



Soaring Club of Houston



SCOH Instruction Manual

Change Log

2010	Original
19 Jun 2013	Updated pre-takeoff and pre-landing checklists
20 May 2016	Changed title of document to "Instruction Manual", Added pre-flight checklist reference, changed the reference for timing of the pre-landing checklist, removed references to geographic references on downwind, removed last sentence in section on radio usage, added details on approach speed, spoiler stuck open practice permitted.
26 Aug 2017	Section 6 Removed Grob approach speed

1. Preface

a Purpose

This manual is intended to document standard practices used for instruction at the Soaring Club of Houston. It is not intended to replace familiar texts on instruction though, where there are differences, this document may prescribe one approach rather than another. Sometimes approaches may be equally good, but one is chosen over another to provide students with consistency and thus aid their training.

It is recognized that individuality in instructional style can bring great benefit to students, particularly in matters of explanation. One instructor's explanation of e.g. how a wing generates lift may resonate with a particular student whereas another does not, even though each explanation is equally valid. The intention therefore is define, where appropriate, what is taught, but not how it is taught.

2. Adherence

a “Mandatory”

This means instruction should be as described – it is Club policy. Such policy has been arrived at through discussion among a number of club instructors and referring to other recognized sources, and a consensus has been obtained that this is best practice for our Club.

b “Recommended”

This means there is a defined preference to teach the item as described, but that this is not required. However, when teaching a variant, the standard form should be explained. E.g. “This is how I want you to...”. “Other club instructors teach this instead:...”. “I prefer my method because...”.

3. Checks and Checklists

a Positive Control Checks

Mandatory: We teach that Positive Control Checks should be conducted a) before the first flight of each day b) after reassembly and c) after any maintenance.

Mandatory: We teach that each surface must be moved to full deflection and that resistance to restoration detected. We do this for both directions of each surface i.e. each aileron, each spoiler (resistance to opening and resistance to closing), the elevator and rudder.

b Release checks

Mandatory: We teach that for Tost hooks (e.g. on the Blaniks and PW-5) a release check is only required for the first flight of the day. For Schweizer hooks, e.g. on the 2-33, a release check is required before the first flight of the day.

c Pre-flight checklist

Mandatory: A written pre-flight checklist as prescribed by the POH (and provided in the glider) will be used.

d Pre-takeoff checklist

Mandatory: We teach “**ABBCCCDEF**”. A written pre-takeoff checklist as provided in the glider will be used.

Altimeter: Set to field elevation 300': includes **instruments**.

Belts: Tight and secure. Check that the passenger's are done up too and that he/she knows how to release them.

Ballast: Is ballast on board or not and is glider within weight and balance limits.

Controls: Full and free movement of stick to all four corners and rudder to the stops: include **spoilers**: deploy “open and inline” (check even both sides) “closed and locked”: **trim**, set for take-off

Cable: Good condition, no knots, correct weak link or adapter.

Canopy: Closed and locked including rear canopy. Passenger knows how to open (and avoid) emergency jettison handle.

Direction: Check wind direction and strength.

Emergencies: Think through procedures for dealing with a potential rope break.

Focus

d Pre-landing checklist

Mandatory: We teach “**FUSTALL**”

Flaps: “We don't have” or, check they are configured for landing

Undercarriage: “Fixed” or “down and locked”

Speed: Select pattern/approach airspeed

Trim: for that speed

Airbrakes: Open and check operation, not frozen, deployed evenly. Hand remains on airbrake handle from now on.

Lookout: in the pattern for other aircraft

Land: Select landing point (taking into account other landing aircraft and ground movements) and fly the pattern to land.

The pre-landing checklist should be memorized. It should be completed prior to entering downwind except for checking the Airbrakes which should be checked on downwind at a position that would allow a safe landing if they became stuck open when checked.

4. The pattern

a Variations from the ideal

Mandatory: We teach that deviations from an ideal pattern are perfectly acceptable (provided they are done safely and with consideration) and that adhering rigidly to a taught pattern may be dangerous under some circumstances (e.g. low arrival) and may demonstrate lack of “airmanship” and “situational awareness” (traffic conflicts etc).

b The Initial Points (IPs)

Figure 1, Initial Points



Mandatory: We teach that the Initial Points used at SCOH are shown in Figure 1. These are not points, but approximate areas from which the pattern should, ideally be approached. The minimum height to arrive at the IP is 1300' MSL (1,000' AGL). The purpose of the IP is to facilitate efficient traffic flow and a reference for radio calls.

c Use of the altimeter in the pattern

Recommended: Students must learn to fly the pattern without reference to the altimeter, the last altimeter reference being at the IP or latest when joining the downwind leg. It is recommended that they learn to do this by being introduced to the "That Looks About Right (TLAR)" method from the outset, judging the correct height by angle to the field and the turns to base and final also by angle - see textbook "Glider Flight Training Manual" by Thomas Knauff.

Each student should be tested on their ability to fly the pattern without reference to the altimeter by flying with the altimeter covered.

d Low final turns

Mandatory: We teach, and insist that low final turns (below 300' AGL) are not permitted.

e Radio calls in the pattern

We will teach that radio calls should be made at the IP and judiciously in the pattern. Making radio calls should not be to the detriment of flying and keeping a good lookout and should be dispensed with under "overload" conditions.

The form should be in compliance with AIM 4-2 and we use "Soaring Club of Houston" as our field name (not e.g. "Houston Gliderport"). A typical report might be "Soaring Club of Houston traffic, Blanik 4 at the IP, inbound for one seven right, number two".

5. General Flying

a Lookout

Mandatory: We teach that VFR flying relies for safety on seeing and being seen and that keeping a good lookout is essential. We teach good scanning techniques, pointing out that human eyes are have not evolved to detecting potential collision threats in the air and require training and a purposeful approach. We tell students that other pilots often do not keep a good lookout themselves.

When trainees fail to look before turning or execute a clearing turn before a maneuver we can e.g.:

- 1) hold the stick and take control, asking the trainee why they think we did that and leading to a discussion on the subject,
- 2) bang the fuselage hard and tell them that was the “other aircraft” they hit
or, if they simply look fixedly ahead
- 3) ask them if they have seen any aircraft lately

No doubt there are other ways to drive the point home.

6. Approach, Roundout and Landing

a Approach

Mandatory: We teach that low approaches over aircraft, people, vehicles and other property is bad practice for any pilot. Landing short can have far more serious consequences than at other times. At least 100' clearance should be allowed.

b Approach speed

Mandatory: If no minimum approach speed is recommended by the manufacturer, it can be calculated as 1.5 times stall speed (V_{SO}). V_{SO} is weight dependent and published for each glider. In windy conditions we teach adding half the peak wind speed, accounting for both wind shear and gusts. In order to standardize instruction and simplify student decisions regarding pattern speeds, students are encouraged to memorize the following pattern speeds for their glider. These speeds are all equal to or greater than the speeds recommended in the flight manuals or calculated as described above.

(KIAS)	Calm Wind	Light Wind	Moderate Wind	Strong Wind	Calm wind is approximately 0-3 knots. Light wind is approximately 4-10 knots. Moderate wind is approximately 11-20 knots. Strong wind is approximately 21+ knots.
Blanik L23	50	55	60	65	
ASK 21	50	55	60	65	
SGS 2-33 (mph)	50	55	60	65	

Figure 2



c Ideal landing point

Mandatory: We teach use of a displaced threshold and that, when landing to the south (runway 17), the earliest touchdown point for trainees is on a line perpendicular to the runway from the north side of the tractor shed. When landing to the north (runway 35) the earliest touchdown point is a line extends perpendicularly across the field from the south side of the PW-5 hangar. These are drawn as thick white lines on Figure 2.

Mandatory: We teach that the landing area is divided into three runways. Use of any particular runway is not mandatory – pilots should use their judgment based on the particular situation, weighing the relative risks associated with landing over gliders/tow planes and with potential conflicts with tow planes operating on the east side of the field. We teach that, having landed, pilots must continue straight ahead. Pilot should not land “across” the field.

d Roundout and landing

Mandatory: We teach students to use a near minimum energy landing on the main wheel. For the Blanik L23s especially, first touchdown on the tailwheel is to be avoided. We teach that it is difficult to avoid landing tailwheel first if full spoilers are employed during the round out. Spoilers should set to no more than half open prior to roundout and landing.

We teach judicious and skillful use of the wheel-brake; not excessively hard. We do not discourage the use of wheel brakes.

7. Emergency Procedures

a Safety first

Mandatory: We teach that an easy landing into an adjacent field is always preferable to a chancy return to SCOH. Forget the retrieve hassle.

b Decision heights and training

Mandatory: Trainees should experience a simulated (Premature Termination of Tow) PTT very early in the tow, i.e. before or immediately after takeoff. We will not simulate an early PTT at any height which might compromise the ability to make a safe landing ahead straight ahead on the runway.

Mandatory: We teach that above the altitude for a safe landing straight ahead on the runway and below the 200' decision height the procedure is to land roughly straight in a field adjacent to the airport. This is discussed but is not simulated (except in a Condor simulation).

Mandatory: We teach that for premature termination of tow (PTT) above the 200' decision altitude the most appropriate procedure (providing there is not a strong tailwind) is to turn towards the center-line to set up

for a downwind landing approach over the threshold of the departure end. Particularly in the case of significant cross-wind, this may require an initial period of flight into wind to make sufficient room for the turn onto the centerline.

Mandatory: We teach that as a very rough rule of thumb, 500' AGL height at mid-field is adequate for an abbreviated pattern landing into wind, but that judgement needs to be exercised on an individual basis.

c Faulty spoilers

Recommended: Prior to the practical test, each trainee should practice a pattern and landing made with spoilers closed. Practicing part of the pattern with the spoilers stuck completely open is also recommended but the landing does not have to be performed with the spoilers completely open.

d Landing while on tow

We will **not** practice landing while on tow.

8. Student progress

a First solo

Mandatory: The signoff instructor shall determine that the student has the necessary knowledge and training, review the pre-solo written test with the student, and make the required endorsements (e.g. aerotow) before signing him (or her) off to go solo. The student must have an endorsement for the make and model of glider on his student pilot certificate and a first "90 day" endorsement in his log-book. The student and instructor should also go through and sign the "SCOH Student Pilot Solo Requirements form and deposit it in the student folder." A second instructor must confirm, with a logbook entry, that the student is ready to solo. We follow the same procedures for transition pilots, except that different endorsements are required. Transition pilots must have a current Flight Review in an aircraft for which they are already rated prior to soloing a glider. Transition pilot solo endorsements should be limited to 90 days.

b 90 day endorsement renewals

Mandatory: In addition to checking the pilot's competency to solo, the Instructor should check that the pilot is carrying the required documentation (Photo ID, Pilot Certificate and Log Book) and that these are all current and that the log book is being correctly maintained.

c Practical Test Standards (PTS)

Mandatory: The Instructor should introduce the relevant Practical Test Standards to the student well before he/she goes solo for the first time. The document should be reviewed so that the student understands the language and requirements. As students achieve the standards required by the PTS, we tell them that they have achieved the correct standard and mark their Progress Cards accordingly.

9. Flight Reviews

Mandatory: Prior to conducting the Flight Review in accordance with FAR §61.56, the signoff Instructor shall check the Pilot's Certificate (paper version is no longer valid) and medical certificate, if relevant.