

Private Pilot Flight Training Guide

Central Indiana Soaring Society

This guide will lead you through your journey to becoming a glider pilot. It is an exciting and enjoyable journey with some significant milestones along the way to gauge your progress. You will quickly be able to start controlling the glider in flight. Most pilots always remember their first solo flight. Another important milestone is the Knowledge Test. And, then Private Pilot Check Ride, and your Private Pilot Glider Certificate.

This guide is organized to mix the book work with the flying which will allow you to make progress as rapidly as possible and will avoid unnecessary costs and delays in achieving your goals.

There is always the question of how much to spend on books and materials. Many good books are available and you will no doubt want to build a library as you gain experience, but you can get started with just a few. The list below is the place to start. You will need these up front for the lessons in this guide.

Reference Materials:

GFH – Glider Flying Handbook 2003

PHAK – Pilots Handbook of Aeronautical Knowledge

Blanik Super L-23 Sailplane Flight Manual

PTS – FAA Practical Test Standard Private Pilot Glider

You will need a hard copy of the GFH.

You should download and print a copy of the PTS which is available on line at:

http://www.faa.gov/training_testing/testing/airmen/test_standards/pilot/media/FAA-S-8081-22.pdf

This is also available on the website with CISS training resources at:

<http://soarindy.info/files/>

The CISS site also has copies of the Sailplane Flight Manual and the PHAK. You may just want to download these files for reference as you need them. Printed copies are optional.

The times shown in this guide are typical times. Some subjects may take more time and some may take slightly less. Your instructor wants to be certain you understand the material in a lesson before moving on, even if it is not exactly the typical time. Weather conditions may also impact plans.

Experience has shown the more often you fly, the more rapidly you will progress. Long delays between flights will require some extra time to refresh your memory.

If you fly regularly, it is reasonable to expect to take your check ride and receive your license approximately 4-8 weeks after you solo.

A frequent question is when to take the Knowledge Test. This is a difficult question, because studying for the Knowledge Test will help with your flying, and your flying will help with the Knowledge Test. Much of the preparation will be individual effort. We strongly suggest that you make time in your schedule to study and plan to complete the Knowledge Test shortly before or shortly after you solo. Your CISS Instructors will help you with preparation, even though it is not specifically covered step by step in this guide.

Do not hesitate to ask questions. The only dumb question is the one that is not asked. Your instructor has probably heard it before and will be anxious to help you understand the answer.

Enjoy your journey to becoming a pilot. It will be challenging, frustrating at times, very rewarding, and most important lots of fun.

Pre Solo Lessons

Lesson #1

Ground Instruction: 30 min.

Preflight: 15 min.

- Explain Control Functions
- Explain Instruments
- Explain Positive Exchange of Controls

Post Flight: 15 min.

- Answer Questions
- Sign Logbook

Flight Instruction: 15 min.

1 Flight

- Demonstration Flight

Lesson #2

Reading Assignment

- GFH Chapter 2, 3, 4, 7-22 Performance Maneuvers thru 7-25 Steep Turns
- PHAK Chapter 15 & 16.

Ground Instruction: 60 min.

Preflight: 40 min.

- Checklist Cockpit
- Checklist Pre-Takeoff, Pre-Landing
- Explain Effect of Controls
- Attitude Flying for Airspeed Control
- Relative Wind and Angle of Attack
- Clearing and Look before you Turn
- Explain 5 Side Effects of Turning
- Local Flying Area
- Look at Chart of Flying Area

Post Flight: 20 min.

- Fill out and explain use of Activity Log
- Answer questions
- Oral Quiz on Use of Trim
- Oral Quiz on Effect of Controls
- Oral Quiz on Turns

Flight Instruction: 30 min.

2-5 Flights

- Attitude Control for Airspeed
- Straight & Level Flying
- Turns-Left & Right
- Orientation of Flying Area
- Landing-Instructor Demo

Pre Solo Lessons

Lesson #3

Reading Assignment

- GFH Chapter 6, 7-1 thru 7-11, 7-25 Spiral Dive thru 7-26 Maneuvering at Minimum Controllable Airspeed

Ground Instruction: 60 min.

Flight Instruction: 30 min.

Preflight: 40 min.

- Preflight Inspection
- Positive Control Check
- Tow Elevator only
- Tow-Ailerons & Rudder only
- Tow-Relative Motion not Position
- Flight at Minimum Controllable Airspeed
- Review Turns – Emphasize Coordination

2-5 Flights

- Tow Elevator only
- Tow-Ailerons & Rudder only
- Flight at Minimum Controllable Airspeed
- Turns Left & Right Emphasize Coordination
- Low 'G' Sensitivity Demo / Test
- Landing Demo, Student Flies, Instructor Assists

Post Flight: 20 min.

- Activity Card & Answer questions
- Answer questions
- Oral Quiz on Minimum Controllable Airspeed

Lesson #4

Reading Assignment

- Blanik Super L-23 Sailplane Flight Manual
- GFH Chapter 5, 7-26 Stall Recognition and Recovery thru 7-38

Ground Instruction 50 min.

Flight Instruction: 30 min.

Preflight: 30 min.

- Tow All Controls
- Normal Takeoff
- Glider Performance
- L/D Effects of Wind and Sink
- Minimum Sink
- Stalls Straight Angle of Attack
- Thermaling – Centering Techniques
- Landing Checklist – Wind, Speed, Clear
- Landing Speed Calculations
- Pattern Effects of Wind – Crabs & Slips
- T.L.A.R. Landings

2-4 Flights

- Tow - All Controls
- Normal Takeoff
- Stalls Straight
- Thermaling
- Pattern – Crabs for x wind Correction
- Turns – Left & right to Headings
- 90°, 180°, 270°, 360° and Coordination
- Landing – T.L.A.R

Post Flight: 20 min.

- Activity Card & Answer questions
- Oral Quiz on Glider Performance
- Quiz on Stalls

Pre Solo Lessons

Lesson #5

Reading Assignment

- Blanik Super L-23 Sailplane Flight Manual
- GFH Chapter 10

Ground Instruction 50 min.

Preflight: 30 min.

- X - Wind Takeoff
- Tow – Normal and Low Tow
- Prop Wash & Vortices
- Turning Stalls (30° Bank)
- Load Factor Increases and Stall Speed
- Thermaling - Centering Techniques
- Wind Shear & Wind Gradient Effects
- T.L.A.R.
- Landings – Flare & Aiming Points
- Dive Brakes for Altitude Control
- Attitude for Airspeed Control

Post Flight: 20 min.

- Activity Card & Answer questions
- Oral Quiz on Turning Stalls
- Oral Quiz on Wind Shear & Wind Gradient

Flight Instruction: 30 min.

2 -4 Flights

- Tow – Low Tow
- X-Wind Takeoff
- Turns – Left & Right
- Coordination
- Thermaling
- Landings – Flare & Aiming Points
- Landing – T.L.A.R

Lesson #6

Reading Assignment

- Review FAR's Part 61 and 91
- GFH Chapter 8
- PHAK Chapter 8, 13

Ground Instruction 50 min.

Preflight: 30 min.

- Normal Tow
- Steep Turns – Load Factor Increases
- Spirals about an Area – Wind Effects
- Emergencies on Tow
- Tow Signals, Rope Break, Slack Line
- Glider Weight and Balance
- Wind Shear & Wind Gradient Effects
- X - Wind Landings
- Pattern – Effects of Lift
- Pattern – Effects of Sink
- Full Spoiler and No Spoiler Approaches
- FAR Part 61 & 91
- CISS Local Field Rules
- Airspace Rules

Post Flight: 20 min.

- Activity Card & Answer questions
- Oral Quiz on Emergencies on Tow

Flight Instruction: 30 min.

2-4 Flights

- Normal Tow
- Steep Turns
- Thermaling
- Turns Left & Right Coordination
- Landing - Accuracy
- Landing with No Spoilers
- Landing with Full Spoilers

Pre Solo Lessons

Lesson #7

Reading Assignment

- Review FAR's Part 43 and NTSB 830
- GFH Chapter 9
- Blanik Super L-23 Sailplane Flight Manual

Ground Instruction 50 min.

Preflight: 30 min.

- Box Wake on Tow
- Stalls – Shallow Turn, X - Control
- Stalls - Accelerated
- Wind Shear & Wind Gradient Effects
- X - Wind Landings
- Wind Condition Guidelines
- Accuracy Landings
- Forward Slips & Side Slips
- FAR 43 and NTSB 830

Post Flight: 20 min.

- Activity Card & Answer questions
- Oral Quiz on Weight and Balance

Flight Instruction: 30 min.

2-4 Flights

- Tow – Box Wake
- X – Control Stalls
- Accelerated Stalls
- Thermalizing
- Turns – Left & Right
- Coordination
- Landing – non std approaches

Lesson #8

Reading Assignment

- Review All Material

Ground Instruction 50 min.

Preflight: 30 min.

- Review Rope Break
- Review Downwind Landings
- Review Slack Line Recovery
- Review Steep Turns
- Review Flying at Minimum Controllable Air Speed
- Discuss FAR's Part 43 & 830
- Discuss Effects of High Winds Pattern
- Discuss Pattern Planning when too Low
- Discuss Conflicts on Runway

Post Flight: 20 min.

- Activity Card & Answer questions
- Quiz on Pattern Planning

Flight Instruction: 30 min.

2-4 Flights

- Tow Rope Break Simulation 200 ft
- Slack Line Recovery
- Flying at Minimum Controllable A/S
- Steep Turns - Coordination
- Thermalizing
- Forward Slips and Slips to Landings

Pre Solo Lessons

Lesson #9

Reading Assignment

- Pre Solo Quiz
- Blanik Super L-23 Sailplane Flight Manual

Ground Instruction 30 min.

Preflight: 30 min.

- Review Boxing Wake
- Review Tow Signals
- Review Stalls
- Discuss Spin Entry & Recovery
- Discuss Off Field Landings – No Altimeter
- Review Field Selection
- Review X – Wind Landings
- Review Accuracy Landings

Post Flight: 20 min.

- Activity Card & Answer Questions
- Quiz on Spin Entry & Recovery
- Quiz on Spiral Entry & Recovery
- Quiz on Off Field Landings

Flight Instruction: 30 min.

2-4 Flights

- Tow – Box Wake, Slack Line
- Stalls – Turning and Straight
- Tow Signals – Release ‘Now’ Signal
- Steep Turns - Coordination
- Off Field Landings – No Altimeter
- X – Wind and Accuracy Landings

Lesson #10

Ground Instruction 50 min.

Preflight: 30 min.

- Review Pre Solo Written Quiz
- Answer Questions

Post Flight: 20 min.

- Activity Card & Answer Questions
- Discuss Solo Responsibilities
- Award ‘A’ Badge
- Endorse Certificate and Logbook
- Review Post Solo Training

Flight Instruction: 30 min.

1-5 Dual Flights – 1 Solo Flight

- Tow – Box Wake, Slack Line
- Stalls – Turning and Straight
- Steep Turns – Left & Right
- Steep Turns – Left & Right Coordination
- Normal & X – Wind Landings

Note regarding Knowledge Test

At this point in your glider flight training you should have already taken the Knowledge Test, or be almost ready and planning to take it within the next 2-3 weeks.

Post Solo Lessons

- Lesson #11** Ground Training: 90 min. Review PTS
I. Preflight Preparation
 B. Task: Weather Information
 D Task: Performance and Limitations
 E. Task: Aeromedical Factors
Flight Training: 1 Dual Flight, 2 Solo Flights
 Practice turns, coordination, flight at minimum control speed, thermaling.
- Lesson #12** Ground Training: 90 min. Review PTS
I. Preflight Preparation
 A.Task: Certificates and Documents
 C. Task: Operations of Systems
II. Preflight Procedures
 A. Task: Assembly
Flight Training: 1 Dual Flight, 2 Solo Flights
 Practice boxing wake, turns, coordination, steep turns, thermaling.
- Lesson #13** Ground Training: 90 min. Review PTS
II. Preflight Procedures
 B. Task: Ground Handling
 C. Task: Preflight Inspections
 D. Task: Cockpit Management
 E. Task: Visual Signals
Flight Training: 1 Dual Flight, 2 Solo Flights
 Practice boxing wake, turns, coordination, steep turns, thermaling.
- Lesson #14** Ground Training: 90 min. Review PTS
III. Airport and Gliderport Operations
 A. Task: Radio Communications
 B. Task: Traffic Patterns
 C. Task Airport, Runway, and Taxiway Signs, Markings and Lighting
Flight Training: 1 Dual Flight, 2 Solo Flights
 Practice spirals, flight at minimum control speeds, turns, coordination, and thermaling.
- Lesson #15** Ground Training: 90 min. Review PTS
IV. Launches and Landings
 Aero Tow: Tasks A thru G
 Landings: Tasks Q thru S
Flight Training: 2 Dual Flights, 1 Solo Flight
 Practice boxing wake, slack line, steep turns, stalls, flight at minimum control speeds, spirals, turns, coordination, thermaling.
 Obtain 'B' badge.

Post Solo Lessons

Lesson #16

Ground Training: 90 min. Review PTS

- V. Performance Airspeeds
 - A. Task: Minimum Sink Airspeed
 - B. Task: Speed to Fly
- VI. Soaring Techniques
 - A. Task: Thermal Soaring
 - B. Task: Ridge and Slope Soaring
 - C. Task: Wave Soaring

Flight Training: 2 Solo Flights

Practice thermaling, turns, and coordination, Accuracy landings

Lesson #17

Ground Training: 90 min. Review PTS GFH Chapter 11

- VII. Performance Maneuvers
 - A. Task: Straight Glides
 - B. Task: Turns to Headings
 - C. Task: Steep Turns
- VIII. Navigation
 - A. Task: Flight Preparations and Planning
 - B. Task: National Airspace System

Flight Training: 2 Solo Flights

Practice thermaling, steep turns, and coordination.
Obtain 'C' badge.

Lesson #18

Ground Training: 90 min. Review PTS

- IX. Slow Flight and Stalls
 - A. Task: Maneuvering at minimum control airspeed
 - B. Task: Stall recognition and recovery
- X. Emergency Operation
 - A. Task: Simulated Off-Airport Landings
 - B. Task: Emergency Equipment and Survival Gear
- XI. Postflight Procedures
 - A. Task: After-Landing and Securing

Flight Training: 2 Solo Flights

Practice thermaling, steep turns, and coordination.

Lesson #19-21

Flight Training: 6 Solo Flights

Practice all maneuvers for license test per the PTS

Lesson #22-23

Ground Training: 3-5 hours

Evaluate all Tasks for oral exam per the PTS
Review written test results
Endorsement for license test

Flight Training: 6 Dual Flights

Evaluate all maneuvers Tasks for license test per the PTS