

# **Sailplane Flight Training Syllabus**

**Colorado Soaring Association  
Owl Canyon Gliderport  
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## Introduction

**1. Purpose and Content:** The purpose of this syllabus is to provide a guide for both the student pilot and instructor up to and including solo. It is a guide of maneuvers and knowledge that should be mastered before solo. It also serves as a supplementary text for the student.

Each lesson is designed around three flights. Student progress and weather conditions may allow the lesson objectives to be met in only one flight.

Eight lessons and twenty-four flights may be sufficient for an exceptional student to solo. However, different learning rates, time between lessons and varying weather conditions may necessitate more flights before solo. Generally, the more frequently a student can fly, the quicker he can expect to solo. Merely completing the assigned number of flights does not necessarily mean a student is ready for his first solo flight.

**2. Study References:** The Joy of Soaring (1989 revision), your sailplane flight manual, and a current copy of the Federal Aviation Regulations containing Parts 61 & 91 are needed for use with this syllabus. Each lesson has a suggested reading assignment with review questions.

### **3. For the Student:**

In order to derive maximum benefit from each lesson, you should:

- Read the assignment and answer the questions prior to your lesson.
- Before flying, ask your instructor to review your answers and explain the maneuvers, techniques and procedures to be covered in your flight lesson.
- Following each flight lesson, ask your instructor to evaluate your performance. Ask him to clarify any area that you may not understand.

### **4. For the Instructor:**

- This syllabus is a guide only. You may find that more or less time is needed to cover the lesson objectives and meet lesson standards.
- The primary objective of this syllabus is to train the student to minimum safe solo standards.
- The student is not considered trained to handle all weather conditions.
- The student will normally be soloed in calm conditions or conditions that he has demonstrated he is able to handle safely.
- Soaring techniques are not covered as part of this syllabus. If lift is available, you should introduce soaring techniques along with the other lesson objectives.
- Each lesson is designed around three flights. A lesson is complete when the standards for each lesson are met. More than one lesson can be worked on at once depending on the student's progress and ability.
- Prior to each lesson you should review the assigned questions and discuss the flight portion of the lesson. Remember, the cockpit is a very poor classroom!
- The decision to send a student solo is solely your responsibility. Completion of a set number of flights does not necessarily mean your

**student is prepared to solo. However, if your student meets all of the lesson standards and has demonstrated he can fly safely under existing conditions without prompting, he should be ready for his first solo flight.**

**A student progress checklist is included in the back. This checklist is useful for ensuring that you have covered all required maneuvers.**

**Charles T. McKinnie**

## LESSON 1: Familiarization, Pre-flight

**OBJECTIVE:** To familiarize the student with proper pre-flight preparation, signals, and use of the controls in flight; and to introduce the student to straight and level flight and turns.

- I. Pre-flight discussion
  - A. Sailplane familiarization
  - B. Pre-flight inspection
  - C. Cockpit orientation
  - D. Control effects
  - E. Yaw string interpretation
  - F. Signals & pre-takeoff checklist
  - G. Ground-handling procedures & wingrunning

### II. Take-off, tow, release

Instructor demonstrates.  
Student follows through on controls.

### III. Airwork

- A. Aircraft stability
- B. Control use & effects
- C. Straight & level flight
- D. Adverse yaw
- E. Gentle turns with 90° & 180° heading changes
- F. Importance of clearing turns

Instructor demonstrates and explains the use of elevator for pitch control, ailerons for roll, and rudder for yaw. Instructor also demonstrates the use of controls in gentle turns, with emphasis on coordination and maintaining airspeed control by use of horizon references. Student practices.

### IV. Pattern & landing

Instructor demonstrates.  
Student follows through on controls.

**STANDARDS:** The student should understand and be able to perform a pre-flight check. He should be comfortable and oriented in the cockpit, knowing the location and function of the controls. He should also be able to interpret basic flight instruments, especially yaw string, fly a constant heading at a constant airspeed, and make shallow to medium banked turns.

**LESSON 1**

**STUDY REFERENCES: Joy of Soaring, Part 1, Chapters 1, 2, 3, Appendix B.**

**QUESTIONS:**

1. **What is the purpose of the wing? (JOS pp. 5-7)**
2. **What is the purpose of the tail surfaces? (JOS p. 5-7)**
3. **Who has the responsibility of determining that the aircraft is in airworthy condition? (JOS p 63)**
4. **The use of a pre-take-off checklist is a must. The Joy of Soaring refers to the checklist as ABCCCD which is augmented at Owl Canyon as ABCCCDDE. What do the letters stand for? (JOS p. 15)**  
A \_\_\_\_\_  
B \_\_\_\_\_  
B \_\_\_\_\_  
C \_\_\_\_\_  
C \_\_\_\_\_  
C \_\_\_\_\_  
D \_\_\_\_\_  
D \_\_\_\_\_  
E \_\_\_\_\_
5. **What are the signals for take up slack and takeoff? (JOS Appendix B)**
6. **(a) What control causes the sailplane's nose to pitch up and down?  
(b) How is this control activated by the pilot? (JOS p. 7)**
7. **(a) What control causes the sailplane to yaw?  
(b) How is this control activated by the pilot? (JOS p. 7)**
8. **(a) What control causes the sailplane to bank?  
(b) How is this control activated by the pilot? (JOS p. 7)**
9. **Lift is a function of airspeed and \_\_\_\_\_?  
(JOS p. 6)**
10. **If a car is used to move a glider on the ground, how long should the retrieve rope be? (JOS p. 13)**
11. **Why is a short ground tow rope hazardous?**
12. **Why shouldn't a glider be turned on the ground by pulling on a wing tip?**

**Instructor's initials \_\_\_\_\_ Date \_\_\_\_\_**

## LESSON 2: Aerotow, Turns, Pattern & Landing

**OBJECTIVE:** To improve the student's ability to make coordinated turns and to introduce takeoff, aerotow, patterns, and landing.

- I. **Pre-flight discussion**
  - A. **Weak links & towline rigging**
  - B. **Proper use of controls in level flight and turns, overbanking**
  - C. **Traffic scan techniques & collision avoidance**
  - D. **Aerotow, proper position, effect of wake, common pitfalls**
  - E. **Incipient stalls**
  - F. **Instrument interpretation**
  - G. **Landing pattern checklist, location, effects of wind on pattern, terminology & speeds**
  - H. **Landing techniques including use of spoilers/dive brakes**

### II. Take-off, tow, release

Instructor explains proper takeoff technique & aerotow position, both during straight flight & turns on tow. Instructor demonstrates moving from high to low tow & effect of towplane's wake on sailplane. Student practices tow under instructor supervision.

### III. Airwork

- A. **Shallow to medium turns to specified headings, maintaining constant airspeed**
- B. **Introduction to incipient stalls**

Instructor introduces coordinated turns to specified headings with precise airspeed control, emphasizing use of yaw string; overbanking tendency; incipient stalls. Student practices.

### IV. Pattern & landing

Instructor demonstrates & student practices use of spoilers/dive brakes prior to entering pattern. Student conducts checklist and flies pattern & landing with instructor supervision.

**STANDARDS:** The student should be able to maintain a heading within +/- 10° and control airspeed +/- 5 mph in straight and level flight. Airspeed control in turns should be +/- 5 mph in 15° to 45° banks and recovery within 20° of heading. Because this airwork will continue throughout the student's training, these standards will be improved later.



**LESSON 2**

**STUDY REFERENCES: Joy of Soaring, Part 1, Chapters 2, 4, 5, & 7**

**QUESTIONS:**

1. (a) Which of the basic instruments are connected to the pitot port?  
(b) Which are connected to the static port?
2. What are the three forces acting on a glider in flight (JOS p. 6)
3. Before entering a turn, what should the pilot do? (JOS p. 16)
4. If, when entering a turn, the nose of the glider moves in the opposite direction, what is the cause? (JOS p. 10)
5. Why must back pressure be applied on the stick when entering a turn? (JOS p. 11)
6. What is the overbanking tendency? What causes it? How is this counteracted? (JOS p. 11)
7. What is a skidding turn? What is a slipping turn? How is each indicated by the yaw string? (JOS p. 18-19, 152)
8. What is the correct position in relation to the towplane for high tow position? For low tow position? (JOS p. 27-29)
9. Why is it important to remain low on takeoff until the towplane is airborne? (JOS p. 27)
10. What is the minimum towrope strength for your glider? Maximum? (JOS p. 40)
11. What is the landing checklist? (JOS p. 49)  
U \_\_\_\_\_  
S \_\_\_\_\_  
T \_\_\_\_\_  
A \_\_\_\_\_  
L \_\_\_\_\_  
L \_\_\_\_\_
12. What is the minimum pattern airspeed in your glider?
13. Why is it important to use that minimum and how is it determined? (JOS p. 50)

**Instructor's initials \_\_\_\_\_ Date \_\_\_\_\_**

**LESSON 3: Minimum Control Speed, Stalls**

**OBJECTIVE:** To introduce the student to flight at minimum control speed in level flight and turns; to teach stall recognition and recovery.

**I. Pre-flight discussion**

- A. Slow flight**
- B. Stalls, including cause, indications, recovery techniques & secondary stalls; stall speed as a function of wing loading; stall scenarios**

**II. Takeoff, tow, release**

**Student practices with emphasis on transition from high to low tow; instructor monitors.**

**III. Airwork**

**A. Slow flight**

**Instructor demonstrates reduced control effectiveness, speed control, pitch attitude. Student practices.**

**B. Stalls**

**Instructor explains & demonstrates indications of incipient stalls; i.e. 1) back stick pressure, 2) low ASI indication, 3) controls less responsive, 4) pre-stall buffet, 5) use of senses; i.e., decreased wind noise; and proper recovery techniques. Student practices.**

**C. Level flight & turns**

**Student practices with emphasis on coordination and attitude.**

**IV. Judgment and planning**

**Student clears turns without reminder. Keeps airport in sight. Instructor explains pattern planning.**

**V. Pattern & landing**

**Student practices with instructor supervising as necessary.**

**A. Use of dive brakes/spoilers for descent**

**B. Touchdown & rollout**

**STANDARDS:** The student should be able to fly the sailplane at minimum control airspeeds (within 3-5 mph of actual stall speed) in straight and level flight and in shallow turns. The student should be able to recognize the first indications of a stall from all normally anticipated flight attitudes. Stall

**recovery should be made promptly with minimum altitude loss, without resulting in a secondary stall.**

**LESSON 3**

**STUDY REFERENCES: Joy of Soaring, Part 1, Chapter 4**

**QUESTIONS:**

1. **Are the flight controls more or less effective in slow flight (flight at minimum control airspeed) than at higher speeds? (JOS p. 23)**
2. **During slow flight, is aileron drag higher or lower than at higher airspeeds? (JOS p. 9)**
3. **What causes adverse yaw? Is it more of a factor at higher speeds or lower speeds? (JOS p. 11)**
4. **What causes a stall? (JOS p. 7)**
5. **Is it true that a glider can stall at any attitude and any airspeed? What if the glider is pointed straight at the ground? (JOS pp. 7, 20-23)**
6. **How can you recognize an approaching stall? (JOS p. 20)**
7. **What is the correct recovery technique from a stall? (JOS p. 21)**
8. **How does the angle of bank affect the stalling speed? (JOS p. 11-12)**
9. **What problem might be caused by not neutralizing ailerons during a stall recovery? (JOS p. 21)**
10. **If a wing drops during a stall, which control should be used to counter it? (JOS p. 21)**
11. **Will a heavier pilot make the glider easier or harder to stall?**
12. **Wind gradient causes the glider to \_\_\_\_\_ airspeed when descending in a headwind, and to \_\_\_\_\_ airspeed when descending in a tailwind. (JOS p. 54-55)**
13. **Why is it important to fly a consistent landing pattern? (JOS p. 48)**

**Instructor's initials \_\_\_\_\_ Date \_\_\_\_\_**

## **LESSON 4: Review, Miscellaneous Maneuvers**

**OBJECTIVE:** To review all maneuvers covered with increased emphasis on takeoff and flying the tow in proper position, developing proper judgment in the pattern, and introducing accuracy landings.

- I. Pre-flight discussion**
  - A. Review takeoff & aerotow procedures, signals, “boxing” the wake**
  - B. Review & plan specific maneuvers to be covered: medium banked turns to headings, slow flight & stalls**
  - C. Review pattern & landings with emphasis on judging accuracy landings**
  - D. Discuss critical airspeeds, speed-to-fly, thermal centering, staying upwind in range of landing, glider assembly & disassembly, positive control check**
- II. Takeoff, tow, release** **Student practices takeoff, tow, and transition to high & low tow. Instructor demonstrates “boxing” the wake, and student practices.**
- III. Introduce speeds to fly** **Instructor discusses minimum sink, best glide, as well as maneuvering and redline speeds.**
- IV. Airwork** **Student practices.**
  - A. Review of stalls**
  - B. Turns**
  - C. Speed to fly**
- I. Pattern & landing** **Instructor points out aim point and spot landing judgment. Student practices.**
  - A. Judging accuracy landings**
  - B. Use of spoilers/dive brakes to control descent in accuracy landings.**

**STANDARDS:** The student should be able to make a smooth and normal liftoff, remain in proper position throughout the tow, and be able to make a proper transition from high to low tow through the wake. He should fly the pattern at the proper airspeed, maintain correct position in the pattern, and touch down in the proper attitude.

#### LESSON 4

**STUDY REFERENCES:** Joy of Soaring, Part 1, Chapters 5 & 7

#### QUESTIONS:

1. **What are the advantages of low tow position? Disadvantages? (JOS p. 27)**
2. **What should you do if the towplane rocks its wings? (JOS p. 40)**
3. **Why should you point the nose of the glider towards the outside wing of the towplane in a turn? (JOS p. 29)**
4. **What does it mean if the towplane fish-tails? (JOS p. 138)**
5. **How do you signal the tow pilot to speed up? To slow down? (JOS p. 138)**
6. **While "boxing" the wake, you may have a tendency to develop slack in the tow rope. What techniques can you use to prevent slack from occurring? (JOS p. 31-33)**
7. **What is a positive control check, and when should one be performed?**
8. **When launching without a wing runner, what is the advantage of starting with the upwind wing low? With the downwind wing low?**
9. **What does it mean if, shortly after takeoff, the towplane rudder fans rapidly back and forth? (JOS p. 138)**
10. **What is the best glide speed for your sailplane? Minimum sink? When do you use each? (JOS p. 23)**
11. **How do you modify your speed for farthest glide in a headwind? A tailwind? (JOS p. 85)**

**Instructor's initials \_\_\_\_\_ Date \_\_\_\_\_**

## LESSON 5: Steep Turns, Crabs, & Slips

**OBJECTIVE:** To introduce the student to steep turns, spirals, and precision maneuvering. To sharpen the student's judgment and precision in the pattern and landing, with emphasis on accuracy landings. To develop proficiency in the use of slips for crosswind correction. Crosswind landings will be introduced, conditions permitting.

### I. Pre-flight discussion

- A. Pattern entry and angles for accuracy approaches and landings
- B. Crosswind takeoff & landing techniques: side slip & crab, instrument inaccuracy in slip, slip vs. skid
- C. Steep turn techniques, including methods for airspeed control, (pitch attitude, increased back pressure required) and increased lead for roll-out on specified headings. 720° and 1080° spirals

### II. Takeoff, tow, release

Student practices, including transition from high to low tow and "boxing" the wake.

### III. Airwork

- A. Steep turns
- B. Forward slips
- C. Crabbing and side slips

Instructor demonstrates coordination, maintaining proper speed control, and rolling out on a specified heading. Student practices 720°, 1080° spirals. Instructor introduces and student practices slips.

### IV. Pattern & landing

Instructor demonstrates effect of wind on approach and crosswind correction techniques: side slip & crab. Student practices.

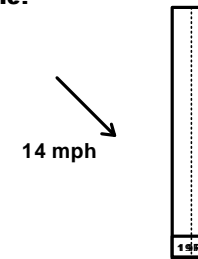
**STANDARDS:** The student should be able to perform coordinated steep spiral turns (45° bank angle), maintain airspeed within +/- 5 mph and recover within +/- 20° of a specified heading. Be able to fly the standard pattern maintaining airspeed control at +/- 5 mph. He should be able to determine wind direction and to correct for wind in the pattern. Touch down and stop should be within a 500 foot area with practice.

**LESSON 5**

**STUDY REFERENCES:** Joy of Soaring, Part 1, Chapter 7

**QUESTIONS:**

1. **Diagram a normal pattern, labeling the key legs and reference points. (JOS p. 48)**
2. **What ground references can you use to estimate wind speed and direction?**
3. **Should you increase or decrease the airspeed when landing into a 25 mph headwind? A 15 mph tailwind? Why?**
4. **How can you control the glide path on final approach to land? (JOS pp. 52)**
5. **Refer to the diagram below. What would be your approximate ground speed on a left-hand base leg? Should you begin your turn to final earlier or later than normal? Why? Sketch the glider on each leg, indicating crab angle.**



6. **What are two techniques you can use to compensate for a crosswind on the final approach? (JOS p. 55)**
7. **Is the glide ratio increased or decreased when flying into a headwind? (JOS pp. 85, 90)**
8. **Why are skidding turns more hazardous than slipping turns? (JOS p. 18-20, 24)**

**Instructor's initials \_\_\_\_\_ Date \_\_\_\_\_**



**LESSON 6: Slack Line Recovery, Spiral Dives, Spins**

**OBJECTIVE: To introduce the student to slack line recovery techniques, incipient spins, and high speed spirals, and the use of slips for glidepath control.**

- I. Pre-flight discussion**
  - A. Slack line causes and recovery techniques**
  - B. Benign spiral mode**
  - C. Incipient spins, stalls from slips & skids**
  - D. High-speed spirals, including the difference between spins and spirals**
  - E. Side slips vs forward slips**
  
- II. Takeoff, tow, release** **Student performs takeoff and tow. Instructor demonstrates slack line recovery techniques. Student practices.**
  
- III. Airwork**
  - A. Incipient spins**
  
  - B. High-speed spirals**
  
  - C. Benign spirals****Incipient spins should be performed with emphasis on proper recovery technique. Instructor demonstrates a spiral dive comparing differences with a spin. Student practices recovery. Instructor demonstrates a benign spiral. Student practices.**
  
- IV. Pattern & landing**
  - A. Forward slips****Instructor demonstrates the use of a forward slip to a landing with emphasis on how a slip can be used to control rate of descent. Student practices.**

**STANDARDS: The student should be able to recover from an incipient spin and spiral dive, recognizing the difference between the two. He should be able to perform a forward slip to a landing without increasing or decreasing approach speed. He should be able to recover from typical slack line conditions without excessive slack-tight oscillations.**

**LESSON 6**

**STUDY REFERENCES: Joy of Soaring, Part 1, Chapters 4 & 5**

**QUESTIONS:**

- 1. What can cause slack to develop in the tow line? (JOS pp. 31-32)**
- 2. What are two ways to remove slack from the tow line? (JOS p. 33)**
- 3. What causes a spin? (JOS p. 24)**
- 4. What is the proper technique to use when recovering from a spin? (JOS p. 25-26)**
- 5. Why is it important to make coordinated turns when maneuvering close to the ground? (JOS p. 18-21, 24)**
- 6. What is the purpose of a forward slip? A side slip? (JOS p. 18-20)**
- 7. How is a forward slip to the left (i.e., left wing down) accomplished? (JOS p. 19)**
- 8. In a stall situation, which would be more dangerous, a slipping turn or a skidding turn? Why? (JOS p. 18-21, 24)**
- 9. During the turn from base to final, which is the more common error, a skidding turn or a slipping turn? Why?**
- 10. Is the indicated airspeed accurate in a slip? (JOS p. 20)**
- 11. How does a spin differ from a high-speed spiral? (JOS pp. 18, 24)**
- 12. How would you enter a benign spiral? When would you want to?**

**Instructor's initials \_\_\_\_\_ Date \_\_\_\_\_**

## LESSON 7: Emergency Maneuvers

**OBJECTIVE:** To introduce the student to emergency situations that may arise and teach how to deal with them in a safe manner.

### I. Pre-flight discussion

- A. Rope break below 200' AGL and above 200' AGL
- B. Heavy lift or sink
- C. Unable to release from tow
- D. Canopy opening in flight
- E. Towplane loses power
- F. Sailplane too high on tow
- G. Sailplane too low in pattern, too high in pattern
- H. Pilot-induced oscillation & pitch sensitivity as affected by ground effect & dive brakes
- I. Dive brake failure: open, closed, asymmetric
- J. Downwind landing
- K. Distractions

### II. Takeoff, tow, release

Instructor initiates simulated rope break at or above 200' AGL. Student practices return to field and landing. Student should continue to practice slack line recoveries and recovery from unusual positions on tow.

### III. Airwork

Student practices improving techniques in weak areas.

### IV. Pattern & landing

Instructor should simulate heavy sink in pattern. Student corrects and makes landing.

**STANDARDS:** Student should be familiar with various emergency procedures and be able to correctly react to possible emergency situations. Student should consistently call out 200' and be quizzed about a plan of action above 200'.

**LESSON 7**

**STUDY REFERENCES: Joy of Soaring, Part 1, Chapter 5**

**QUESTIONS:**

- 1. What action should be taken by the tow pilot if the glider cannot release? (JOS p. 40)**
- 2. Both sailplane pilot and tow pilot are unable to release the towline. What action should be taken? (JOS p. 40)**
- 3. If you experience a rope break at 200' AGL and are high enough to return to the runway, which way should you normally turn? (JOS p. 39)**
- 4. If the rope breaks at 200' AGL and you have decided to turn and land on the field, should you turn at a low airspeed to conserve altitude or turn at a higher airspeed? (JOS p. 39)**
- 5. Should you experience a rope break at 200' AGL with a 35 mph headwind, what would be the safest course of action? (JOS p. 39)**
- 6. If you experience a rope break below 200' AGL, what action should you take? (JOS p. 39)**
- 7. If you cannot release the tow line, how do you signal the towpilot? (JOS pp. 40, 138)**
- 8. If you lose sight of the towplane, what action should you take?**
- 9. While searching for lift, you run into heavy sink. Should you increase or decrease your airspeed? Why? (JOS p. 85)**
- 10. If a canopy opens in flight, what is your first priority? What is the best way to avoid a canopy opening in flight?**
- 11. The visual cues of a downwind landing may cause a pilot to fly too \_\_\_\_\_.**

**Instructor's initials \_\_\_\_\_ Date \_\_\_\_\_**

**LESSON 8: Review and Preparation for Solo**

**OBJECTIVE: To review all previously practiced maneuvers as necessary; and to prepare the student for solo under existing conditions.**

- I. Pre-flight discussion**
  - A. Administer and grade pre-solo test**
  - B. Review logbook for entries required by FAR 61.87**
  - C. Solo limitations**
  - D. Weight and balance**
  
- II. Takeoff, tow, release** **Student practices.**
  
- III. Airwork** **Student practices maneuvers specified by instructor.**
  
- IV. Pattern entry, approach, & landing** **Student practices, making all decisions without prompting.**
  
- V. Pre-solo briefing** **Instructor briefs student, endorses student's certificate and makes logbook entry.**
  
- VI. Solo flight, conditions permitting.** **Student solos under instructor supervision.**

**STANDARDS: Prior to solo, the student should be able to consistently perform all maneuvers to standards previously covered. He should be able to safely fly the sailplane from takeoff to landing, making ALL decisions without prompting from the instructor. He should be familiar with appropriate FARs, signals, and be able to react correctly to possible emergency conditions and distractions.**

RECOMMENDED LOGBOOK ENDORSEMENTS according to Advisory Circular AC 61-65c:

1. Endorsement for pre-solo aeronautical knowledge: FAR 61.87(b)
 

Mr./Ms. \_\_\_\_\_ has satisfactorily completed a pre-solo written examination demonstrating knowledge of the portions of FAR Parts 61 and 91 applicable to student pilots, and flight characteristics and operational limitations for a (make and model of glider).

Date JJ Doe 1234567CFI-g Exp. 1-1-2020
  
2. Endorsement for pre-solo flight training: FAR 61.87(c)
 

I have given Mr./Ms. \_\_\_\_\_ the flight instruction required by FAR Section (c) in a (make and model glider). He/she has demonstrated proficiency in the applicable maneuvers and procedures listed in FAR Section 61.87(d)and (h) and is competent to make safe solo flights in a (make and model glider).

Date JJ Doe 1234567CFI-g Exp. 1-1-2020

## PRE-SOLO QUIZ

1. **What is the meaning of each of the following signals? (JOS p. 138)**
  - a) towplane rocks wings
  - b) towplane yaws from side to side
  - c) sailplane rocks wings
  - d) towplane fans rudder without yawing
  - e) sailplane yaws from side to side
2. **(a) How often must a soloed student pilot be signed off by an instructor? (FAR 61.87 (i)) (b) When should a soloed student pilot fly with an instructor?**
3. **Your instructor has endorsed the back of your student pilot certificate authorizing you to fly the 2-33 solo. Can you legally fly another type of sailplane solo without another endorsement? Why? (FAR 61.87 (i))**
4. **Are you permitted as a student pilot to fly cross-country solo? (FAR 61.93)**
5. **Does a glider on tow have the right-of-way over a glider off tow? (FAR 91.113)**
6. **Does a glider always have the right of way over powered aircraft? (FAR 91.113)**
7. **What should the breaking strength of a tow line be that is used for aerotow? If the tow line is too strong, what is required? (JOS p. 40, FAR 91.309)**
8. **Why does the tow line have a minimum and maximum breaking strength? (JOS p. 40)**
9. **When does a student pilot certificate expire? (FAR 61.19 (b))**
10. **What documents and placards are to be on board your sailplane prior to takeoff? (FAR 91.203, 91.9)**
11. **At what altitude are you required to use oxygen? (FAR 91.211)**
12. **In order to legally land at an airport with an operating control tower, what equipment must you have on board? What clearance must you obtain? (FAR 91.129)**
13. **When flying below 10,000' MSL, what distance must you remain below the clouds? (FAR 91.155)**

- 14. There are two gliders circling to the right in a thermal and you are approaching them with the intention of entering the same thermal. In which direction should you circle? (JOS p. 83)**
- 15. You are going to pass another glider. Which side should you normally pass on? (FAR 91.113 (f)) What if you were overtaking a glider in ridge lift with the ridge on your left?**
- 16. When you fly solo, are you required to carry your student pilot certificate? (FAR 61.3 (a))**
- 17. An airplane is on final approach to land and you are on your base leg landing on the same runway. Who has the right of way? (FAR 91.113 (g))**
- 18. Regarding the sailplane you are about to fly, list the following speeds:**  
**Best L/D speed** \_\_\_\_\_  
**Minimum sink speed** \_\_\_\_\_  
**Stall speed straight & level** \_\_\_\_\_  
**Maneuvering speed** \_\_\_\_\_  
**Normal pattern speed** \_\_\_\_\_  
**Never exceed/redline speed** \_\_\_\_\_  
**Maximum aerotow speed** \_\_\_\_\_  
**Maximum divebrake speed** \_\_\_\_\_
- What is the minimum solo weight for the pilot? Maximum?**
- 19. If your weight is below minimum solo weight, what can you do to bring the weight up to minimum solo weight?**
- 20. Explain the use of the speed-to-fly ring on the variometer.**
- 21. What should you do if you lose sight of the towplane while on tow?**

**Instructor's initials** \_\_\_\_\_ **Date** \_\_\_\_\_

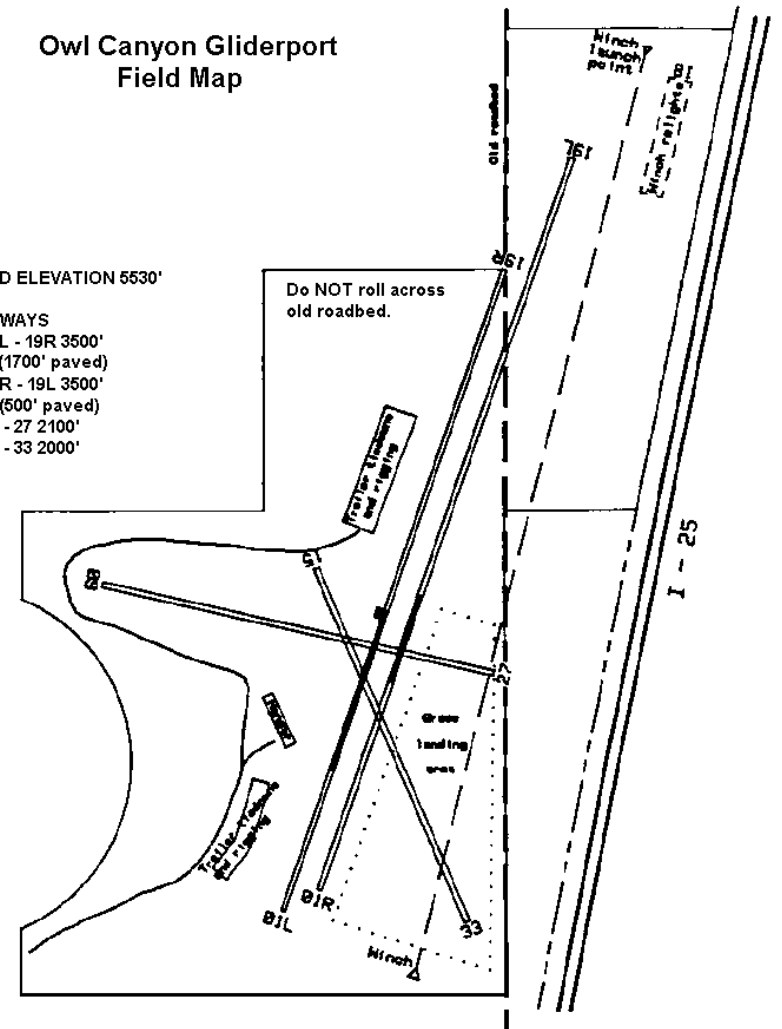
# Owl Canyon Field Map

## Owl Canyon Gliderport Field Map

FIELD ELEVATION 5530'

### RUNWAYS

- 01L - 19R 3500'  
(1700' paved)
- 01R - 19L 3500'  
(500' paved)
- 09 - 27 2100'
- 15 - 33 2000'





### Student Progress Checklist

intro-duced	prac-ticed	profi-cient	Items in italics required for solo by CSA	intro-duced	prac-ticed	profi-cient	Items in italics required for solo by CSA
LESSON 1: Familiarization, Pre-flight							
_____	_____	_____	<i>cockpit orientation</i>	_____	_____	_____	<i>turn coordination</i>
_____	_____	_____	glider manual	_____	_____	_____	<i>overbanking tendency</i>
_____	_____	_____	OAR/ARROW	_____	_____	_____	<i>elevator in turns</i>
_____	_____	_____	<i>preflight inspection</i>	_____	_____	_____	<i>medium-banked turns</i>
_____	_____	_____	<i>instrument interpretation</i>	_____	_____	_____	sequential turns
_____	_____	_____	<i>(incl yaw string)</i>	_____	_____	_____	turns to headings
_____	_____	_____	<i>pre-takeoff checklist</i>	_____	_____	_____	<i>traffic scan &amp; collision avoidance</i>
_____	_____	_____	<i>primary vs. secondary controls</i>	_____	_____	_____	<i>pre-landing checklist</i>
_____	_____	_____	<i>elevator/AOA/attitude</i>	_____	_____	_____	<i>normal pattern &amp; landing</i>
_____	_____	_____	<i>effect of ailerons</i>	_____	_____	_____	<i>pattern angles</i>
_____	_____	_____	<i>adverse yaw</i>	_____	_____	_____	<i>pattern speeds</i>
_____	_____	_____	<i>effect of rudder</i>	_____	_____	_____	<i>movement on canopy</i>
_____	_____	_____	spoilers vs. flaps	_____	_____	_____	<i>bank angles in pattern</i>
_____	_____	_____	<i>effect of spoilers</i>	_____	_____	_____	<i>quiz completed</i>
_____	_____	_____	<i>straight &amp; level flight (pitch reference)</i>	LESSON 3: Stalls			
_____	_____	_____	<i>use of trim</i>	_____	_____	_____	<i>clearing turns</i>
_____	_____	_____	<i>shallow turns</i>	_____	_____	_____	<i>slow flight</i>
_____	_____	_____	<i>hangaring</i>	_____	_____	_____	<i>indications of stall</i>
_____	_____	_____	<i>tiedowns</i>	_____	_____	_____	<i>incipient stall</i>
_____	_____	_____	<i>ground handling</i>	_____	_____	_____	<i>breaking</i>
_____	_____	_____	<i>wingrunning</i>	_____	_____	_____	<i>straight stall</i>
_____	_____	_____	<i>airport familiarization</i>	_____	_____	_____	<i>incipient stall w/ spoilers</i>
_____	_____	_____	<i>quiz completed</i>	_____	_____	_____	<i>reduced stall speed @</i>
LESSON 2: Aerotow, Turns, Landing Pattern				_____	_____	_____	<i>reduced loading (zoom)</i>
_____	_____	_____	<i>towline rigging</i>	_____	_____	_____	<i>difficulty</i>
_____	_____	_____	<i>normal takeoff</i>	_____	_____	_____	<i>stalling in well-banked turns</i>
_____	_____	_____	<i>normal tow position</i>	_____	_____	_____	<i>turning stall --</i>
_____	_____	_____	<i>release procedure</i>	_____	_____	_____	<i>thermalling turn</i>
_____	_____	_____	<i>tow position in turns</i>	_____	_____	_____	<i>turning stall --</i>
_____	_____	_____	<i>transiting the wake</i>	_____	_____	_____	<i>turn to final</i>
_____	_____	_____		_____	_____	_____	<i>secondary stall</i>
_____	_____	_____		_____	_____	_____	<i>quiz completed</i>

### Student Progress Checklist

intro-duced	prac-ticed	profi-cient	Items in italics required for solo by CSA	intro-duced	prac-ticed	profi-cient	Items in italics required for solo by CSA
<b>LESSON 4: Review &amp; Misc Maneuvers</b>							
_____	_____	_____	takeoff w/o wingrunner	_____	_____	_____	<i>crosswind pattern &amp; landing</i>
_____	_____	_____	<i>tow signals</i>	_____	_____	_____	<i>quiz completed</i>
_____	_____	_____	<i>transitioning &amp; boxing the wake</i>	<b>LESSON 6: Slack, Spins &amp; Spiral Dives</b>			
_____	_____	_____	<i>critical airspeeds</i>	_____	_____	_____	<i>slack line recovery</i>
_____	_____	_____	<i>speed to fly in lift/sink/wind</i>	_____	_____	_____	<i>forward slips for glidepath control</i>
_____	_____	_____	<i>thermal search &amp; centering</i>	_____	_____	_____	<i>stall from a skid</i>
_____	_____	_____	<i>weight &amp; balance</i>	_____	_____	_____	<i>incipient spin &amp; recovery</i>
_____	_____	_____	<i>assembly &amp; disassembly</i>	_____	_____	_____	<i>spiral dive</i>
_____	_____	_____	<i>positive control check</i>	_____	_____	_____	<i>spiral dive vs spin</i>
_____	_____	_____	accuracy landing	_____	_____	_____	<i>benign spiral mode</i>
_____	_____	_____	<i>staying upwind/within range</i>	<b>LESSON 7: Emergency Maneuvers</b>			
_____	_____	_____	<i>ground reference maneuvers</i>	_____	_____	_____	steering turns
_____	_____	_____	<i>quiz completed</i>	_____	_____	_____	<i>wave-off</i>
<b>LESSON 5: Steep Turns, Slips, &amp; Crabs</b>				_____	_____	_____	<i>simulated rope break above 300'</i>
_____	_____	_____	<i>steeply-banked turns</i>	_____	_____	_____	<i>simulated low rope break</i>
_____	_____	_____	precision turns	_____	_____	_____	PIO avoidance
_____	_____	_____	<i>crabbing (heading vs course)</i>	_____	_____	_____	<i>flare w/ spoilers fully open</i>
_____	_____	_____	<i>ASI inaccuracy in slip</i>	_____	_____	_____	<i>flare w/ spoilers fully closed</i>
_____	_____	_____	<i>side slips for crosswind correction</i>	_____	_____	_____	<i>slip to landing (spoilers won't open)</i>
_____	_____	_____	<i>slipping turns</i>	_____	_____	_____	<i>spiral to landing (spoilers won't close)</i>
_____	_____	_____	<i>slipping vs skidding turns</i>	_____	_____	_____	<i>field selection criteria</i>
_____	_____	_____	<i>stall from a slip</i>	_____	_____	_____	<i>abbreviated pattern</i>
_____	_____	_____	<i>crosswind takeoff</i>	_____	_____	_____	<i>high pattern</i>
				_____	_____	_____	<i>opposite side pattern</i>

### Student Progress Checklist

intro-duced	prac-ticed	profi-cient	Items in italics required for solo by CSA	intro-duced	prac-ticed	profi-cient	Items in italics required for solo by CSA
_____	_____	_____	<i>downwind landing</i>	_____	_____	_____	<i>release procedure</i>
_____	_____	_____	release failure	_____	_____	_____	<i>crosswind takeoffs</i>
_____	_____	_____	<b>quiz completed</b>	_____	_____	_____	<i>crosswind landings</i>
LESSON 8: Solo Stage A				_____	_____	_____	<i>release failure</i>
- daily check flight				_____	_____	_____	<b>quiz completed</b>
- low wind conditions				_____	_____	_____	
_____	_____	_____	<i>in-flight distractions</i>	Cross-Country			
_____	_____	_____	<i>pre-solo quiz</i>	_____	_____	_____	<i>map reading, pilotage &amp; dead reckoning</i>
_____	_____	_____	<i>review logbook for FAR 61.87 requirements</i>	_____	_____	_____	<i>weather recognition</i>
_____	_____	_____	<i>student license signed</i>	_____	_____	_____	<i>speed to fly</i>
_____	_____	_____	<i>logbook endorsed w/ limitations</i>	_____	_____	_____	<i>terrain considerations</i>
_____	_____	_____	<i>weight &amp; balance review</i>	_____	_____	_____	<i>instruments &amp; equipment for xc</i>
_____	_____	_____	<i>review weather limits</i>	_____	_____	_____	<i>radio usage</i>
<b>Solo Stage B: Advanced Solo</b>				_____	_____	_____	<i>short-field approach over fence w/o altimeter from 2000' AGL</i>
_____	_____	_____	high wind operations	_____	_____	_____	<i>assembly &amp; disassembly</i>
_____	_____	_____	landing over an obstacle	_____	_____	_____	<i>review of planned flight</i>
_____	_____	_____	unusual attitudes	_____	_____	_____	<i>review of airspace &amp; airport operations</i>
_____	_____	_____	precision turns	_____	_____	_____	<i>review club flight rules</i>
_____	_____	_____	airport traffic pattern	_____	_____	_____	<i>bronze badge requirements</i>
_____	_____	_____	procedures	_____	_____	_____	landing at unfamiliar field or airport
_____	_____	_____	full spin	_____	_____	_____	<b>bronze quiz completed</b>
_____	_____	_____	parachute use	_____	_____	_____	
<b>GROUND-LAUNCH</b>				_____	_____	_____	
_____	_____	_____	<i>min &amp; max airspeeds</i>	_____	_____	_____	
_____	_____	_____	<i>signals: speed</i>	_____	_____	_____	
_____	_____	_____	<i>signals: flags</i>	_____	_____	_____	
_____	_____	_____	<i>attitude/altitude tradeoff</i>	_____	_____	_____	
_____	_____	_____	<i>porpoising</i>	_____	_____	_____	
_____	_____	_____	<i>wire break below 400'</i>	_____	_____	_____	
_____	_____	_____	<i>wire break above 400'</i>	_____	_____	_____	



