

INTRO TO USE OF RADIO

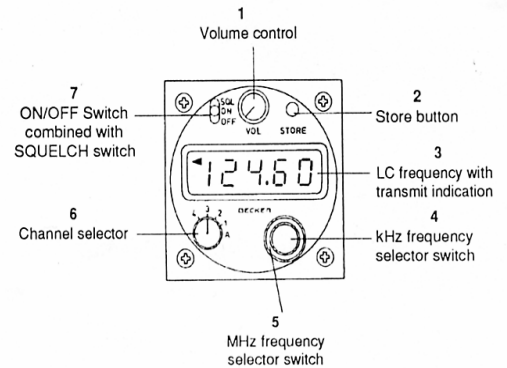
Aim: To gain an introduction to the use of radios in gliding operations.

Radios provide a usefull means of communication during gliding operations. Most gliders are fitted with modern radios that allow for effective communication with ground stations and other aircraft. During your training you will be required to use radios both in the glider and at the base of operations. This module provides some basics on how to use the radio correctly and the radio “language” used for effective radio communication.

Radios:

The radios used are many and varied but all have a few common characteristics:

- | | |
|---------------------------|---|
| <p>On / Off Switch</p> | <p>Know how the radio is powered and how to turn it on and off.</p> |
| <p>Frequency Selector</p> | <p>Know how to set the required frequency; how to preselect on some models and how to programme stored frequencies if the radio has these.</p> |
| <p>Volume</p> | <p>Know how to adjust the volume; be aware that the speaker location may make the volume different for each pilot in a two seater so adjust it so both can hear okay.</p> |
| <p>Squelch</p> | <p>This feature is used to suppress unwanted background noise / interference; know how to adjust it for best reception.</p> |



Frequencies:

The frequency to be used will depend on where you are operating and who you need to communicate with. It will usually be:
 the club’s operations base
 another glider
 Air Traffic Control (ATC)

Gliding Frequencies:

Four VHF radio frequencies have been allocated for use in gliding operations:

- (a) 133.55 MHz The primary gliding operations channel.
- (b) 134.00 MHz A general sport aviation chatter channel. Probably only used when flying with other users, e.g. hang gliders, microlights etc.
- (c) 134.45 MHz The secondary gliding operations channel.
- (d) 134.85 MHz A channel available for communications when retrieving.

Standard Words and Phrases:

Listed below is a selection of commonly used standard words and standard phrases.

Phrase	Meaning
Acknowledge	Let me know that you have received and understood this message.
Affirm	Yes.
Approved	Permission for proposed action is granted.
Break	I am making a deliberate gap / separation between portions of the message.
Cancel	Cancel the previously transmitted clearance.
Check	Examine a system or procedure. (No answer is normally expected).
Cleared	You are authorised to proceed under the conditions specified.
Confirm	Have I correctly received the following . ? or Did you correctly receive this message?
Contact	Establish radio contact with . . .
Correct	That is correct.
Correction	An error was made in the transmission or message indicated, the correct version is....
Disregard	Consider that transmission as not sent.
Go Ahead	Proceed with your message.

I say again	Repeat for clarity or emphasis.
Monitor	Listen out on (frequency).
Negative	No or Permission not granted or That is not correct.
Over	My transmission is ended, and I expect a response from you. (Not used very often).
Out	My transmission is ended, and I expect no response from you. (Not used very often).
Read Back	Repeat all, or the specified part, of this message back to me exactly as received.
Recleared	A change has been made to your last clearance and this new clearance supersedes your previous clearance or part thereof.
Report	Pass me the following information . . .
Request	I should like to know . . . or I wish to obtain . . .
Roger	I have received and understood all of your last transmission.
Say Again	"Say again all before . . . (first word satisfactorily received)" or "Say again all after . . .
Speak Slower	Reduce your rate of speech. Don't hesitate to use this if ATC speak to fast for you!
Standby	Wait and I will call you.
Verify	Check and confirm with originator.
Wilco	I understand your message and will comply with it.
"What is the readability of my transmission?"	

The readability scale is:

1. Unreadable
2. Readable now and then
3. Readable with difficulty
4. Readable
5. Perfectly readable

...Control	Area and approach control, including area and approach radar.
...Approach	Approach control where provided as a separate function.
...Tower	Aerodrome control or aerodrome and approach/area control when these services are provided jointly from an aerodrome control tower.
...Ground	Surface movement control.
...Radar	Area or approach control radar when provided on a discrete frequency for a specific purpose.
...Precision	Precision approach radar.
...Flight Service	Aerodrome flight information service.
...Information	Flight information service.
...Radio	Air-ground service.

Phoentic Alphabet:

When aircraft registrations, proper names, service abbreviations and words of which the spelling is doubtful are passed by radio, the following alphabet is used:

A	Alfa	<u>Al</u> Fah	N	November	No <u>Vem</u> Ber
B	Bravo	<u>Brah</u> <u>Voh</u>	O	Oscar	<u>Oss</u> Cah
C	Charlie	<u>Char</u> Lee (or <u>Shar</u> Lee)	P	Papa	<u>Pah</u> <u>Pah</u>
D	Delta	<u>Dell</u> Tah	Q	Quebec	Key Beck
E	Echo	<u>Eck</u> Oh	R	Romeo	<u>Row</u> Me Oh
F	Foxtrot	<u>Foks</u> Trot	S	Sierra	See <u>Airrah</u>
G	Golf	Golf	T	Tango	<u>Tang</u> Go
H	Hotel	Hoh <u>Tell</u>	U	Uniform	<u>You</u> Nee Form / <u>OO</u> Nee Form
I	India	<u>In</u> De Ah	V	Victor	<u>Vik</u> Tah
J	Juliett	<u>Jew</u> Lee <u>Ett</u>	W	Whiskey	<u>Wiss</u> key
K	Kilo	<u>Key</u> Loh	X	X-Ray	<u>Ecks</u> Ray
L	Lima	<u>Lee</u> Mah	Y	Yankee	<u>Yang</u> Key
M	Mike	Mike	Z	Zulu	<u>Zoo</u> Loo

* The Syllables to be emphasised are underlined

Numbers:

That was the alphabet... how about the numbers. When transmitting figures by radio, the following pronunciation is used:

0 - ZE-RO	5 - FIFE
1 - WUN	6 - SIX
2 - TOO	7 - SEV-en
3 - TREE	8 - AIT
4 - FOW-er	9 - NIN-er
Decimal - Day-See-Mal	Thousand – Tousand

NOTE: The syllables printed in capital letters in the above list are to be stressed.

Eg. the two syllables in ZE-RO are given emphasis, whereas the first syllable of FOW-er is given primary emphasis.

When we call out a radio frequency we say it like this:

118.1 WUN WUN AIT DAY-SEE-MAL WUN 133.55 WUN TREE TREE DAY-SEE-MAL FIFE FIFE

Calling Procedure...or What to say When Making a Radio Call:

The calling procedure for a glider attempting to establish comms with another station like glider base is as follows:

1. Designation of the station called. "Omarama Glider Base"
2. The words, "This is"
3. Designation of the station calling, "Glider Golf Oscar November"
4. If the ground station monitors several frequencies the call should give the frequency which is used, "on 133.55".

So when the frequency is clear our call would be:

"Omarama Glider Base this is Glider Golf Oscar November on 133 Decimal 55."

They will come back with a reply like: "Glider Oscar November go ahead"

You then go ahead with your message: "Omarama, Oscar November is overhead the Mt Horrible, Ops normal"

Note that once they have replied to you, you do not have to use the full callsigns.

Blind Transmissions:

No, we aren't talking in Braille!! Often we make calls as a broadcast for others to hear that they do not need to reply to. A common example will be in the circuit at our gliding site... like this:

"Omarama Traffic, Glider Victor Victor is downwind 09"... so you have told anyone else in the area where you are and that you are intending to land on vector 09 at Omarama aerodrome.

A "blind transmission" can also be made when you can not hear anyone reply but suspect they may be able to hear you. An example might be when giving a position report: "Glider Base, Glider Victor Victor transmitting blind, ops normal over Tarras at nine thousand feet"

General Radio Techniques:

The efficient use of radio depends to a large extent on the method of speaking and on the articulation of the operator. All words should be enunciated clearly and each word ended clearly to avoid running words together. Any tendency to shout, speak rapidly or raise the pitch of the voice should be avoided. On the other hand, the operator should speak firmly and with confidence into the microphone. The speed you talk at should be kept constant, neither too fast nor too slow. High pitched voices transmit better than low pitched ones. The natural rhythm of ordinary conversation should be preserved by transmitting each sentence phrase by phrase. Know how close the mike has to be to your mouth for best transmission with each type of radio / microphone installation. Avoid superfluous radio calls and bad language...and above all else... think of what you are going to say before you hit the transmit button...and take your finger off when you have finished!

Tips:

Practice the types of call you need to make with another pilot on the ground while waiting to go flying.

Need To Know:

- How to set up and use the radio in the glider and at the glider base.
- How to make radio calls for launching, ops normal and circuit joining.

Further Reading:

- Flight Radio For Pilots by Trevor Thom, Aviation Theory Centre. Good info on use of radios in aircraft.