

Radios

Radio Systems

The radios used by UNDAC are mostly analogue VHF (Very High Frequency) with a limited range (i.e., a few kilometers). The range may be extended by the use of repeaters. Special equipment and trained staff are needed to install and maintain such a system. In some areas, HF (High Frequency) radios are still being used for long-range, low-cost voice communications. During a typical UNDAC mission the use of HF radios is rare and satellite telephones, or other methods of telecommunication, are preferred.

While some UNDAC partners have migrated to digital systems for radio communications, it is important for safety and security reasons that every actor in an emergency operation uses the same radio system and procedures.

General Radio Procedures

The following is an overview of radio communication procedures that minimize radio time, make radio time more effective and reduce misinterpretation of radio messages. The UNDAC team should always follow these procedures. It is important that all users of the radio system practice strict radio discipline at all times.

- Decide on the message before transmitting.
- Be clear and brief.
- Make sure no one else is speaking before transmitting.
- Divide messages into sensible phrases with pauses where appropriate.
- Speak in a natural rhythm.
- Avoid excessive and unofficial transmissions.
- When ready to transmit, push the transmission key and wait a second before speaking. When finished transmitting wait before releasing the key.
- Use standard pronunciation and emphasize vowels. Avoid extremes of high pitch and speak in a moderately strong voice (do not shout).
- Keep a distance of about 5 cm between the microphone and your lips. Shield your microphone from background noises.
- Remember: think, push, speak.

Radio Terminology

To ease common understanding and avoid errors, generally accepted terminology is used across most of the humanitarian community. For example, the International Phonetic Alphabet (Alpha, Bravo, Charlie, etc.) is used as the basis for call signs and any time that complex spellings or information must be transmitted. It is advisable that all UNDAC members are familiar with the phonetic alphabet (see below).

In addition to the phonetic alphabet, other standard procedural words (prowords) are generally used. The following table is a list of the most common prowords and their meanings.

Proword	Meaning
ACKNOWLEDGE	Confirm that you have received my message and will comply
AFFIRMATIVE – NEGATIVE	Yes/Correct - No/Incorrect.

ALL AFTER or ALL BEFORE	Everything that you (I) transmitted after... (Keyword). Everything that you (I) transmitted before... (Keyword).
CORRECT (THAT IS CORRECT)	What you have transmitted is correct.
CORRECTION	An error has been made in this transmission. It will continue with the last word (group) correctly transmitted. An error has been made in this transmission. Correct version is... That which follows is a correct version in answer to your request for verification.
WRONG	Your last transmission was incorrect. The correct version is...
SILENCE – SILENCE – SILENCE	Cease all transmissions on this net immediately. Will be maintained until lifted.
SILENCE LIFTED	Silence is lifted. The net is free for traffic
END OF MESSAGE – OVER (OUT)	This concludes the message just transmitted (and the message instructions pertaining to a formal message).
FIGURES	Numerals or numbers will follow. In general, numbers are transmitted digit by digit except that exact multiples of hundreds and thousands are spoken as such.
OVER	This is the end of my turn of transmitting. A message is expected. Go ahead.
THROUGH ME	I am in contact with the station you are calling; I can act as a relay station.
MESSAGE PASSED TO	Your message has been passed to...
ROGER	I have received your last transmission satisfactorily.
ROGER SO FAR?	Have you received this part of my message satisfactorily?
WILCO	I have received your message, understand it, and will comply. (To be used only by the addressee.) ROGER and WILCO are never used together.
UNKNOWN STATION	The identity of the station calling or with whom I am attempting to establish communication is unknown.
WAIT (WAIT-WAIT)	I must pause for a few seconds.
WAIT – OUT	I must pause longer than some seconds and will call you again when ready.
OUT	This is the end of my transmission to you. No answer or acknowledgement is expected.
OUT TO YOU	Do not answer; I have nothing more for you. I shall now call another station on the net.
READ BACK	Repeat the entire following transmission back to me exactly as received.
I READ BACK	The following is my reply to your request to read back.
SAY AGAIN	Repeat all of your last transmission. Followed by ALL AFTER, ALL BEFORE, WORD AFTER, WORD BEFORE etc. means: Repeat... (portion indicated)
I SAY AGAIN	I am repeating my transmission or portion indicated.

SEND	Go ahead with your transmission.
SEND YOUR MESSAGE	Go ahead, transmit; I am ready to copy.
SPEAK SLOWER	Reduce the speed of your transmission.
I SPELL	I shall spell the next word, group or equivalent phonetically. (Not used when transmitting coded groups only.)

Structuring Transmissions

Using the prowords and the phonetic alphabet, transmissions are generally structured as follows:

1. ALPHA, THIS IS CHARLIE - MESSAGE, OVER
2. THIS IS ALPHA - SEND, OVER
3. THIS IS CHARLIE – WATCH FOR FALLEN ROCKS ON ROAD BIRKET – I SPELL – BRAVO, INDIA, ROMEO, KILO, ECHO, TANGO – BIRKET, OVER
4. THIS IS ALPHA - WILCO, OUT.

The following phrases are for use when initiating and answering queries concerning signal strength and readability:

- RADIO CHECK – what is my signal strength and readability; how do you read me?
- YOU ARE... or I READ YOU... – your signal strength and readability is as follows:
 - LOUD – your signal is strong
 - GOOD – your signal is good
 - WEAK – I can only hear you with difficulty
 - VERY WEAK – I can only hear you with great difficulty
 - NOTHING HEARD – I cannot hear you at all

A sample radio check is as follows:

1. ALPHA, THIS IS CHARLIE – RADIO CHECK, OVER
2. THIS IS ALPHA - YOU ARE LOUD AND READABLE, OVER
3. THIS IS CHARLIE - YOU ARE LOUD AND READABLE AS WELL, OUT.

Phonetic Alphabet

Letter	Pronunciation	Letter	Pronunciation
A	APLHA	N	NOVEMBER
B	BRAVO	O	OSCAR
C	CHARLIE	P	PAPA
D	DELTA	Q	QUEBEC
E	ECHO	R	ROMEO
F	FOXTROT	S	SIERRA
G	GOLF	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