or exceed PTS standards

LESSON 22 – Solo Practical Test Preparation

Dual – ground: 0.2

Solo – 2.5

Objective: Further development of flight skills through individual practice

Discussion topics:

- 1) maneuvers and procedures in preparation for practical test

Review:

- 1) short-field takeoffs and landings
- 2) soft-field takeoffs and landings
- 3) steep turns
- 4) maneuvering during slow flight
- 5) stalls and recovery
- 6) forward slip to landing
- 7) radio communications
- 8) ground reference maneuvers

Completion standards:

- 1) Ability to perform required maneuvers to standards higher than the PTS

Suggested student homework assignments:

- Review operating speeds for your aircraft, systems information and emergency procedures in the Pilot's Operating handbook.
- *Aeronautical Chart Users Guide* – Section 1 – VFR Charts
- *Pilots Handbook of Aeronautical Knowledge* – Chapter 12 – Aviation Weather Services
 - Weather Charts: Surface Analysis, Weather Depiction, Radar Summary, Significant Weather Prog, NEXRAD – pages 12-15 through 12-22
- *Gold Seal Online Ground School* – Section 6, Lesson 2 – Secrets to Checkride Success
- Review and study Private/Commercial Oral Questions guide:
http://flighttrainmonroe.com/uploads/Private_Commercial_Oral_Questions.pdf