

Gliding Australia Training Manual

TRAINER GUIDE



Unit 1

Lookout Awareness

Unit 1 - Lookout Awareness

AIM

The aim of this GPC unit is to:

- Develop the primacy of effective lookout; and
- Develop the application of the basic rules of the air for collision avoidance.

PREREQUISITE UNITS

There are no prerequisite units for this GPC unit.

COMPLEMENTARY UNITS

This unit should be read in conjunction with:

- GPC Unit 9, Lookout Scan Procedures, which deals with scanning techniques, and
- GPC Unit 23, Rules of The Air (this unit will be covered later but the basic rules of the air are covered in Unit 23)

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COMPETENCY ELEMENTS AND PERFORMANCE STANDARDS

ELEMENT	PERFORMANCE STANDARDS
1. Lookout Priority	• Describe: ○ the priority of lookout to avoid collisions through see and avoid; ○ the potential collision risks in flight; ○ the use of radio for alerted see-and-avoid; ○ Situational Awareness at all times in flight; ○ the risks of excessive focus on instruments and devices.
2. Application of Lookout	• Describe: ○ the importance of checking airspace before commencing any manoeuvre. • Demonstrate: ○ the limits of vision and how to look in difficult to see airspace (above, below, behind), when turning; ○ the use the clock code to report other aircraft and identify prominent landmarks.
3. Collision Avoidance	• Describe: ○ the rules of the air applicable to aircraft safe separation; (head to head actions, give way to the right, overtaking on the right, no flying over the top of someone). • Demonstrate: ○ radio listening watch and provide an interpretation of traffic location and intentions.

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KEY MESSAGES

Lookout

- An effective lookout is the most important element of Airmanship and safety in the air.
- Lookout is our highest priority in avoiding collisions with other gliders and aircraft.
- Throughout training, the highest standards of lookout are required for every flight.

Collision Avoidance

- We use lookout in conjunction with listening to the radio to identify other aircraft that might pose a hazard; this technique is called "Alerted See and Avoid".
- Head must be kept turning and eyes focused mainly outside the cockpit.
- When flying, any sightings of other gliders and aircraft must be reported.
- An aircraft on a collision course with you will appear to be stationary, on a constant relative bearing.

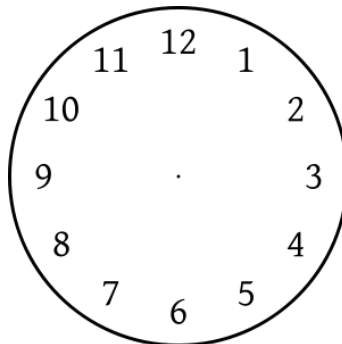
Rules of the Air.

- The student must learn and apply the Basic Rules of the Air relating to collision avoidance. see more in GPC Unit 23 – this unit will be covered later but the basic rules of the air are listed in that unit).
- The student must understand who gives way to whom.

LESSON PLANNING AND CONDUCT

CLASSROOM BRIEFING

- Explain that safety is the major priority and collision with other aircraft is by far the biggest risk.
- An effective lookout reduces this risk significantly.
- Vision is restricted by an individual's eyesight performance, dirty canopy, poor weather/haze/sun, the glider's airframe, so take actions to improve these deficiencies.
- Explain the need to look for and identify other aircraft, "Tell me whenever you see something".
- Explain the clock code:



- 12 o'clock means directly ahead, 3 o'clock means directly to the right, 6 o'clock means directly behind, and 9 o'clock means directly to the left.

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- It is further defined by high or low.
- (e.g. I see a glider at 10 o'clock, high)
- Explain the meaning of alerted see and avoid in relation to the glider radio communication.
- Explain Handover/Takeover protocol.

PRE-FLIGHT BRIEFING

Limitations of vision

With the student in the front seat, direct them to look:

- ahead (12 o'clock);
- at each wingtip;
- behind each wingtip (when turning you need to look here);
- vertically above the glider;
- down – how can you see below you?

Emphasise the need to move their head in order to see properly.

FLIGHT EXERCISES

- Direct the pilot to view specific ground features, in a range of directions – ahead, to each side, behind the wing, below them, behind them, clouds directly above.
- Make sure they are moving their head accordingly.
- Show that by turning the glider you can see places not previously visible (below and behind).
- If other aircraft are flying, ask the student to spot aircraft that you have seen. Point out where they are using the clock code.
- If the flight is long enough you can introduce GPC Unit 4, Orientation and Stability exercises.
- Let the student come on the controls with you.
- On occasions handover to the student and have them confirm taking over and handing over.
- On circuit, demonstrate the use of radio, if there is any other traffic ask them to tell you what they heard and what they see.
- Assess their ability to identify key features and lookout, situational awareness, relax in the cockpit and be able to confidently turn their head and body.

COMMON PROBLEMS

Problem	Probable Cause
● Failure to ensure positive transference of control. "You have control" "I have control".	Misunderstanding of transfer of control technique. Practice the process with the student on the ground.
● Failure to move head during lookout.	Reluctance due to disorientation or dizziness. Encourage the student to scan by moving their head rather than just shifting their eyes.

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- Tendency to look along or down wing during turns. Looking down the wing whilst turning can lead to disorientation and poor speed control.

Student fixation on the wing to control bank.

Given that the likeliest threat is along the horizon, ensure the student is focusing their scan on this with occasional targeted scans in the turn direction. This will also help to improve the pilot's speed control and coordination.

THREAT AND ERROR MANAGEMENT

- Deficiencies may be identified in a student's visual perception:
 - They may need to fly with corrective lenses.
 - A permanent neck or shoulder injury might limit head mobility and ability to scan.
 - If there is a serious visual deficiency or pilot mobility limitation, that student might never be able to fly solo.
- It is better this is checked and discovered early, rather than later in training.
- Some students with experience in other forms of aviation, or with extensive experience flying computer simulations with fixed screens may have developed poor lookout habits, including instrument panel fixation.
- The trainer must stress that every second the student fixates inside the cockpit degrades their lookout and situational awareness.
- Be careful that the trainer does not get distracted from maintaining lookout and situational awareness whilst training and observing the student.

TRAINING MATERIALS AND REFERENCES

- Theory Lesson 1
- Whiteboard or media
- Two Model Gliders
- A parked Glider
- GPC Pilot Guide Unit 1
- GFA MoSP 2 Operations
- Australian Gliding Knowledge pages 240-247
- GFA OSB 2_12 Lookout for Glider Pilots
- GFA OSB 2_14 See & Avoid for Glider Pilots