

Best Practices for Talking over Two-Way Radio

When talking with someone face to face, we are often unaware of subconscious messages from the person speaking. That nonverbal information can help enhance the accuracy of our understanding about what that person said. According to a study, many times we understand the message with 65% nonverbal and 35% verbal information.

People frequently use one of the following physical messages to improve verbal communications: tone of speech (male or female), volume, lip movement, facial expressions, body movement, posture, gestures, eye contact, touch, distance between the speaker and the listener, and previous experience with the speaker.



Sending an email or talking over the two-way radio removes that critical nonverbal component often necessary for message clarity. As you know, good writing is a learned skill that can accurately convey a message the writer intended. Likewise, good radio talk is a learned skill necessary to enjoy a successful communication.

Because radio talk does not sound like natural speech, much of a person's personality is removed by the radio and can often distort speech. To assure your mic talk is the best it can be, guidelines about best practices are described in this document.

Radio messages can be divided into four categories:

Routine

Routine traffic has no urgency and accounts for 99% of all two-way radio talk.

Priority (has a time limit)

These can be public media dispatches and emergency traffic not of the utmost urgency but having a time limit; for example, a priority can be a notice of death or injury in a disaster area, whether personal or official.

Health & Welfare

This is an inquiry or advisory as to condition.

Emergency

Emergency has life or death urgency to a person or group of persons. This includes official messages from welfare agencies requesting supplies, materials, or instructions that are vital to relief efforts.

When in doubt, do NOT use the emergency designation!

Best practices for radio talk use the Five C's of radio communication, aka "traffic handling": Clear, Concise, Correct, Confident, and Complete.

Clear

Recognizing that what *can* go wrong *will* go wrong, make sure what you are saying cannot be misinterpreted. Use short simple sentences. Your voice should be clear. Speak a little slower than normal. Speak in a normal tone; do not shout. Do not mumble, use big words, or ramble with mumbo jumbo when a handful of common words will do. Do not speak too fast. Did you say what you meant? Instead of saying "We're getting hungry over here," say "Bring us some food!"

Instead of "We need more people here," consider saying "We need six more people capable of clearing heavy debris working in a wet and cold environment."

Confusing: a D sounding like a V, a P sounding like a B, a G like a C, an E like a T, an F like an X, a K like a J or even like an A, an M like an N

Confusing: "That is mine" sounding like "That is mined" or like "That is nine"
Phonetically, the word "NINE er" is used to minimize confusion.

Confusing: "Send Paul" sounding like "Send all"

Concise

Stick to your point and do not confuse the message with irrelevant information. Do not beat around the bush and do not wander off message.

Correct

Is the information factually accurate? If estimates are the best you have, say that. Poor grammar or sentence structure can undermine confidence.

Avoid judgmental information.

Do not transmit confidential information on a radio unless you know the proper security technology is in place. Remember, frequencies are shared; you do not have exclusive use of the frequency, assume people not associated with your group will be listening. Do not broadcast the names of under age children.

Confident

Keep your voice calm and steady even if you are feeling stressed. Do not let your voice convey unnecessary emotions. Be confident in your communication. Know the facts.

Complete

Does the message meet needs? Is there enough information so the recipient can accurately act upon the information?

Message or Traffic Handling Protocols

Successful radio communication can depend on the amount of noise from the surrounding environment or by electrical interference on the channel, differences in operating style, dialect, and poor enunciation. Practicing good radio protocol can help to eliminate failed communications. Listed alphabetically below are typical *codes* or *phrases* used to enhance clarity.

Break Or Break One Hold Or Hold One Break for Additional The "one" refers to a moment in time that has no time limit.	Frequently, there are reasons to pause in the middle of a transmission. On a long message, pause to allow the recipient to scribe the message and to allow emergency traffic to break in and receive attention.
Clear Out QRT (ham radio) End Stop 10-3 (CB radio, not recommended)	The end of your message session should be followed by an "end of session code" that signals this is the last transmission, so do not expect further information. The end code opens the channel to the next user.
Come In	You are asking the other party to acknowledge they hear you.
Continuing	After a pause, the sending station may say "Continuing with the previous message."
Copy Copy That	Did you understand what was said?
Go Ahead Go Over	The end of a transmission should be followed by an "end code" to alert the listener that you have finished speaking, as opposed to the radio going quiet or dead.
Question Mark Repeat Say Again	If the receiving station is missing information or does not understand, the phrase "Question Mark" or "Repeat" or "Say Again" can be used to ask for an information repeat.
Radio Check	What is my signal strength? Can you hear me?
Read Loud and Clear Read 5 by 9	Response to "Radio Check." Means your transmission signal is good. Means good clarity and excellent signal strength

<p>Roger Roger Roger QSL (ham radio) Affirmative Negative 10-4 (CB radio)</p>	<p>After you finish a transmission, you may be unsure the message was received. To eliminate doubt, you can ask for an "acknowledgement" such as "did you copy that?" The receiving station may use one of the following acknowledgments: Roger Roger Roger (used under poor receiving conditions) QSL (ham radio Q-Code abbreviation) Affirmative (means "Yes") Negative (means "No") (Avoid "yup" or "nope" as they are difficult to hear.) 10-4 (CB radio, not recommended)</p>
<p>Standby or Standby One, Wait or Wait One.</p> <p>The "one" in "standby one" refers to a moment in time that has no time limit.</p>	<p>A standby, or wait, is a temporary interruption, or pause in the transmission. The session has not ended, but the sending station needs to address other important business.</p> <p>In addition, the standby (or wait) code can let the station know they have been heard but you are unable to respond immediately</p> <p>Eventually the session will continue. The channel should not be released for use by other communicators.</p>
<p>Wilco</p>	<p>Meaning: "I will comply."</p>

Think Before Speaking

When you transmit a message, take a few seconds to think about what you are going to say before saying it. Gathering adequate information is the responsibility of the operator originating the message.

Pressing the PTT (Push to Talk) button and saying "umm" and "ahhhh" because you're trying to think of what to say is annoying and time wasting. When multiple people are using a channel, this behavior reduces availability for others.

Transmitting (Beginning a Communication Session)

When you begin a new session and know what you are going to say, press and hold the PTT button for one to two seconds before speaking. This allows radios that have gone into sleep mode (for battery conservation) to "wake up." You could cut off the first part of your transmission if you talk too soon.

Release the PTT and listen to confirm the channel is clear. Push the PTT and begin the message by announcing your identification (This is command ... , This is Team B ... , This is "ham call sign" ... , or This is logistics ... , etc.)

Announce why you started this session (Calling Team A ... , Calling the VRC ... or This is an announcement for all stations)

Emergency Calls

If you have an emergency message and need to interrupt other conversations, wait and listen until you hear "Over" from the station using the channel. Press PTT and say "BREAK, BREAK, BREAK, [your identification], I have an emergency message for [receiving station identification], Do you copy?, Over."

A typical two-way radio session is described below. Embedded within this session are several codes that help clarify the communication process.

(Command) Command calling logistics. Over.

(Logistics) This is logistics. Go ahead.

(Command) How many backpacks are available for immediate use? Go ahead.

(Logistics) We have 6 backpacks now and 14 additional by tomorrow morning. How many do you need? Go.

(Command) Question Mark. Did you say you have 6 backpacks? Go.

(Logistics) Roger, we have 6 backpacks. Go.

(Command) We need 7. Can you deliver 6 bags today by 2 PM to the VRC? Go.

(Logistics) Affirmative, we can deliver 6 backpacks today by 2 PM to the VRC. Over.

(Command) Proceed with that delivery. We're clear.

How to Communicate Under Poor Receiving or Transmitting Conditions.

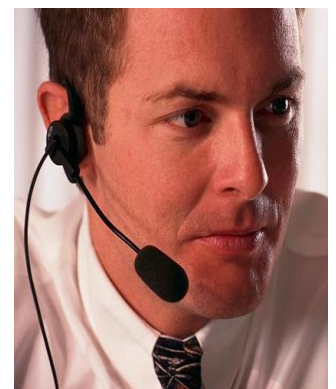
Scene noise or radio noise can contribute to poor communications.

If the receiving station has not understood the "number" in the message, often the "Stop Count" technique is used. For example: you want to convey the number 5 (five). Count to 5 and stop: 1, 2, 3, 4, 5. Another method is to use the number in a phrase, such as 1945.

Poor communications can be caused by microphone wind noise from natural wind or from aspirated consonants. Vowels do not produce wind, but excessive puffs of air are caused by consonants: B, C, D, F, G, H, J, K, L, M, N, P, Q, R, S, T, V, W, Y, Z.



For this reason, never speak directly into the microphone. Instead, hold it to the side of your mouth so the burst of air travels perpendicularly to the microphone. A few examples are shown below.



Scribing A Message

The radio message should be written, rather than verbal, when relaying a message from one point to another. Often your host organization will have prepared a form to handoff messages. If not—and you can use plain paper—make sure to scribe the minimum amount of information necessary for an accurate memorandum. Here is one example in addition to the samples that appear at the bottom of this page:

To _____
 From _____
 Date Message Received _____
 Time Message Received _____

Body of Message

Delivered To (if different from person or agency identified in "To" above) _____
 Time Message Delivered _____
 Station ID _____

Available time to scribe a message can be limited, but avoid using shortcuts and abbreviations not likely understood by the recipient. Bear in mind that figures take less time to write than words take: 7, instead of *seven*.

GENERAL MESSAGE		
TO	POSITION	
FROM	POSITION	
SUBJECT	DAT	TIME
MESSAGE		
SIGNATURE	POSITION	
REPLY		
DATE	TIME	SIGNATURE/POSITION

CERT FORM #8 (ICS 213)

WCARA GENERAL MESSAGE FORM	
TO	FROM
DATE	TIME
MESSAGE	
DELIVERED TO	TIME

If you need to copy a message when the transmitting station is using the "Phonetic Alphabet," it is good to know there are two lists, as described here. Often, communicators will just make up words and not use either alphabet.

Law Enforcement Phonetics Alphabet		International Phonetics Alphabet NATO, Military, Fire and EMS, Aviation, Amateur Radio		
A	Adam	A	Alpha (AL fah)	0 ZEE row
B	Boy	B	Bravo (BRAH VOH)	1 WUN
C	Charlie	C	Charlie (CHAR lee)	2 Too
D	David	D	Delta (DELL tah)	3 TREE
E	Edward	E	Echo (ECK oh)	4 FOW er
F	Frank	F	Foxtrot (FOKS trot)	5 FIFE
G	George	G	Golf (GOLF)	6 SIX
H	Henry	H	Hotel (hoh TELL)	7 SEVEN
I	Ida	I	India (IN dee ah)	8 AIT
J	John	J	Juliet (JEW lee ETT)	9 NINE er
K	King	K	Kilo (KEY loh)	
L	Lincoln	L	Lima (LEE mah)	
M	Mary	M	Mike (MIKE)	
N	Nora	N	November (no VEM ber)	
O	Ocean	O	Oscar (OSS cah)	
P	Paul	P	Papa (pah PAH)	
Q	Queen	Q	Quebec (keh BECK)	
R	Robert	R	Romeo (ROW me oh)	
S	Sam	S	Sierra (see AIR rah)	
T	Tom	T	Tango (TANG go)	
U	Union	U	Uniform (YOU nee form)	
V	Victor	V	Victor (VIK tah)	
W	William	W	Whiskey (WISS key)	
X	X-ray	X	X Ray (ECKS RAY)	
Y	Young	Y	Yankee (YANG key)	
Z	Zebra	Z	Zulu (ZOO loo)	

Two-Way Radio Communications - Best Practice

Starting a Communication Session					Responding Station	
Push to Talk PTT	Calling	Who's Calling	Ask for a Response, Signal you are done talking	PTT	Response	Turn the channel back to Team A
Push	Calling Team A	This is Team B Calling	Come In Go Ahead Go Over	Release	This is Team A	Go Ahead Go Over

The Message					Responding Station	
PPT	This is Team B	Team A, can you send three people to the fire station?	Go Ahead Go Over	Un-PPT	This is team A We have two people available but not three, will that work?	Go Ahead Go Over

Message					Responding Station	
PPT	This is Team B	Yes, Team A, please send two people to the fire station, do you copy?	Go Ahead Go Over	Un-PPT	Affirmative Team B, we copy. We will send two people to the fire station.	Go Ahead Go Over

Communicating the Message					Responding Station	
PPT	This is Team B	Thank you, Team A, that is all we need.	Team B is Clear or Out	Un-PPT	Copy that, Team A is clear	