Gliding Australia Training Manual

Trainer Guide

Unit 32

Soaring with Other Gliders

Unit 32 - Soaring with Other Gliders

AIM

To train how to safely and cooperatively fly with other gliders. This requires awareness, separation and predictability.

PRE-REQUISITE UNITS

- GPC Unit 31 Thermal Entry

COMPETENCY ELEMENTS AND PERFORMANCE STANDARDS

ELEMENT	PERFORMANCE STANDARDS
1. Demonstrate situation awareness	• **Demonstrate** o Consistent lookout locating other gliders • **Recognise** o Potential conflicts such as converging headings or converging height changes o Double-blind situations • **Predict** o Intentions of other pilots
2. Maintain separation	• **Describe** o The concept of a separation bubble o How “separation priority”works • **Demonstrate** o Appropriate separation from other gliders when: o Cruising, allowing adequate space for other gliders to turn quickly without conflict o Entering a thermal o Thermaling
3. Fly predictability	• **Demonstrate** o Predictable behaviour when: o Cruising o Entering a thermal o Thermaling

Unit 32 - Soaring with Other Gliders

KEY MESSAGES

- **Lookout** is essential for awareness of other aircraft and predicting behaviour
- Separation is maintained by thinking ahead and predicting what other aircraft might do.
- If you are in another pilot's blind spot, you are responsible for giving way.
- Adopt gentle, predictable maneuvering techniques, join in with other gliders cruising or circling patterns and don't surprise anyone or burst any bubbles!

LESSON PLANNING AND CONDUCT

Briefing

Explain the concepts below and then have the student explain them to you. Personal examples from the trainer's experience may be helpful.

As it will be necessary to fly with other gliders, it would be helpful if those pilots also attended the briefing.

Awareness

Stress the importance of keeping a constant lookout to locate other aircraft and predict:

- what the other aircraft might do; and
- where conflict may occur due to converging headings or converging heights.

Separation

Explain the "bubble" concept.

Explain the principle of Separation Priority when cruising:

- Give way to anyone within a half-sphere ahead (up/down, left/right)
- You must give way to these gliders no matter how the gliders in front, or to the side, maneuver
- When overtaking make the other pilot aware (radio)
- Do not enter double-blind situations. Eg aircraft under the nose or over the tail – you can't see each other

Predictability

Explain the importance of predictability and the steps for Thermaling with other gliders below.

1. Approaching a thermal
   - FULL scan and TARGETED scan is very important as discussed in GPC Unit 31 Thermal Entry
   - Locate gliders in the thermal and identify their direction of turn.
   - Plan ahead for arrival – which gliders will you be joining in with?
   - Slow down before arriving to synchronize with the other gliders' speed. Never pull up in the core near another Thermaling glider.
2. Thermal entry
   - Join with zero potential conflict – fly around the outside of the other gliders' circle (with at least 60m separation) until an opening is available or they climb above.

3. Thermalling
    - Go with the flow – match other gliders bank angle and speed
    - Make small centring corrections when safe to do so
    - Don't turn inside other gliders
    - Note that one pilot with a small bank angle disrupts the thermal for the others who are forced to follow him/her
4. Leaving a thermal
    - Exit with a gentle roll-out after checking for potential conflict
    - If you roll to wings level (zero bank), others will assume you are leaving so don't turn back into the thermal

Flight Exercises

Flying for this unit requires reasonable thermal conditions with at least two other gliders available together to cruise and thermal with. If this is not possible then flight exercises must be delayed to another day or potentially be conducted at another site.

You should demonstrate cruising, thermal joining, Thermaling and leaving:

- Explain what is happening and what you're thinking or planning
- Ask the student what they would do
- Point out any non-compliant flying which other pilots may do (and counsel them later)

Student practice (under supervision) of cruising, thermal joining, Thermaling and leaving:

- Use several thermals until the student is consistently able to demonstrate competence in awareness, separation and predictability.
- It is essential that the student maintains a good lookout for the duration You must also keep a consistent lookout and be ready to take-over when needed.

Notes

- You (as the trainer) need to be competent when flying in relatively close proximity to other gliders. If you are uncomfortable flying near other gliders then it may be best for another trainer to train this unit.
- Student judgement of the distance to gliders and the closing rate or relative speed between gliders will take time to develop
- This exercise will be challenging for many students because they need to concentrate on what's happening outside the glider while maintaining accurate control of the glider
- Any shortcomings in glider control will need to be addressed away from the pressure of flying with other gliders before continuing with this unit

COMMON PROBLEMS

Problem	Probable Cause
• Failure to recognise potential conflicts	Poor lookout and/or spatial awareness Lack of understanding of potential conflict situations
• Failure to maintain separation	Misjudging closing speeds and geometry Incorrectly predicting behaviours of others Flying unpredictably
• Poor aircraft handling when near other gliders	Distraction and overload
• Joining a thermal by aiming at the middle on approach	Heading directly towards a glider in a thermal (the student should pick a heading when the tail of the glider is pointing directly at them and maintain that heading)
• Not maintaining position opposite another glider in a thermal	Heading at the glider ahead in the turn instead of outside the tail

THREAT AND ERROR MANAGEMENT

- The primary risk with soaring with other gliders is loss of separation and collision.
- All of the threats and associated management below applies to the conduct of the training exercise and future flying for the student. Ensure that the student understands the threat situations and appropriate management.
- Be aware that judging distance and closing speed to other aircraft is difficult, particularly for inexperienced pilots or pilots that lack currency. Plan ahead and increase margins so that judgement errors do not result in lack of separation.
- Lack of separation is likely to result from poor lookout when cruising (watch for gliders in front maneuvering and converging headings), when entering thermals, whilst Thermaling, and leaving. When entering thermals always join gliders already in the thermal from the outside of their circle and such that 60m separation is maintained. Be vigilant with a regular full scan and targeted scans before maneuvering.
- Anticipate double-blind situations and prevent the situation arising. It's too late once in the situation since separation is not visible. In the cruise, don't allow a glider to remain directly under the nose – maneuver to one side to keep the front glider visible. While Thermaling never turn inside another glider. When leaving a thermal conduct a targeted scan in the direction of exit as well as under the outboard wing.
- Unpredictable behaviour is a threat. All pilots should be predictable at all times so that other pilots can maintain separation through anticipating their actions and likely flight path. Gliders that are ahead in the cruise will expect gliders following to give way if they turn – leave enough space to do this safely. However leading gliders should not maneuver suddenly and unexpectedly, and should not rely on following gliders seeing them and giving way appropriately.