

Montreal Soaring Council
Club de Vol à Voile de Montréal



Radiotelephony guidebook

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This guidebook is an introduction to the techniques of radiotelephony in aviation. It is not an exhaustive instruction manual, but it includes sufficient material for making proper radio communications in the normal course of flying gliders at MSC. You will find additional information on radiotelephony in *TC AIM*, in *From the ground up*, and in *RIC-21 - Study Guide for the Radiotelephone Operator's Restricted Certificate, Aeronautical*.

Impact on safety

The accurate exchange of messages and information can be vital to the outcome of a flight. However, the noisy environment of cockpits, the imperfect nature of the radio medium, linguistic differences and other factors conspire to decrease the legibility of transmitted messages and possibly risk safety. Pilots can mitigate this risk significantly by practicing good radiotelephony technique at all times.

Language of communication

- English and French are the languages of radio communication in Canada. However, the use of French is limited to those areas specifically defined as bilingual airspace. At Hawkesbury, this includes all the airspace over the Province of Québec and the airspace within Montreal Terminal and Ottawa Terminal.
- NavCanada air traffic services, such as air traffic control and meteorological forecasts, can be obtained in French, but only at specific locations. At Hawkesbury, this includes all the facilities in the Province of Québec, plus Ottawa Terminal and Ottawa Tower.
- The language of communication is chosen by the pilot on initial contact. You should avoid changing language during the course of a communication exchange.

Frequency selection at Hawkesbury

Uncontrolled airports are often assigned an Aerodrome Traffic Frequency (ATF) for radio communications at and near the airfield. The assigned ATF, shown on maps, is to be used by all traffic operating within a specified radius and altitude of the associated airfield. The ATF for Hawkesbury (CNV4) is **123.3** MHz, for traffic operating within five (5) nautical miles of the field, at an altitude of 3200 feet ASL and below.

The Hawkesbury ATF must remain clear of any unnecessary chatter and shall be used only for communications relating to flight operations at the Hawkesbury aerodrome and

within its zone, such as circuit position reports, traffic sequencing, visual contact confirmations, emergency calls, etc.

For cross-country flights, pilot-to-pilot communications can be done on the soaring frequency **123.4** MHz, or some other mutually-agreed-upon frequency.

Proper microphone technique

- Limit your use of the frequency to messages relating to the safety, navigation and general operation of your aircraft. Avoid personal conversations.
- Listen before transmitting to avoid interference.
- Plan the content of your message and keep it clear and brief, using standard phraseology as much as possible. Avoid CB terminology, avoid long pauses, and avoid “hums”, “ahs” and the like.
- Speak directly into the microphone; pronounce your words clearly, at a moderate rate, and in a normal tone of voice.
- It is illegal to use profanities or obscenities on the frequency.

Phonetic alphabet

In order to avoid misunderstanding and risk safety, the normal alphabet has been translated by the International Civil Aviation Organization (ICAO) into a standard phonetic alphabet that assigns to each letter a specific and clearly distinguishable sound structure. This phonetic alphabet must be used at all times in radio communication. You will find a complete listing of the phonetic alphabet at the end of this guidebook.

Expressing numbers

- Numbers are expressed by stating each digit individually, but whole thousands can be grouped together with the word “thousand”, ex.:

297 = “two niner seven”
1304 = “one three zero four”
11000 = “one one thousand”

- If the number contains a decimal, the word “decimal” is included in the expression, ex.:

123.3 = “one two three decimal three”

- Altitudes are expressed in thousands and hundreds of feet (without saying the word “feet”), ex.:

an altitude of 3800 feet = “three thousand eight hundred”

- Wind speed may be expressed as a whole number (without saying the unit of measurement), ex.:

a wind of 270 degrees at 10 knots = “two seven zero at ten”

Normal message format

There are normally four parts to a radio exchange : the call-up, the reply, one or more messages, and the acknowledgment.

Call-up : “Hawkesbury Ground, this is Yankee Whisky Quebec, over”

- always name the agency you are calling first, followed by your own call-sign
- the word “Ground ” is sometimes replaced by words having the same general meaning, such as “Unicom”, “Traffic” or “Advisory”. Although the proper call-sign for an ATF is “Unicom”, the following convention shall be used by MSC aircraft operating at Hawkesbury :

- a) “Hawkesbury Traffic” : for messages intended for everyone, such as circuit position, landing intentions, etc.

Example : “Hawkesbury Traffic, Yankee Victor Quebec, left-hand downwind runway two seven”

- b) “Hawkesbury Ground” : for messages specifically addressed to the ground station (flight line trailer), such as departures times, call-backs, tow altitudes, etc.

Example : “Hawkesbury Ground, India Tango Delta, confirm my time of departure”

- use the phonetic alphabet at all times
- extra words such as “this is” and “over” may be omitted if there is no risk of confusion

Reply : “Yankee Whisky Quebec, Hawkesbury Ground, go ahead”

Message : “Hawkesbury, Yankee Whisky Quebec, say the wind”

- after the call-up, if there is no risk of confusion, you may omit naming the agency you are calling or you can abbreviate it, such as “Hawkesbury” or “Tower” or “Terminal”, as appropriate

Message : “Yankee Whisky Quebec, wind two two zero at ten”

Acknowledgment : “Yankee Whisky Quebec, roger”

- the word “roger” means “I have received and understood your message”, and this is sufficient acknowledgement
- it is not acceptable to acknowledge transmissions by clicking the microphone

Initial contact with other agencies

In radiotelephony the initial contact is slightly different from the other radio messages. This difference is especially important when dealing with agencies other than your home field (such as air traffic control agencies, private airports or other gliding clubs) as they will normally be unfamiliar with your local call-signs and aircraft types.

Call-up : “Ottawa Terminal, glider Gulf Mike Sierra Victor”

- identify the agency you are calling by its full name
- identify yourself by your type of aircraft, followed by your 4-letter call-sign
- for all gliders, use “glider” as the type of aircraft

Reply : “Glider Gulf Mike Sierra Victor, Ottawa Terminal, go ahead”

Message : “Ottawa Terminal, glider Gulf Mike Sierra Victor, requesting the altimeter setting”

- continue using the 'aircraft type + 4-letter' call-sign until it is abbreviated by the agency called

Message : "Mike Sierra Victor, Terminal, altimeter two niner niner two"

- the normal abbreviation is the 3-letter call-sign

Acknowledgment : "Mike Sierra Victor, roger"

Since we are all familiar with the aircraft flown at our club, we may dispense with this format for the initial contact when operating at our field.

Two-letter call-signs

Many gliders display what are normally called 'racing letters' (although they may include numbers), which are meant to identify the pilot flying. They have the advantage of reducing frequency congestion. In contests, these racing letters become the official call-sign of that glider in radio communications. As a result, many glider pilots have become accustomed to communicating using two-letter call-signs, using the last two letters of their complete call-signs. This variation is acceptable, if :

- 1) the use of two-letter call-signs is limited to communications between glider pilots
- 2) there is no possibility of confusion (it is not rare to have on the frequency two aircraft with the same last two letters)

Emergency messages

There are two types of emergency messages, depending on the degree of danger :

- 1) a distress message, which is used when safety is being threatened by grave danger and requires immediate assistance; the message for distress is "**mayday mayday mayday**"; this should be followed by your aircraft call-sign repeated three times, and then as much information as possible, especially your position.
- 2) an urgency message, which is used when safety is being threatened but does not require immediate assistance; the message for urgency is "**panpan panpan panpan**"; this is followed by your aircraft call-sign repeated three times, and then all the information pertaining to the urgency.

The distress message has priority over all other transmissions. All other stations must immediately cease transmissions and avoid interfering with the distress call.

The frequency **121.5** MHz is reserved internationally for emergency messages. This frequency should be used if time permits and you are uncertain that you are in range of your local (home) frequency. Its principle advantage is that, because it is monitored continuously, you are more likely to be heard everywhere.

Radio checks

The quality of a transmission is rated on a scale from 1 to 5, as follows :

1 =	unreadable	(bad)
2 =	readable now and then	(poor)
3 =	readable with difficulty	(fair)
4 =	readable	(good)
5 =	perfectly readable	(excellent)

Example : “Hawkesbury Ground, Bravo Yankee Whisky, radio check”

“Bravo Yankee Whisky, Hawkesbury, read you four”

Traffic information

Traffic information is usually given using the “clock” method. With this method, the position (direction) directly in front of you is called “twelve o’clock”, your right shoulder position is “three o’clock”, your left shoulder is “nine o’clock”, and directly behind you is “six o’clock”. For the intermediate positions, use the corresponding clock values.

Traffic information can also be given in relation to meaningful references, such as prominent landmarks, circuit legs, etc.

A message concerning traffic information should always include the word “traffic”, slightly emphasized to draw the attention of the listener(s). Include all the necessary information, but remain as brief as possible.

Example : “Delta Bravo Uniform, Victor Hotel Juliet, traffic, twelve o’clock, about one mile, floatplane, eastbound, same altitude”

Example : “X-ray Whisky November, Hawkesbury Ground, traffic, Krosno on left-hand downwind”

Words to know

Roger : “I have received and understood your message”

Over : “this is the end of the transmission” [rarely used in aviation nowadays]

Affirmative : “yes” or “that is correct”

Negative : “no” or “that is not correct”

Say again : “repeat your message”

Radio check : “confirm the quality of my transmission”

Traffic : to notify that traffic information is about to be given

Go ahead : “proceed with your message” [not : “proceed with your request”]

Standby : “wait, I will answer you in a moment”

Correction : to indicate an error in a message

Break : to separate two messages within one transmission

Confirm : to request a confirmation (or verification)

Left-hand downwind

Right-hand downwind

Left base

Right base

Final

Crosswind

Examples of messages

“Hawkesbury Ground, Yankee Victor Quebec, radio check”

“Yankee Victor Quebec, Hawkesbury, read you five”

“Hawkesbury Traffic, Mike Sierra Victor, crosswind runway zero niner, behind the Super-Blanik”

“Delta Bravo Delta, Hawkesbury, say your position”

“Hawkesbury, Delta Bravo Delta, two zero miles south”

“Yankee Victor Quebec, Hawkesbury, confirm your altitude”

“Hawkesbury, Yankee Victor Quebec, three thousand two hundred”

“Hawkesbury, Tango Romeo Sierra, confirm my time of departure”

“Tango Romeo Sierra, one three zero niner, correction, one two zero niner”

“Hawkesbury Traffic, India Foxtrot X-ray, turning left base, runway two seven”

“Echo Romeo Delta, Kilo Delta Kilo, requesting a tow over the steel mill”

“Echo Romeo Delta, roger”

“India Tango Delta, Mike November Yankee, traffic, Twin-Astir above you, advise in sight”

“India Tango Delta, looking, standby”

“India Tango Delta, traffic in sight”

“Juliet Romeo, Hotel Juliet, joining the thermal, below you,”

“Juliet Romeo, have you in sight”

“Mike Sierra Quebec, traffic, floatplane, one o’clock, about two miles, converging”

“Mike Sierra Quebec, traffic in sight”

“Cornwall Unicom, glider Foxtrot Oscar Charlie Mike, five miles north, inbound for landing, requesting traffic information”

“Alexandria Unicom, glider Gulf Alpha Uniform Lima, joining left-hand downwind, runway two five”

“Alexandria Unicom, glider Gulf Gulf India X-ray, requesting information on parachute activity”

ICAO phonetic alphabet

A	alfa	N	november
B	bravo	O	oscar
C	charlie	P	papa
D	delta	Q	quebec
E	echo	R	romeo
F	foxtrot	S	sierra
G	gulf	T	tango
H	hotel	U	uniform
I	india	V	victor
J	juliet	W	whisky
K	kilo	X	X-ray
L	lima	Y	yankee
M	mike	Z	zulu

1	wun	6	six
2	too	7	seven
3	tree	8	ate
4	fower	9	niner
5	fife	0	zero