Gliding Australia Training Manual

Trainer Guide

Unit 21

Radio Use & Endorsement

AIM

The aim of this unit is to:

- Develop the skills and knowledge required to operate aircraft radio equipment during flight in the local area; and
- Ensure that the student's use of the radio conforms to CASA and GFA requirements including relevant terminology.

This Unit is a prerequisite for first solo.

PREREQUISITE UNITS

There are no prerequisite units for this GPC Unit.

COMPLEMENTARY UNITS

This unit should be read in conjunction with:

- GPC Unit 23 Basic Rules of the Air.
- GFA Unit 15 Break-off and Circuit Planning

RECOGNITION OF PRIOR LEARNING

The possession by the student of one of the following satisfy the requirements for this Unit:

- A CASA Flight Radiotelephone Operator Licence.
- An RAAus Radio Operator (R) Endorsement.
- A GFA Radiotelephone Operator's Logbook Endorsement

COMPETENCY ELEMENTS AND PERFORMANCE STANDARDS

ELEMENT	PERFORMANCE STANDARDS
1. Practical standards	• **Demonstrate:** ○ Operation of a VHF radio controls to: ● Select and change frequencies. ● Set volume & squelch levels. ● Press to transmit and use microphone. ○ How to communicate using standard phraseologies, with correct enunciation and articulation on a VHF radio. ○ Achievement of a pass grade on a practical examination on the above conducted by a GFA Level 1 or higher instructor (see Appendix 1 for Practical Exam Performance Standard). ○ Achievement of a pass grade on the Radio Telephone endorsement online theory examination.
2. English language proficiency.	• **Demonstrate:** ○ A general English Language Proficiency assessment where English is a second language of an applicant to be conducted in accordance with the requirements of GFA MOSP2, Section 15.3.

KEY MESSAGES

- The primacy of AVIATE-NAVIGATE-COMMUNICATE priorities.
- The responsibility of flight crew to see and avoid.
- The advantages of alerted see and avoid.
- How radios are used to resolve conflict and alert aircraft traffic.
- Use of standard procedures and phraseologies are essential for effective radio communication.

LESSON PLANNING AND CONDUCT

Classroom Briefing

- Pilots who do not hold a CASA private pilot licence, commercial pilot licence, multi-crew pilot licence, air transport pilot licence or a recreational pilot licence with a flight radio endorsement must obtain the above endorsement prior to flying solo.
- Describe the radio horizon and how this expands with altitude. How calls made in a local area may be received over a wide area.
- List the Radio call requirements for CTAFs referring to CASA CAAP 166 Operations in the vicinity of non-controlled aerodromes.
- Describe the use of radio frequencies in the Aeronautical Communication band.
- Pilots of aircraft with a GFA registered competition mark are permitted to use the registered competition mark as a callsign on the primary gliding frequencies or on any additional temporary gliding frequency. On all other frequencies the aircraft registration is to be used [MOSP 2 19.5.2 Competition Marks].
- Demonstrate radio procedures and terminology, including the phonetic alphabet and standard phraseology.
- Describe procedures associated with In-Flight emergencies:
    - Mayday and PAN PAN calls.
    - The International Distress Frequency.
    - The “Stop Transmitting” Call.
- Describe procedures associated with Radio failure procedures.
- Describe heterodyning (multiple stations transmitting at same time producing squealing).
- Demonstrate radio diagnostic calls and responses.
- Demonstrate operation of a VHF radio controls to:
    - Select and change frequencies.
    - Set volume & squelch levels.
    - Press to transmit.
    - Use the microphone.
- Demonstrate the correct procedure prior to transmitting such as:

  - Think about the phrasing of what you are going to say.
  - Assess microphone position.
  - Monitor the channel prior to transmitting.
  - Press the PTT button with a short pause prior to talking.
- Construct standard radio transmission, such as taxiing & takeoff (for self- launchers), and circuit calls.
- The reference document is the GFA "Airways and Radio Procedures for Glider Pilots".
- Following study of this document, an online theory examination is required which the student accesses through the Online Exams and Courses option in the Member Area of Go Membership. The student will require their GFA Number to log in and attempt the online exam..
- The practical assessment will be carried out by Level 1 or higher rated instructor, who will assess the applicant's ability to operate the controls of a VHF Radio, communicate, annunciate and articulate using the radio (where English is a second language, refer also to GFA MoSP 2 Section 15.3). The practical assessment should also test the applicant's knowledge of local procedures at the training airfield.

RADIOTELEPHONE OPERATOR AUTHORISATION

Candidates who successfully pass the online theory examination and practical assessment will have their GFA Radiotelephone Operator authorisation issued as per GPC logbook endorsements.

PRE-FLIGHT BRIEFING

Trainer points out the radio equipment fitted to the aircraft and explains the effect of and how to operate each control.

With the student seated in the cockpit, describe the optimal boom mic position and PTT operation.

FLIGHT EXERCISES

Demonstrates practically or in simulation:

- Radio procedures and terminology, including the phonetic alphabet and standard phraseology.
- Practice radio calls associated with:
  - In-Flight emergencies:
    - Mayday and PAN distress phases.
    - The Stop Transmitting Call.
  - Radio failure procedures.
  - Radio diagnostic calls and responses.
- Phrasing what you are going to say before transmitting.
- Monitoring the radio channel prior to transmitting so as not to cross transmit with other users.
- Operation of the VHF radio controls to:
  - Select and change frequencies.
  - Set volume & squelch levels.

    - Listen out before transmitting.
    - Press to transmit and to inject a short delay prior to speaking.
- Standard radio transmissions, such as taxying & take-off (for self-launchers) and circuit calls).

Student practices (under supervision):

- Radio procedures and terminology, including the phonetic alphabet and standard phraseology.
- Radio calls associated with:
    - Radio diagnostic calls and responses.
    - Taxiing & take-off (for self-launchers).
    - Circuit calls.
- The correct procedure prior to transmitting, such as phrasing what you are going to say, microphone position, listen out prior to transmitting, press PTT button prior to talk.
- Operation of a VHF radio controls to:
    - Change frequencies.
    - Set volume & squelch levels.
    - Transmit.
    - Effectively use a microphone.

Notes:

1. Ensure that the student has been given a thorough brief on the key messages prior to attempting to operate the VHF radio.
2. Ensure that the student is competent to set-up and operate all the radio controls prior to their first operation especially:
    a. Correctly setting the volume and squelch levels.
    b. Correctly setting and changing the desired active frequency.
3. Ensure that all parts of this unit are fulfilled, and the logbook endorsement has been entered before approving a first solo.

COMMON PROBLEMS

Problem	Probable Cause
Student talks too quickly.	Student may be nervous or distracted. Trainer may choose to take over flying duties to allow student to correctly use the radio.
Student fails to transmit.	Student fails to depress PTT or does not press sufficiently.
Incorrect phraseology used.	Student has not recalled correct phraseology. Practice with student on the ground using a model of airfield area prior to next flight.
Student transmission not legible by other aircraft	Student is speaking too softly or does not have the microphone correctly positioned.
Student does not respond to other calls directed to aircraft.	Student may be overloaded with flying the aircraft, leave radio use for a future lesson after sufficient skill in aircraft operation is achieved.

THREAT AND ERROR MANAGEMENT

- Poor radio configuration or damaged equipment will reduce radio effectiveness. Ensure that a full radio check has been carried out from both seats at the daily inspection or before first flight.
- Low battery voltage will affect radio operation. Check that the aircraft battery is charged sufficiently or be easily changed for a charged unit for flight operations for the day. Switch off the master switch if the aircraft is parked between sorties to preserve battery charge.
- Incorrect setting of volume and squelch may impede the trainer's reception of transmissions. Check these settings before each flight.
- Heavy radio traffic may cause distraction and difficulty in transmitting, consider rescheduling the lesson to another time.
- If the student is getting overloaded with flying and using the radio, take over the radio duties to lighten their load especially where a busy frequency is experienced (e.g., CTAF or 126.7).

TRAINING MATERIALS AND REFERENCES

- GFA MoSP 2 Operations
- CASA AIP ENR 10.1.17 Radio Calls
- CASA CAAP 166 Operations in the vicinity of non-controlled aerodromes
- GFA "Airways and Radio Procedures for Glider Pilots" Manual
- Pilot Guide GPC Unit 21
- GPC Theory Lesson 7 – Radio use and endorsement