

# Student Guide

## Pre-Solo

### Reference Materials:

SFM – Soaring Flight Manual  
GFH – Glider Flying Handbook  
PHAK – Pilots Handbook of Aeronautical Knowledge  
PTS – FAA Practical Test Standard

### Lesson #1

Ground Instruction: 30 min.

Flight Instruction: 15 min.

Preflight: 15 min.

Explain Control Functions  
Explain Instruments

1 Flight

Demonstration Flight

Post Flight: 15 min.

Answer Questions  
Sign Logbook

Lesson #2 Reading Assignment: SFM Chapter 1, 3, 11, 12, & 14, GFH Chapter 2, 3-1 thru 3-14, 4, 7-22 thru 7-24, PHAK Chapter 15 & 16.

Ground Instruction: 60 min.

Flight Instruction: 30 min.

Preflight: 40 min.

Explain Effect of Controls  
Explain 5 Side Effects of Turning  
Look before you Turn  
Cockpit Checklist A,B,B,C,C,C,D,D,E  
Relative Wind and Angle of Attack  
Show Map of Flying Area  
Attitude Flying for Airspeed Control

2-4 Flights

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

Post Flight: 20 min.

Fill out Grading Card  
Explain use of Card  
Explain Condition Levels  
Answer Questions  
Oral Quiz on Use of Trim  
Oral Quiz on Effect of Controls  
Oral Quiz on Turns

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**Lesson #3**      Reading Assignment: Soaring Flight Manual 4, 14-4 thru 14-7, 15  
GFH Chapter 6, 7-1 thru 7-11 (Aerotow), 7-26

Ground Instruction: 60 min.

Flight Instruction: 30 min.

Preflight: 40 min.

Preflight Inspection and Positive Control Check  
Tow-Elevator only, Ailerons & Rudder only  
Tow-Relative Motion, Not Position  
Flying at Minimum Controllable Airspeeds  
Review Turns-Emphasize Coordination

2-4 Flights

Tow-Elevator only, Ailerons &  
Rudder only  
Flying at Minimum Controllable  
Airspeeds  
Turns-Left & Right-Emphasize  
Coordination  
Landing Demo. Student Flies,  
Instructor Talks

Post Flight: 20 min.

Grade Card & Answer Questions  
Oral Quiz on Minimum Controllable Airspeeds

**Lesson #4**      Reading Assignment: Soaring Flight Manual 2, 5, 6-27 thru 6-37, Glider  
Operating Manual, GFH Chapter 5, 7-26 thru 7-38

Ground Instruction: 50 min.

Flight Instruction: 30 min.

Preflight: 30 min.

Tow-All Controls  
Normal Takeoff  
Glider Performance  
1. L/D Effects of Wind and Sink  
2. 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 Flights

Tow-All Controls  
Normal Takeoff  
Stalls Straight  
Low 'G' Sensitivity – Test  
Thermaling  
Pattern – Crabs for x-wind correction  
Turns – Left & Right to Headings  
90°, 180°, 360° and Coordination  
Landing – T. L. A. R.

Post Flight: 20 min.

Grade Card & Answer Questions  
Quiz on Glider Performance  
Quiz on Stalls

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**Lesson #5**      Reading Assignment: Soaring Flight Manual 14-8 thru 14-16,  
Glider Operating Manual, GFH Chapter 10

Ground Instruction: 50 min.

Flight Instruction: 30 min.

Preflight: 30 min.

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

2 Flights

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

Post Flight: 20 min.

- Grade Card & Answer Questions
- Quiz on Turning Stalls
- Quiz on Wind Shear & Wind Gradient

**Lesson #6**      Reading Assignment: Airspace Limitations, Field Rules, Soaring Flight  
Manual 12-14 thru 12-16, Review FAR's Part 61 & 91 (see PTS guide)  
GFH Chapter 7-25&26, 8, PHAK Chapter 8, 13

Ground Instruction: 50 min.

Flight Instruction: 30 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 & Balance
- X – Wind Landings
- Pattern - Effects of Lift (No Spoiler Approach)
- Effects of Sink (Full Spoiler Approaches)

2 Flights

- Normal Tow
- Steep Turns
- Thermaling
- Turns – Left & Right Coordination
- Landing
- No Spoilers, Full Spoilers
- X – Effects

Post Flight: 20 min.

- Grade Card & Answer Questions
- Quiz on Steep Turns
- Quiz on Emergencies on Tow
- Quiz on Weight & Balance

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**Lesson #7**      Reading Assignment: Soaring Flight Manual 12-17 thru 12-19, 14-8 thru 14-16, FAR's Part 43 & 830, Glider Operating Manual, GFH Chapter 9

Ground Instruction: 50 min.

Flight Instruction: 30 min.

Preflight: 30 min.

Box Wake on Tow  
Stalls – Shallow Turn, X – Control  
Stalls – Accelerated  
FAR Part 61 & 91  
Local Field Rules  
Airspace Rules  
Wind Condition Rules  
Spot Landings  
Forward Slips and Side Slips

2 Flights

Tow – Box Wake  
X – Control Stalls  
Accelerated Stalls  
Thermaling  
Turns – Left & Right  
Coordination  
Spot Landing

Post Flight: 20 min.

Grade Card & Answer Questions  
Quiz on Boxing Wake  
Quiz on Stalling  
Quiz on FAR's and Airspace  
Quiz on Field Rules

**Lesson #8**      Reading Assignment: Review All Material

Ground Instruction: 50 min.

Flight Instruction: 30 min.

Preflight: 30 min.

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

2 Flights

Tow Rope Break Simulation 200'  
Slack Line Recovery  
Flying at Minimum Controllable A/S  
Steep Turns – Coordination  
Thermaling  
Down Wind Landings  
Forward Slips and Slips to Landings

Post Flight: 20 min.

Grade Card & Answer Questions  
Fill out Airman's Application for Student License  
Quiz on Pattern Planning  
Quiz on FAR's Part 43 & 830

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### Lesson #9    Reading Assignment: Pre-solo Quiz, Glider Operating Manual

Ground Instruction: 50 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 and Spot Landings

Post Flight: 20 min.

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

### Lesson #10

Ground Instruction: 50 min.

Preflight: 30 min.

- Administer Pre-solo Written Quiz
- Answer Questions
- Review Landings

Post Flight: 20 min.

- Grade Card & Answer Questions
- Discuss Solo Responsibilities
- Award 'A' Badge
- Review Post-solo Training
- Supervised Solos
- Dual Training

Flight Instruction: 30 min.

2 Flights

- Tow – Box Wake, Slack Line
- Stalls – Turning & Straight
- Tow Signals – Release 'Now' Signal
- Spin Entry & Recovery
- Off-Field Landings – No Altimeter
- Turns – Left & Right Coordination
- X-Wind and Spot Landings

Flight Instruction: 30 min.

2 Flights

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

First Supervised Solo – Condition 1  
Complete 'A' Badge

## Student Guide Post-Solo

**Lesson #11** Ground Training: 60 min. Review PTS (see PTS guide)

- 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: 60 min. Review PTS (see PTS guide)

- 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: 60 min. Review PTS (see PTS guide)

- 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 - Upgrade to Condition level 2  
Practice boxing wake, turns, coordination, steep turns, thermaling.

**Lesson #14** Ground Training: 60 min. Review PTS (see PTS guide)

- 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 - Upgrade to Condition level 2  
Practice spirals, flight at minimum control speeds, turns, coordination, and thermaling.

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**Lesson #15** Ground Training: 60 min. Review PTS (see PTS guide)

IV. Launches and Landings

Aero Tow: Tasks A thru G

Landings: Tasks Q thru R

Flight Training: 2 Dual Flights, 1 Solo Flight - Upgrade to Condition level 3  
Practice boxing wake, slack line, steep turns, stalls, flight at minimum control speeds, spirals, turns, coordination, thermaling. Review ground and flight procedures to solo single place sailplane. Obtain 'B' badge.

**Lesson #16** Ground Training: 60 min. Review PTS (see PTS guide)

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, spot landings

**Lesson #17** Ground Training: 60 min. Review PTS (see PTS guide) 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.

## **Student Guide** **Post-Solo**

**Lesson #18** Ground Training: 60 min. Review PTS (see PTS guide)

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

Preparation and endorsement for written test

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: 2-3 hours Review for oral exam

Review written test results

Endorsement for license test

Flight Training: 6 Dual Flights

Practice all maneuvers for license test per the PTS

### **Future Goals**

SSA Bronze Badge

FAI Silver Badge

Commercial Glider Pilot Certificate

Flight Instructor Certificate

FAI Gold Badge

FAI Diamonds

Revised 2-26-2006