Portable Radio Fundamentals

How to a use a portable, hand-held radio effectively in an emergency

Objectives:

After completing this unit, you will be able to:

- **Use a portable radio effectively in an emergency**

- **Identify Radio features and controls**

- **Using correct operating procedures**

- **Including standard procedural words and phonetics**

How do I USE a 2-way Radio?

- **DIFFERENT MAKES** and models of radios vary, so…

- **READ** the **INSTRUCTIONS**

- **BECOME FAMILIAR** with the controls on <u>YOUR</u> radio!

Portable Radio "Anatomy"

Power On-Off, Switch

- **Is combined with volume control on some models**

- **Or "push-button on others**

- **First of all, make sure the radio is "turned on"**

Portable Radio "Anatomy"

Channel Selector

(If your radio has one)

- Select your "channel"
  - Develop a plan ahead !
- "Up-Down" arrows
- Or a rotating "knob"

Portable Radio "Anatomy"

Volume control

- **Adjust the volume control until you can "hear" other users.**

Portable Radio "Anatomy"

"Squelch" control

- **Either a <u>concentric ring</u>**
  - **under the Volume control**
- **Or a <u>separate knob</u> of its own**
- **"Open" until you hear "white noise"**
- **"Close" just until noise disappears**

Portable Radio "Anatomy"

"Push-To-Talk"
(PTT) Switch

- PUSH to TALK
- Let go to LISTEN
- LISTEN more than you talk!
- If somebody seems in control of things, LISTEN to them!

Portable Radio "Anatomy"

Speaker-Microphone

- **To SPEAK, Push-To-Talk**
- **SPEAK in a NORMAL tone**
- **To LISTEN, Just LET GO**
- **LISTEN more than you talk!**

Portable Radio "Anatomy"

Batteries or

Battery Pack

- **Use AA or AAA alkaline**

- **Or a rechargeable pack**
  - **If supplied with the radio**
  - **Make sure the pack is charged**
- **Carry spare batteries!**

Maha MH-C204F
AA battery charger

Portable Radio "Anatomy"

Antenna (flexible or telescoping)

- **Extend fully**
- **Hold vertical (best reception)**
- **Replace or repair**
  - **If visibly damaged**

A 2-way radio is not "Like a telephone..."

BECASE:

- You can't hear anyone if YOU are talking!
- So, no one else can speak when YOU talk!
- If EVERYONE talks, NOBODY understands!
- Which results in CHAOS %^~#&*!
- SO…

When Do You Speak?

- **Speak ONLY if you <u>have to</u>**
  - **Then KEEP IT SHORT**
- **The MOST important in using 2-way radio effectively is…**
- **LISTENING, Not TALKING!**
- **If someone seems in control of things, LISTEN to them!**

What is a "Controlled Net?"

- **Some one "takes command" to control / manage what is going on**
  - Radio users must call "Control" to *get permission* before calling anyone else.

- **Use a Controlled Net when <u>more than four</u> people are "on the air".**

Why?

It enables "Control"
(the person in charge) to:

- **PRIORITIZE** resource requests
- **QUICKLY** handle multiple situations
- **RECORD** what happens

WHO is "Control?"

It could be <u>ANYONE</u>, even you!

"CONTROL'S" JOB IS TO:

- **MAINTAIN radio discipline by:**
  - **Setting the example**
  - **Prioritizing messages and requests**
  - **Handling all radio traffic efficiently**

- **TRACK what's going on**…
  - **Write down everything** that happens...

- **REPORT to the Emergency Response Team Coordinator or Incident Commander**

You MUST write things down!

- **Because it's likely that you <u>won't remember everything</u> in your head.**

- **Especially *when it gets really busy!***

- **Nor can you effectively brief the Incident Commander <u>from memory</u>**

- **Or <u>accurately reconstruct</u> what happened some time days later...**

"CONTROL" LOG

- **WRITE down names of staff or officials for whom you send messages**

- **Make a line entry for each item on a log.**
  - **This is absolutely necessary**
    - **In case person wanders off before you get a reply or you need to get more information**
  - **Helps eliminate duplicate requests for the same resources or information**

List in chronological order...

- **Who has a problem or information**
- **Situation update / tasks assigned**
  - **Problem identification and location**
  - **Progress of evacuation,**
  - **Resources available, assigned, out of service or in transition**
  - **Personnel safety / accountability**
    - **Brief Team Leader and Incident Commander**
    - **Becomes part of official incident record.**

Your "Job" as a volunteer who is an occasional radio user

- **PARTICIPATE** in training exercises

- **LEARN** and use correct procedure

- **LISTEN** to the radio all the time

- **PAY ATTENTION** to instructions

- Be **BRIEF** when you talk on the radio

Participating in a Controlled "Net"

- **Respond ONLY to "Control"**
  - Get permission before contacting anyone
- **Answer PROMPTLY**
  - Monitor the radio continuously
  - Answer immediately if called
- **Don't leave "air" without checking out!**
  - Otherwise, **"Control"** wastes time trying to call or locate you when you are not there

User Names - "Unit IDs"

Identify yourself by your :

- **LOCATION** and **ASSIGNMENT** such as: "Stairwell Ten, Evac Chair"

- **This enables "Control" to manage resources or tasks without regard to WHO is at any location, so that events can be logged easily**
  - **Use your Unit ID CONSISTENTLY**
  - **Contact "Control" or others by THEIRS**
  - **Listen for YOURS**

Call Correctly:

- ## LISTEN! before transmitting

  - Do not interfere with radio traffic in progress

- **Contact "Control" by saying:**

  "Control, THIS IS <your unit ID>, Over."

- **Control acknowledges**

  "<your ID> GO AHEAD"

- **Then you can speak… Please keep it brief**

To call someone else

- **SAY the unit ID of the person you want to call,**

- Then say **'THIS IS'** . . .

- **Followed by** "<your ID>

- Then say, **"OVER>"**

   Example: "P2 Garage, this is P2 North Elevator, Over"

Acknowledge Calls Correctly:

When you hear a call to you reply:

- **"THIS IS"** followed by **"<your ID>"**

- Then tell the unit calling you that it is OK to proceed with their message by saying:

- 'GO AHEAD'

"THIS IS P2 GARAGE, GO AHEAD"

RADIO OPERATING PRACTICE

**Practice the "ABCs:
" ACCURACY+ BREVITY= CLARITY!**

- **Idle chatter has <u>no place</u> in a controlled net!**

- **Establish initial contact with 'Control' by stating your unit ID only**

- **Wait for 'Control' to <u>recognize you</u> before transmitting any further**

  - *If you speak further without being recognized, you may "double" over someone who then must repeat their message*

RADIO OPERATING PRACTICE
(continued)

- **THINK BEFORE you speak**
  - **Keep your transmissions short**

STOP transmitting if you stop talking
  - **Release Push-to-Talk, otherwise you make "dead air" so that no one else can speak**

- **DON'T call repeatedly**
  - **If Net Control doesn't answer you, wait for pending traffic to finish before trying again**

- **If truly urgent, disregard**

RADIO OPERATING PRACTICE

(continued)

- **WAIT a few seconds** before pushing to "talk" and between phrases so others can break in

- **It is OK** to interrupt, <u>IF</u> you have important info
  - That's why you leave gaps between transmissions

- **When necessary to interrupt, speak only long enough to "IDENTIFY AND SAY WHY"**

Example: "North Team Leader, info."

RADIO OPERATING PRACTICE
(continued)

- **Use no 10-codes or jargon !**

- **Use PLAIN LANGUAGE ONLY**
  - **Avoid jargon or technical terminology unless it is deemed OPERATIONALLY NECESSARY!**

- **USE short simple phrases**
  - **Keeping transmissions "short" helps the listener who is recording the log**

RADIO OPERATING PRACTICE

(continued)

- **CLARIFY**

- **REPEAT Critical Information**

- **CONFIRM correct**

RADIO OPERATING PRACTICE
(continued)

- **WAIT for <u>acknowledgement</u> before speaking, don't take up air time with a long transmission until you are certain that you have the other operator's attention**

- **ACKNOWLEDGE transmissions to you**
  - **This avoids having to repeat the message. 'Control' then knows you are ready to continue with your assignment, releasing the frequency**

RADIO OPERATING PRACTICE

(continued)

- **Answer questions directly; do not explain**
- **If amplifying information is vital to ensure that traffic is fully understood, be brief**
- **Let 'Control' or the requestor ask for details**
- **ASK who a message is for if you don't know**
- **Let third parties speak directly to each other**

RADIO OPERATING PRACTICE
(continued)

- **Wait a fraction of a second after pushing the "talk" button and before speaking**

- **This avoids "clipping" off first syllable as radio changes over from its receive state to transmit**

Don't speak louder in a noisy environment

If you speak louder than is needed for normal speech, the radio will distort your voice, *reducing* intelligibility.

In Noisy Environments

<u>**Preventive Steps:**</u>

- **Use earphone or headset** (if you have one)

- **Turn down volume -** don't add to noise level!

- **Shield microphone from the wind**

- **Speak ACROSS the microphone**

  – **Use a normal speaking voice**

Use Procedural Words Correctly

- "Prowords" help expedite radio messages and reduce copying errors
- They are effective ONLY if everyone understands and uses them correctly

The "Basic Four"

Everyone who uses a 2-way radio should learn and use these:

- **"THIS IS"** - **Used to identify who is calling**

- **"OVER"** - **Means** *"I have finished speaking and it's now your turn"*

- **"GO AHEAD"** - **Means** *"I'm ready to copy"*

- **"OUT"** - **Means** - *"I am finished and expect no reply'*

  The station who initiates the contact always TERMINATES it.

Proword Recap

- **"OVER"**

  - Leaves no doubt <u>whose turn it is</u>…

- **"OUT"**

  - Tells everyone the <u>contact has ended</u>.

  Using "Over and Out" together is unnecessary,

  use either one, or the other.

Some More Prowords...)

- **"COPY"** - Means OK, received and understood

- **"AFFIRMATIVE"**or **"NEGATIVE"** Use instead of "yes" or "no" because its sound is distinctive and meaning clear, even under noisy operating conditions.

- **"SAY AGAIN"** Used to request a word or phrase be repeated from the last known word preceding or referenced, for example:

  'SAY AGAIN ALL AFTER…<known word>'

More Prowords...)

- **"CORRECTION"** - I made an error and am transmitting again from after the last correct word...

- **"CORRECT?"** - **Am I C**orrect?

- **"CORRECT (AFFIRMATIVE)"** - **You are correct.**

- **"WAIT"**

  - **Cease transmission until told to "Go Ahead" by 'Control'**

  - Example: "Fourth floor acknowledged, **WAIT**,... Evac Chair make your call"

Yes, more useful Prowords...

But, thank goodness we are almost done!

- **"I SPELL"** - Copy as I spell phonetically

- **"FIGURE(S)"** - Copy numbers following

- **"INITIAL"** - Single letter follows

- **"MIXED GROUP"** - following Group contains both numbers and letters

- **Speak SLOWLY and DISTINCTLY!**

International Telecommunication Union (ITU) Standard Phonetics

A - Alpha
B - Bravo
C - Charlie
D - Delta
E - Echo
F - Foxtrot
G - Golf
H - Hotel
I - India

J - Juliet
K - Kilo
L - Lima
M - Mike
N - November
O - Oscar
P - Papa
Q - Quebec
R - Romeo

S - Sierra
T - Tango
U - Uniform
V - Victor
W - Whiskey
X - Xray
Y - Yankee
Z - Zulu

TIME FOR QUESTIONS