Radiotelephony (RT) Use and Procedures

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Radiotelephony (RT) Use and Procedures

A recurring theme in reports received by ASSI is that of failure to communicate effectively, arising from mishearing, lack of clarity, poor RT standards or being at cross-purposes, any of which can lead to serious misunderstandings that may have significant safety impacts.

The purpose of this leaflet is to highlight some mitigations to reduce the risks posed by such radio issues.

Communication is not just a process of sending and receiving messages, but also a process of interpreting and ensuring the intended meaning is the one the recipient fully understands. Communication generally is complicated by an almost infinite number of factors including expectations, attitude, prejudice, history, values, beliefs, moods, likes, dislikes, etc.

With RT procedures, we place specific emphasis on the use of standard pro-words with specific meanings that are easily decoded and understood even when transmission methods might be sub-optimal. Understanding what might go wrong with communication and how to react when it does, is therefore an important part of aviation resilience.

- How will the recipient perceive, interpret, and reconstruct the information in a message?
- Has information been missed or misinterpreted?
- Are there unresolved uncertainties in the message?
- What will happen if the message is not received at all?

We all need to be sure that on receiving such messages we are clear about their meaning; if not, or there appears to be ambiguity, **ask questions.**

One of the main reasons for missed calls is that either the volume has been turned down, an incorrect frequency has been selected or the squelch is set too high.

'Squelch' is an electronic switch that mutes the receiver audio output when a very weak or no signal is received. This is designed to reduce operator fatigue from the background audio noise that would otherwise be continuously audible.

Squelch setting

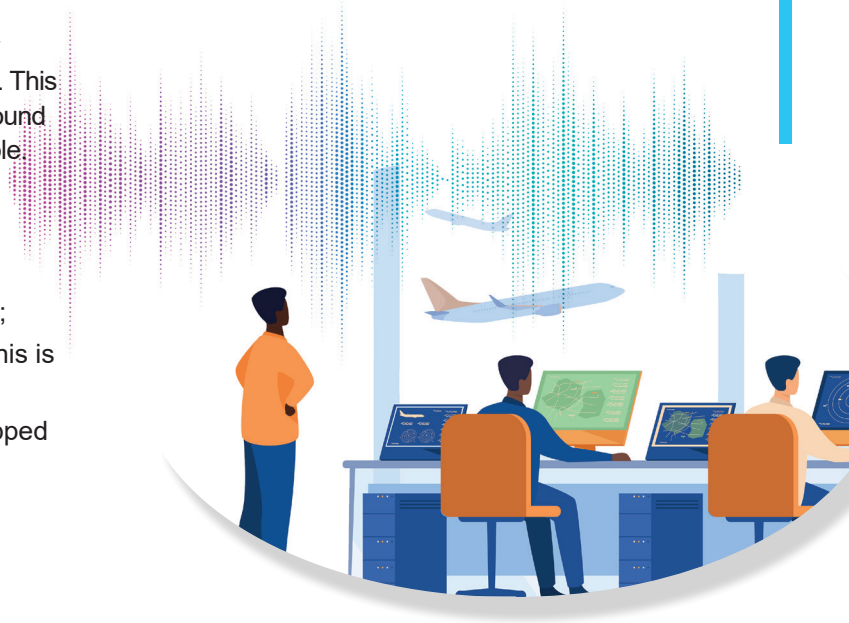
Procedure for manual squelch setting:

- set the volume control to approximately halfway;
- turn the squelch up until a 'hiss' can be heard, this is the background 'static' noise;
- turn the squelch back until the hiss has just stopped (this should occur abruptly); and
- leave the squelch control in this position.
- Incorrect setting of the squelch could lead to blanking of radio calls.

Readbacks

Standard RT phraseology and mandated readbacks for certain items, serve to reduce the number of miscommunication errors. The following items **must** be read back in their entirety if addressed to you in a transmission from an Air Traffic Service Unit (ATSU):

1. Taxi/towing instructions
2. Level instructions
3. Heading instructions
4. Speed instructions
5. Airway or enroute clearances
6. Approach clearances
7. Runway-in-use
8. Clearance to take off or land
9. Clearance to enter, backtrack, cross, or hold short of an active runway
10. Transponder instructions (squawk codes and Ident)
11. Altimeter settings (including units when the setting is below 1000 hectopascals)
12. VDF information
13. Frequency changes
14. Type of ATS service
15. Transition Levels



When speaking:

- Listen out to avoid stepping on another transmission, particularly someone's readback;
- Slow your speech down, particularly when non-local aircrew are on frequency;
- Avoid unnecessary 'filler' words such as 'this is', 'and' or 'with you' at the start of transmissions;
- Avoid using voice inflections to imply meaning, for example, to ask a question – instead use a questioning word or phrase, e.g. "Confirm descend altitude three thousand feet?";
- Avoid unnecessary chat, particularly on a busy frequency.
- Avoid 'double-clicking' the transmit switch to acknowledge an instruction.

To improve the vocal clarity of transmissions:

- Keep the microphone close to your mouth;
- Pause after pressing the transmit button;
- Speak directly into the microphone; and
- Ensure that the transmit button is firmly pressed prior to speaking and not released until you have finished.

Radio Failure

It is important to remember that VFR flight can be conducted safely without a radio – the main priority should always be to fly the aircraft.
Do not become unduly distracted by attempting to diagnose the problem. Continue to maintain an effective lookout and ensure the aircraft is on a trajectory that will remain VMC and clear of any controlled airspace.
Many apparent communication failures are caused by incorrect setting of the radios. The following procedure should allow you to determine if you are experiencing a genuine equipment failure.
If unable to establish communications on the radio:

- Check frequency selected and that you are in range of the station.
- Audio selector panel set correctly;
- Volume and Squelch correctly set;
- Microphone PTT button not stuck;
- Headset/microphone plugged in firmly – consider changing sets if possible;
- Check circuit breakers or fuses (reset only once);
- Check the station's published hours of watch;
- Change to alternative radio set (if fitted);
- Ask other aircraft in the vicinity if they are receiving you. Another aircraft may be able to provide a message relay to a station beyond transmission range;
- Try an alternative frequency, e.g another ATSU or the emergency frequency 121.5 MHZ.
- Set 7600 on the transponder.
- Maintain VMC and remain clear of controlled airspace.
- Consider whether the flight can safely be continued without a radio. For example, it may be advisable to divert to a quiet aerodrome outside controlled airspace.
- If it is possible that only the receive function has failed, state your intentions on the applicable frequency via 'blind' transmission. If only the transmit function has failed, continue to listen for any instructions or information from ATC (if applicable).
- Once overhead an aerodrome, ascertain pattern direction, watch for other traffic and any light signals from the ground. Report your landing to any relevant ATSUs as soon as possible.

Emergencies

There are two radio calls a pilot may make when experiencing a non-normal or emergency situation:

- 1. Distress. **(MAYDAY)**: A condition of being threatened by serious or imminent danger and of requiring immediate assistance.
- 2. Urgency. **(PAN PAN)**: A condition concerning the safety of an aircraft or other vehicle, or some person on board or within sight, but does not require immediate assistance.

In both cases, your emergency message should have the same content:

1. MAYDAY (repeated three times) or PAN PAN (repeated three times).
2. STATION (when appropriate if time and circumstances permitting).
3. CALLSIGN
4. TYPE of Aircraft.
5. NATURE of emergency.
6. INTENTION of pilot in command.
7. POSITION – height and heading.
8. Any other information – POB, endurance etc.

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