General Radio Procedures

1. How to speak

1.1. Loudness

The loudness of your voice on the other end of the radio link depends on many factors beyond your control. The two you can directly control are the position of your microphone and the loudness of your voice. Your microphone should be about 1-2 cm from your mouth. Control the volume of your voice. If you speak too loudly, the radio circuits will distort your voice and the received signal may become “unreadable”. In radio telephone procedures “readable” means to be able to hear and understand the message being transmitted. Therefore, “unreadable” means the message being transmitted is not being understood.

1.2. Rate of Speech

Generally, words are spoken at about 100 per minute. Your rate of speech depends on the radio circuit. A noisy HF circuit may require that you talk slower to be understood while on a clear UHF circuit you can talk as if the person was sitting next to you. There are some rules of thumb you can follow:

- Speak slowly enough to pronounce each word clearly.

- Speak slowly enough for the listener to understand the words and understand their meaning.

- Speak quickly enough to sound natural.

- Pause between groups of words, but do not fill the pauses with “uhs”, “ers” or other meaningless noises.

1.3. Pronunciation

The third important factor in producing good readable communications is the clear and distinct pronunciation of all sounds, syllables and words. If you do not pronounce the words distinctly, you will not be understood.

1.4. Pattern of Speech

The proper arrangement of words and phrases will contribute greatly to the communication process. Natural phrasing should be used; words, phrases or sentences should not be run together. The spacing between ideas is normally much greater than that between words. The most important thing to do is to know exactly what you are going to say before you key the microphone. Nothing is more frustrating than to listen to dead air mumbling while the person on the other end of the radio tries to remember what he was going to say. Try the following:

- Group words so that the ideas are clear.

- Emphasize key words and phrases and repeat them as necessary.

- Again, pause between groups of words, but do not fill the pauses with “uhs”, “ers” or other meaningless noises.

2. Prowords

A proword is a word or group of words to which a definite meaning is assigned. They are used to remove some of the ambiguity from voice communications and to shorten transmission times. For example, “I understand your message. I am leaving the frequency now.” Can be shortened to “Roger, out”. Prowords are very effective if used properly. The following is a list of some prowords and their meanings.

PROWORD	**MEANING**
ACKNOWLEDGE	Let me know that you have received and understood this message.
AFFIRMATIVE (AFFIRM)	Yes or permission granted.
BREAK	Used to separate one message from another.
CONFIRM	Verify entire message or portion indicated with the originator and send correct version.
CORRECTION	An error has been made in this transmission. Transmission will continue with the last word correctly transmitted.
DISREGARD (TRANSMISSION)	This transmission is in error. Disregard it.
I SAY AGAIN	I am repeating the transmission or the portion indicated.
I SPELL	I shall spell the next word phonetically.

NEGATIVE	No or permission not granted or that is not correct.
OUT	This is the end of my transmission to you and no answer is required or expected.
OVER	This is the end of my transmission to you and a response is necessary.
GO AHEAD	Proceed with your message.
READ BACK	Repeat all or the specified part of this message back to me exactly as received.
RELAY (TO)	Transmit this message to all addressees or to the address designations immediately following.
ROGER	I have received your last transmission satisfactorily.
SAY AGAIN	Repeat all or the following part of you last transmission.
STANDBY	Wait for a short period of time.
THIS IS	This transmission is from the station whose designation immediately follows.
WILCO	I have received your message, understand it, and will comply.

3. Phonetic Alphabet

LETTER	WORD	PRONUNCIATION
A	Alpha	AL FAH
B	Bravo	BRAH VOH
C	Charlie	CHAR LEE
D	Delta	DELL TAH
E	Echo	ECK OH
F	Foxtrot	FOKS TROT
G	Golf	GOLF
H	Hotel	HOH TELL
I	India	IN DEE AH
J	Juliet	JEW LEE ETT
K	Kilo	KEE LOH
L	Lima	LEE MAH
M	Mike	MIKE
N	November	NO VEM BER
O	Oscar	OSS CAR
P	Papa	PAH PAH
Q	Quebec	KAY BEK
R	Romeo	ROW MEE OH
S	Sierra	SEE AIR AH
T	Tango	TANG GOH
U	Uniform	YOU NEE FORM
V	Victor	VIK TOR
W	Whisky	WIS KEY
X	X-ray	ECKS RAY
Y	Yankee	YANG KEE
Z	Zulu	ZOO LOO

NUMBER	PRONUNCIATION
0	ZEE ROH
1	WUN
2	TOO
3	TREE
4	FOW WER
5	FIFE
6	SIX
7	SHE VEN
8	AIT
9	NINE ER
Decimal Point	DEH SEE MAL

4. Call Procedures

The basic rule for the satisfactory exchange of voice communications is “open up, speak up, and shut up’”. This means that the operator should get on the air without unnecessary testing, complete the message traffic as quickly as possible, and then clear the frequency. All of your calls should be brief an concise. There are three types of calls you may use: the Full Call, the Long Call and the Abbreviated Call.

4.1. The Full Call

The full call or normal call is used under good communications conditions. The callsign of the calling and called station are given only once. For example:

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MAGIC34, THIS IS FALCON4. REQUEST PICTURE. OVER.

FALCON4, THIS IS MAGIC34. PICTURE CLARA. OVER.
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4.2. The Long Call

When communications are difficult, the Long Call is used. In a long call, the callsigns of the receiving and transmitting units are repeated to attract the attention of the receiving operator. For example:

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COWBOY1 COWBOY1, THIS IS BULL3 BULL3. RADIO CHECK. OVER.

BULL3 BULL3, THIS IS COWBOY1 COWBOY1. HAVE YOU WAEK BUT READABLE.
OVER.
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4.3. The Abbreviated Call

Abbreviated calls are used during *good communications conditions and after contact has been firmly established*. The abbreviated call simply omits any unnecessary part of the callsign. This is consistent with the desire to keep transmissions short. For example, if there is only one other station on the frequency, they will know that you are talking to them.

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GO TRAIL.

2, 3, 4.
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5. Emergency Frequencies

There are three emergency frequencies you should be familiar with. They are:

- International UHF and VHF Emergency Frequencies. The UHF is 243.00 MHz and the VHF is 121.50 MHz. These are used by aircraft, aeronautical stations and aerospace rescue recovery stations.

- The Maritime Mobile Service Calling and Distress Frequency is 2181 KHz in the HF band. This is used primarily by ships at sea.

The UHF emergency frequency is also known as the GUARD frequency. These frequencies can be used at any time during an emergency but the emergency traffic should be moved to another frequency as soon as possible to keep the frequency clear for other emergencies.

6. Meaconing, Intrusion, Jamming and Interference

These terms put together are referred to as MIJI. You will no doubt experience some form of degradation of your radio communications that will be due to any one or a combination of the following:

6.1. Meaconing

Meaconing is derived from the words Masking & bEACON. Meaconing is used to confuse navigation systems by transmitting actual or simulated navigation signals.

6.2. Intrusion

The intentional insertion of electromagnetic energy into transmission paths, with the objective of deceiving operators or causing confusion is considered intrusion. For example, an unauthorized call may come over the frequency directing the Flight to divert to another mission.

6.3. Jamming

Jamming is the deliberate radiation or reflection of electromagnetic energy with the objective of impairing the use of electronic devices, equipment or systems. For example, you may receive so much noise on your radio that you cannot understand another sites transmissions. This noise would be intentionally transmitted to prevent your use of the frequency.

6.4. Interference

Interference is any radiation, emission or induction of electromagnetic energy unintentionally causing degradation, disruption or complete obstruction of the designed function of radio equipment. Most of the MIJI incidents you encounter will be from interference. For instance, a nearby site with a strong signal may mask a more distant, weaker station.