

# Disaster Communications With FRS Radios

This material is for the “*Basic CERT Class #2, FRS*”

WELCOME!

# Course Objectives

## Quick overview of...

- ◆ “After a major Disaster...”
- ◆ The role CERT plays
- ◆ Where do you fit in the picture?

## The major goals for this class...

- ◆ Learn techniques for efficient and accurate CERT communications
- ◆ Learn to use a two way radio
- ◆ Practice with an FRS radio



Slide number



# Earthquake

“After a major Disaster...”

Limited Communications -

- ◆ Cell text messages (*maybe !?*). No voice.
- ◆ Messengers
- ◆ CERT Radio (FRS & HAM) (*yes !!!*)



Limited Public Services -

- ◆ LOTS of people need help RIGHT NOW

**Walnut Creek services can't meet demand...**

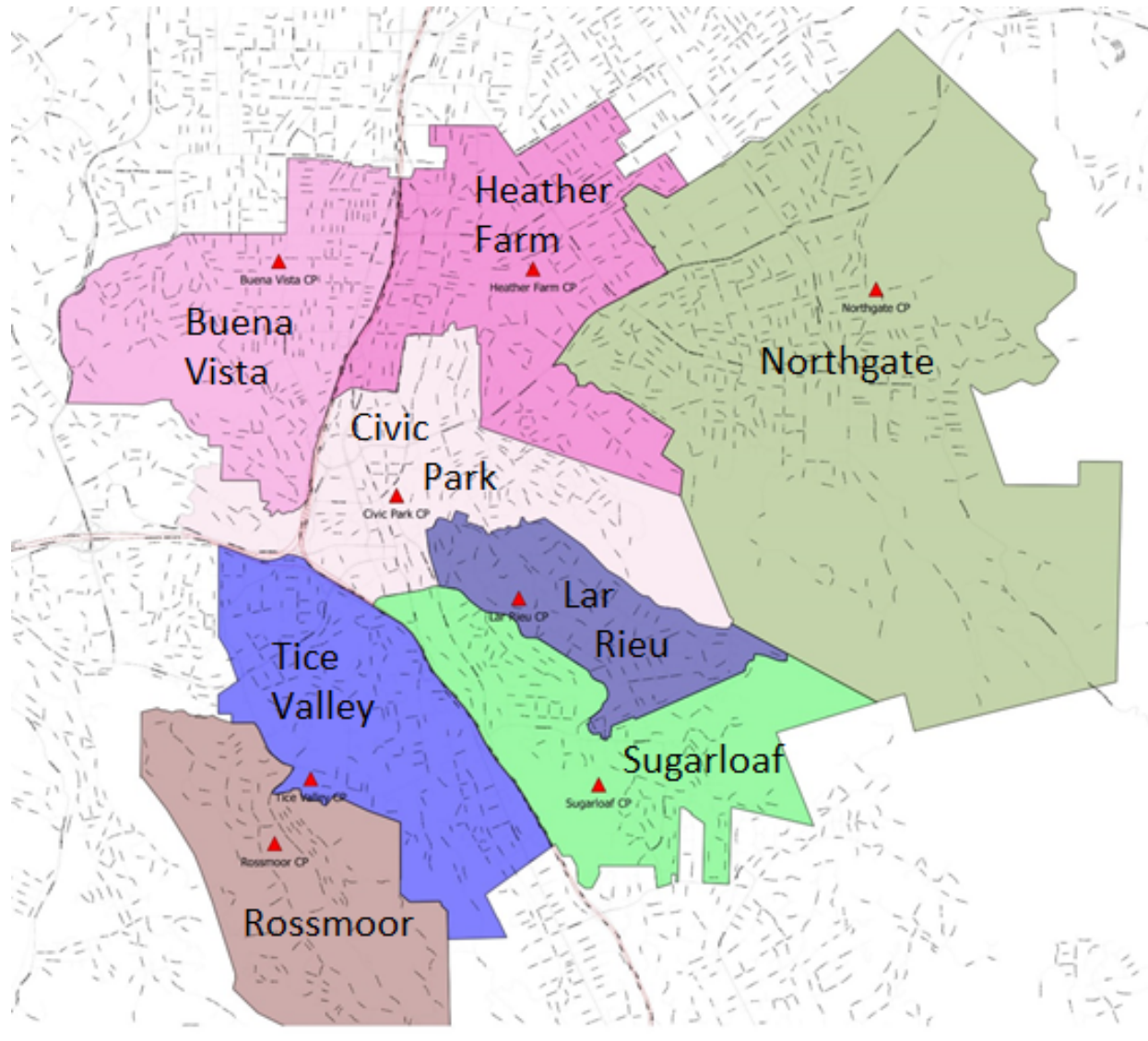


# The role CERT Plays

- ◆ Fire, police, medical first responders overwhelmed
  - City needs to know extent of damage/injuries
- ◆ In many cases CERT will be there first
  - Locate victims in neighborhoods
  - Provide limited First Aid
- ◆ CERT becomes the eyes and ears for the City.
  - Send status reports to Walnut Creek EOC (emergency operations center)

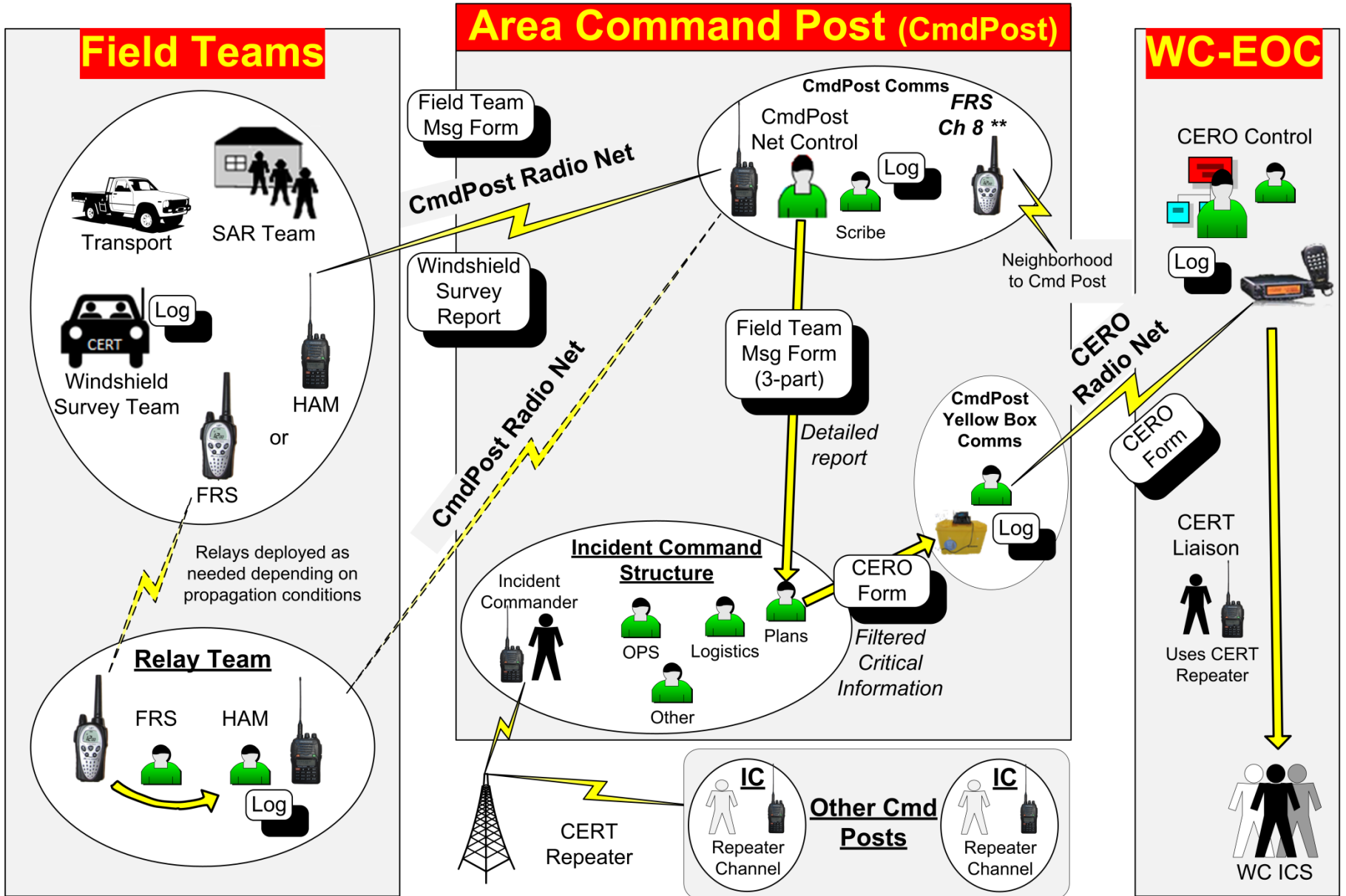
Walnut Creek is divided into Eight CERT Areas...

# WALNUT CREEK CERT AREAS



Each CERT area organizes around a local Command Post...

# WC CERT Area Communications Plan



# CERT Incident Command System Roles and Tactical Call-Signs

- ◆ Each CERT volunteer has a role.  
People in some roles need to use a radio.



**Radio Fact #1:**

**Over the radio, refer to people by their role name.**

**Your role name is your radio name or “*tactical call-sign*”**

- ◆ **Why?**
  - people rotate into and out of role positions
  - at a store, when you want to complain, you say  
“*I want to speak to your MANAGER!*”
  - more useful than a person’s real name

***Note: a tactical call-sign is NOT the same as a HAM call-sign!***

## ***A Radio is not a cell phone!!!***

- ◆ What happens when two people talk at the same time?  
In this recording, you will hear...
  - One person counting 1,2,3,...,20
  - Then a second person starts to recite A,B,C,D,...,P
  - <<<play the recording>>>
  - Who did you hear?

### ❑ Radio Fact #2:

**Two people can't talk at the same time. You'll hear...**

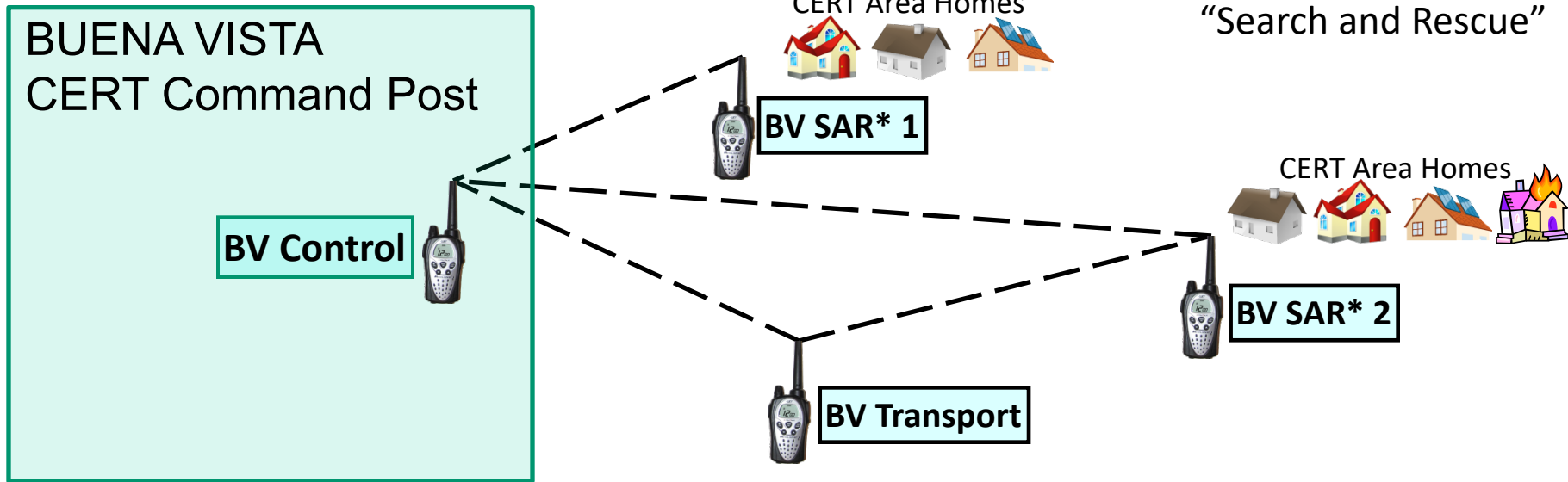
- interference (squawking or hissing)
- or only one of the people

**We call this “*doubling*” or “*stepping on each other*”**



# Emergency Communications Demo – 1 of 2

- You are about to hear an emergency communications demo involving these people with radios:



<b>CERT ICS Role</b>	<b>Tactical Call-Sign</b>
Message Center and Net Control	<i>BV CONTROL</i>
Search and Rescue Team 2	<i>BV SAR 2</i>
Transport driver	<i>BV Transport</i>
Search and Rescue Team 1	<i>BV SAR 1</i>

# Emergency Communications Demo – 2 of 2

- ◆ During the communications demo,  
*"ACTIVELY Listen!"*

You'll hear two messages.

You'll know they're coming when you hear -

**"BEGIN WRITTEN MESSAGE"**

- The first message is

*“BV SAR 2 reports a house off its foundation at 371 Main St. Message number is 401.”*

- Copy SECOND written message and msg number here:

---



<<< *play the communications demo* >>>

# Emergency Comm Demo De-brief

Were you able to copy the second written message?

*"BV SAR 1 reports a downed tree blocking all lanes at 371 Onyx Dr.  
Message number is 402."*

Maybe. The sender must dictate clearly, slowly, and concisely.

What did you notice in the demo?

- ◆ Short exchanges
- ◆ Special control words (*over, clear, go ahead, etc.*)
- ◆ Tactical call-signs (*radio names for people*)
- ◆ Taking turns (*only one person can talk at a time*)
- ◆ One person in control (*"BV Control"*)
- ◆ A "double" (a radio is NOT a cell phone!)

**We'll show you how to communicate like  
this in a series of small steps!**

# VERBAL DRILLS

## Group Practice...

- ◆ I'll split the room in half.
- ◆ Each half gets a tactical call-sign...

You folks are **Buena SAR 1.** → → → → →

- ◆ ← ← ← ← ← You are **Buena Transport.**

**Circle your tactical call-sign above**

1. I'll ask one side of the room to say something.
2. Everybody in that half raises one hand to an ear.
3. Then everybody responds at the same time!



## Verbal Drill #1:

### Use your tactical call-sign to identify yourself

- ◆ To identify yourself on the radio, you say  
"This is Buena SAR 1, OVER." or  
"This is Buena Transport, OVER." as appropriate.
- ◆ When I point to your side of the room,
  - a) raise your hand to your ear (to train a reflex),
  - b) then say in unison the **words** to identify yourself.



Note 1: "**OVER**" means you are done talking, you are turning the radio frequency "over" to the other party, and you expect a response.

Note 2: Never yell into your radio. Always use a calm, clear, even voice.

## Verbal Drill #2:

### You want to contact "someone"

- ◆ To contact someone, e.g. Buena Ops,
  - you listen for silence,
  - then say  
“Buena Ops, Buena Ops, this is Buena SAR 1, OVER.” or  
“Buena Ops, Buena Ops, this is Buena Transport, OVER.”
- ◆ When I point to your side of the room, I’ll ask you to “*contact Buena Ops*”. You say the **words**. (Then I’ll ask you to contact *Buena Security, Buena Medical, Buena SAR 2, etc.*)



# Verbal Drill #3a:

## “Someone” wants to contact you

- ◆ Someone wants to contact you (you heard your tactical call). You must reply as quickly as possible.

- ◆ For example, you heard:



*“Buena SAR 1, Buena SAR 1, this is Buena Security, OVER”*

You reply “**Buena Security, this is Buena SAR 1, OVER**”

- ◆ The projector operator will request contact with your side of the room. Say the **words** to answer the request. (e.g., he/she might be *Buena Medical, Buena Ops, etc.*)



denotes that the projector operator reads this aloud.

## Verbal Drill #3b:

### Request and answer a contact

- ◆ When I point to your side of the room, make a contact with the other side of the room. Then the other side of the room answer the contact.

For example, I'll point to Buena Transport. They'll say

"Buena SAR 1, Buena SAR 1, this is Buena Transport, OVER."

Buena SAR 1 will answer:

"Buena Transport, this is Buena SAR 1, OVER."





# Additional skills we'll practice in Verbal Drill #4:

## ◆ Ask a question:

- Just say “[...your question...], OVER”

## ◆ Answer a question

- For a simple yes/no answer, say "AFFIRMATIVE, OVER" or "NEGATIVE, OVER".
- Answer other questions with “[...your answer...], OVER”.
- Use **Affirmative**, **Negative**, or **Say Again** – better than short single words YES, NO or Repeat, which are harder to hear over background radio noise.

## ◆ End a contact

- To end the current contact, say “[your tactical call-sign], CLEAR”
- “CLEAR” means that you have nothing more to say and are yielding the radio frequency for use by other people (it is “clear” for other use).

# Verbal Drill #4a:

## Practice a verbal exchange (demo)


- ◆ Put it all together. In an informal situation, one side of the room contacts the other side of the room to ask very simple questions with simple answers so you can concentrate on the flow of the conversation.
- ◆ As I point to your side of the room, just read the next set of **words** in your “*What...says*” column in unison. For example,



<b><i>Buena SAR 1</i></b> action	What <b><i>Buena SAR 1</i></b> says:	<b><i>Buena Transport</i></b> action	What <b><i>Buena Transport</i></b> says:
Contact <b><i>Buena Transport</i></b>	“Buena Transport, Buena Transport, this is Buena SAR 1, OVER.”		
		You are ready to talk. Answer the request.	“Buena SAR 1, this is Buena Transport, OVER.”
...	...	...	...

- ◆ Now, look at the next slide which contains the full drill...

# Verbal Drill #4b: Practice a verbal exchange (full drill)

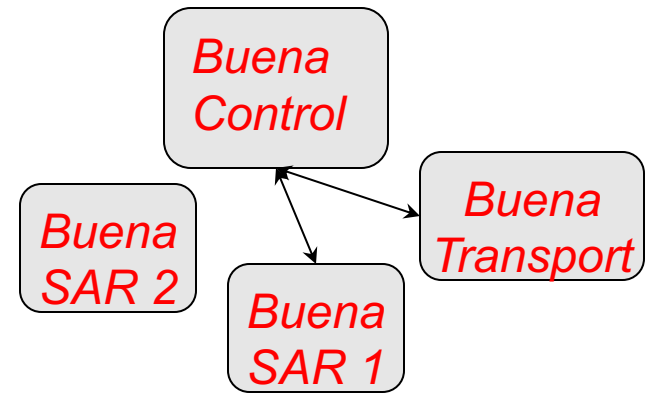
<b>Buena SAR 1</b> action	What <b>Buena SAR 1</b> says:	<b>Buena Transport</b> action	What <b>Buena Transport</b> says:
Contact <b>Buena Transport</b>	"Buena Transport, Buena Transport, this is Buena SAR 1, OVER."		
		You are ready to talk.	"Buena SAR 1, this is Buena Transport, OVER."
Ask...	"Is it raining? OVER."		
		Answer ...	"NEGATIVE, OVER."
Ask...	"How do you spell ONYX? OVER."		
		Answer...	"I spell Oscar, November, Yankee, X-ray. OVER." *
Ask ...	"Are you having fun yet? OVER."		
		Answer ... then ask...	"AFFIRMATIVE. What is the population of Walnut Creek? OVER."
Don't say Sixty-five thousand...	"Figures Six, Five, Seven, Zero, Niner. OVER." *		
		Say what you heard to verify it	"I copied Six, Five, Seven, Zero, Niner. OVER."
Confirm. Say you're done.	"AFFIRMATIVE. Buena SAR 1, CLEAR."		
		Say you 're done.	"Buena Transport, CLEAR."

\*See "Standard Phonetics" slide and "Pro Words" slide at the end.

# Verbal Drill #5a: Directed Nets

In the recorded CERT drill you heard earlier...

- ◆ four people *shared a common radio channel*.
- ◆ one person, who is ALWAYS listening, controlled who got to talk next.



Multiple people using a common channel with someone controlling who talks next is called a “directed net”. You must:

1. Wait until there is silence.
2. Say ***just your call-sign*** to ask the “net control” person for a “turn” to talk.
3. Start talking when “**Control**” says “<your call-sign>, go ahead, OVER”.
4. Try again later if you don’t get a turn. (“**Control**” didn’t hear you).

For example, suppose:


- a) **Buena SAR 1** and **Buena Transport** want to talk to **Buena Control**.
- b) **Buena SAR 1** and **Buena Transport** simultaneously say their call-signs.
- c) **Buena Control** tries to make sense of the “double”. For example, if he/she only hears “PORT”, **Buena Control** announces “*There was a double. PORT, go ahead. OVER.*”
- d) The person with “PORT” in their call-sign now talks while the other person waits.

# Verbal Drill #5b – Request a turn in a directed net

This drill illustrates *asking for a turn to talk* in a directed net where “doubles” can occur.

**Buena SAR 1**, you need to tell **Buena Control** that you’re taking a 20 minute break.

**Buena Transport**, you need to tell **Buena Control** that you’re taking a 10 minute break.

Buena Control says:	Buena SAR 1 says:	Buena Transport says:
Control uses whatever (s)he hears and says either “There was a double. SAR...” or “There was a double. Port...” followed by “go ahead, OVER.”	“Buena SAR 1”	“Buena Transport” 
<p>Neither party knows someone else wants to talk. They may ask for a turn at the same time!</p>		
	When you get a turn, say “This is Buena SAR 1. We are taking a 20 minute break, OVER.”	When you get a turn, say “This is Buena Transport. We are taking a 10 minute break, OVER.”
“I copy that Buena ___ is taking a ___ break. OVER.”		
	“Affirmative. Buena SAR 1, CLEAR.”	“Affirmative. Buena Transport, CLEAR.”
Do the other person, then finish with “Buena Control, CLEAR.”	If you weren’t called, try again.	If you weren’t called, try again.

# Directed Net - Control asks you to “Stand By”

When you ask for a turn on a directed net, Control may ask you to “**STAND BY**” \*.

This means that Control is busy and can't talk to you.

Answer by saying “<tactical call-sign> **STANDING BY, OVER.**”

Patiently wait until Control comes back to you and gives you a turn to talk.

If you have been patiently waiting, there is no radio activity, and you did not get a turn to talk, Control may have forgotten about you! Just ask for a turn again.

\*NOTE: "STAND BY" means “Wait, I'll be ready for you shortly.”



## Remember:

- ***EMERGENCY*** messages (matters of life or death, or imminent damage to property) always go first and can interrupt anyone.
- You must **STOP TALKING** immediately and yield the frequency to the **EMERGENCY**.

# What's next

- ◆ I'll demonstrate how to use an FRS radio.

*Note: tonight you will practice using an FRS radio (“**F**amily **R**adio **S**ervice”). However, in the big Graduation drill that follows the last class #7, you will use an amateur (HAM) radio which operates in a similar fashion. You need to pass a test to use a HAM radio **without** supervision. You'll hear more about the HAM CRAM that is offered after the Graduation drill.*

- ◆ You'll split you into small RADIO DRILL groups to practice using an FRS radio for 25 minutes.
- ◆ When you finish the drills, Team Instructors will collect the radios and return with you to this class room.

# Radio Controls – 1 of 2

## THE MAJOR RADIO CONTROLS

In order of use –

1. ON/OFF switch
2. Battery level indicator  
(better than nothing...)
3. Channel display
4. Lock the radio(see🔒 lock symbol)
5. Volume control for listening
6. Speaker
7. Microphone
8. Push-To-Talk button (PTT)



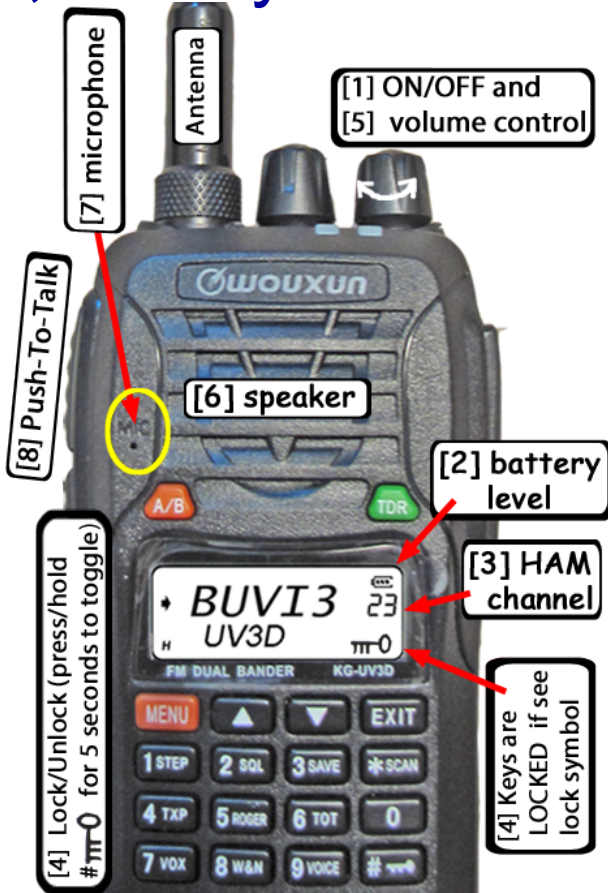


# Radio Controls – 2 of 2

Mic, LOCK button, and symbol locations may vary...



FRS radio (for tonight)



Amateur (HAM) radio (for Grad drill)



other FRS radio

# Basic FRS Radio Usage “Rules” Demonstrated

1. **Stand in a safe place** (e.g., not in the middle of the street).  
Concentrating on the radio, you will miss what is happening around you.
  2. Only one person at a time can talk!  
This is NOT a telephone.
  3. Tune radio to assigned channel and LOCK.
  4. Talking on the radio – you’ll practice this soon!
    - **THINK - Mentally compose** or **write** message down
    - **VERTICAL** – *radio works best with antenna upright*
    - **LISTEN** to ensure no one is talking
    - **PUSH the PTT** (*the Push-To-Talk button*),
    - **BREATH** - you need to pause a moment for the radio to get ready to transmit otherwise words may be cut off,
    - **SPEAK – clearly, calmly, and slowly** in normal volume across the microphone holding the radio one to two inches from your mouth (talk across the mike; if windy, talk directly into it),
    - **RELEASE** the Push-To-Talk button (a.k.a, “*Release to Listen*”)
    - Don’t send sensitive information over the air – ANYONE may hear you!
- ◆ If you are getting a bad signal, you must move – several inches to hundreds of feet. Get higher. Face a different direction. Tilt the antenna. Hold radio above your head.  
Experiment!



**INSTRUCTOR** – *count off students 1, 2, 3, 4, ..., 8. #1-4 stay for Radio. #5-8 go to Fire drill.*

# RADIO DRILLS – Split into groups

1. Send students to four corners of the room with PRINTED HANDOUT, JACKET, and HEAD LIGHT/Flashlight.
2. The third proctor (if any, the observer/trainee) becomes **Trans 1\*\*\***.
3. Students write down tactical call-signs assigned by **Control\***.
4. At drill area, **Security\*\*** distributes radios (even if student has one).

## TACTICAL CALL-SIGNS for Radio Drills

a) As guided by “**Control\***”, circle your assigned CERT area and role below.

b) Write your tactical call-sign

c) Cross out all unused CERT roles below.

**CERT Area** (and FRS channel number)-

***Buena (Ch8), Rossmoor (Ch10), Sugar (Ch12), Northgate (Ch14)***

### CERT Roles

A) <b><i>Control*</i></b>	D) <b><i>SAR 1</i></b>	G) <b><i>Logistics</i></b>	K) <b><i>Trans 2</i></b>
B) <b><i>Security**</i></b>	E) <b><i>Medical</i></b>	H) <b><i>SAR 3</i></b>	L) <b><i>Trans 3</i></b>
C) <b><i>Trans 1***</i></b>	F) <b><i>SAR 2</i></b>	J) <b><i>Plans</i></b>	M) <b><i>Ops Chief</i></b>

# RADIO Drill #1 - Identify yourself

You learn how to hold the radio, then listen and talk.

1. Students stand in a circle. Turn on the radio and adjust volume while *<area> Control* broadcasts “Testing”.
2. Watch as *<area> Control* identifies her/himself using proper radio position and voice - "This is *<area> Control, OVER*".
3. Now, *<area> Control* points to the next person.
4. The person moves the radio to proper position, pushes the PTT key, breathes in, then says "This is *<area>[tactical call-sign], OVER*", then releases the PTT key.
5. *<area> Control* goes around the circle **at least twice**.

*Note:* *<area> Security* helps a student when needed - watches for proper form/usage (holding radios close to mouth; talking in their calm "radio" voice; etc.)

Do the Mark Berch Maneuver - your arm is “frozen” with the radio next to your mouth so that if you bent over, turn around, move your head up, etc. the head (with mouth) and arm (with radio) are always in same position.

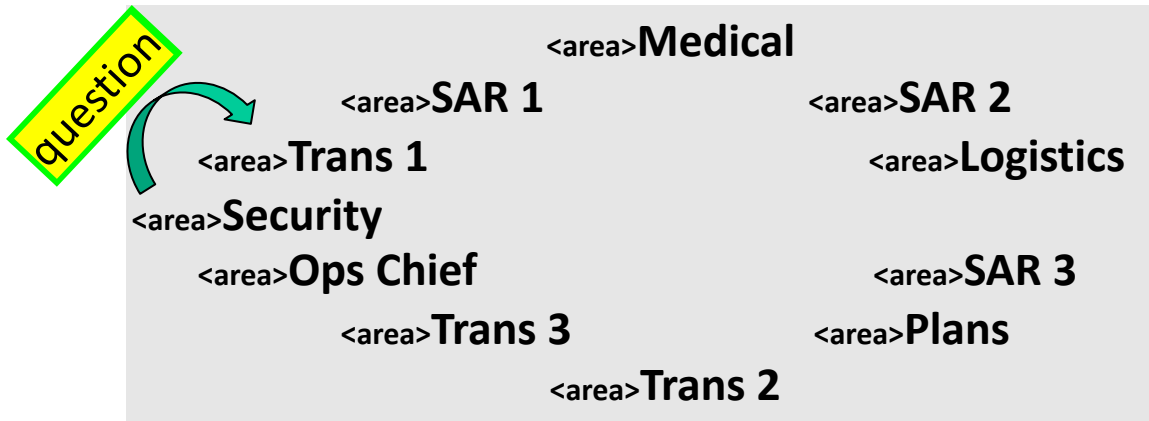
# RADIO Drill #2a – Demo - calling and replying

Practice initiating a contact and answering a contact in an informal(non-Directed) net.

<area>**Control** verbally asks...

<area>**Security** to question <area>**Trans 1** via radio.

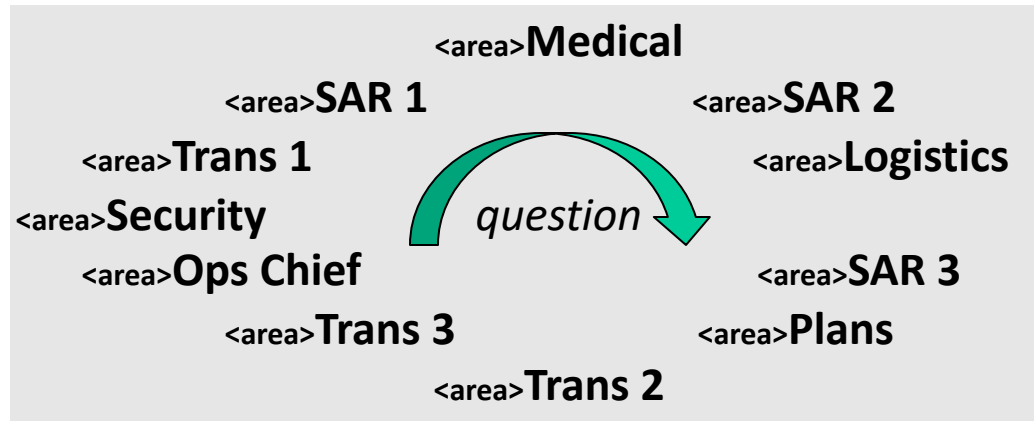
<area>**Trans 1** answers.



<area> Security says:	<area> Trans 1 says:
"<area> Trans 1, <area> Trans 1, this is <area> Security, OVER"	
	"<area> Security, this is <area> Trans 1, OVER"
"What is your favorite color? OVER" (eye color, type of car, pet names)	
	"I like yellow. OVER" (just some answer...)
"<area> Security, CLEAR"	
	"<area> Trans 1, CLEAR"

# RADIO Drill #2b – Everybody – calling and replying

Now, going around the circle, **<area>Control** verbally asks each person to question the next person **clockwise** in the circle (i.e., **<area>Trans 1** calls **<area>SAR 1**. **<area>SAR 1** calls **<area>Medical**. Etc.) After you go all the way around, repeat going **counter clockwise** around the circle. **<area>Security** oversees proper radio usage and etiquette.




<i>&lt;caller&gt;</i> says:	<i>&lt;called person&gt;</i> says:
"<called person>, <called person> this is <caller>, OVER"	
	"<caller>, this is <called person>, OVER"
"What is your favorite color? OVER" (eye color, type of car, pet names)	
	"I like purple. OVER" (just some answer...)
"<caller>, CLEAR"	
	"<called person>, CLEAR"

# RADIO Drill #3 – Request a turn in a directed net

This drill practices talking in a directed net and how **Control** handles doubles.

**Control** points to two students. They turn around (to eliminate visual clues), then say their tactical call-signs to request a turn. **When given a turn**, a student asks **Control** a question. To demonstrate, **Control** points to <area>**Security** and a student...

<area> <b>Control</b> says:	[Person A]/[Person B] says:
Points at [Person A] and [Person B]	They both turn away, listen for silence, then say "[Person A]" or "[Person B]"
<b>Control</b> uses whatever (s)he hears and says "There was a double. [partial name], go ahead, OVER."	 <p>Neither party knows someone else wants to talk. They may ask for a turn at the same time!</p>
	"This is [Person xx]. When does class end? OVER."
"In the near future, OVER."	
	"[Person xx], CLEAR"
"The other person, go ahead, OVER"	
	"This is [Person yy]. Why do cows have bells? OVER."
"Because their horns don't work, OVER."	
	"[Person yy], CLEAR."
"<area>Control CLEAR."	

**Control** then picks the next two people in the circle. If time allows, **Control** points to three people, who all ask for turns. Maybe students question other students (like drill #2), etc.

# End of This Material

1. If there is still time, <area>**Control** mix it up...
  - ask people questions directly
  - ask three students to get a turn at the same time, then identify themselves.
  - ask three students to get a turn at the same time, then ask another student a question
2. This is the end of the radio drills. Please return the loaner radios to the proctors, then assemble in the main classroom.

If you haven't done the Fire Control Exercise, report to Fire instructors.

Otherwise, thank you and remember to sign-out!

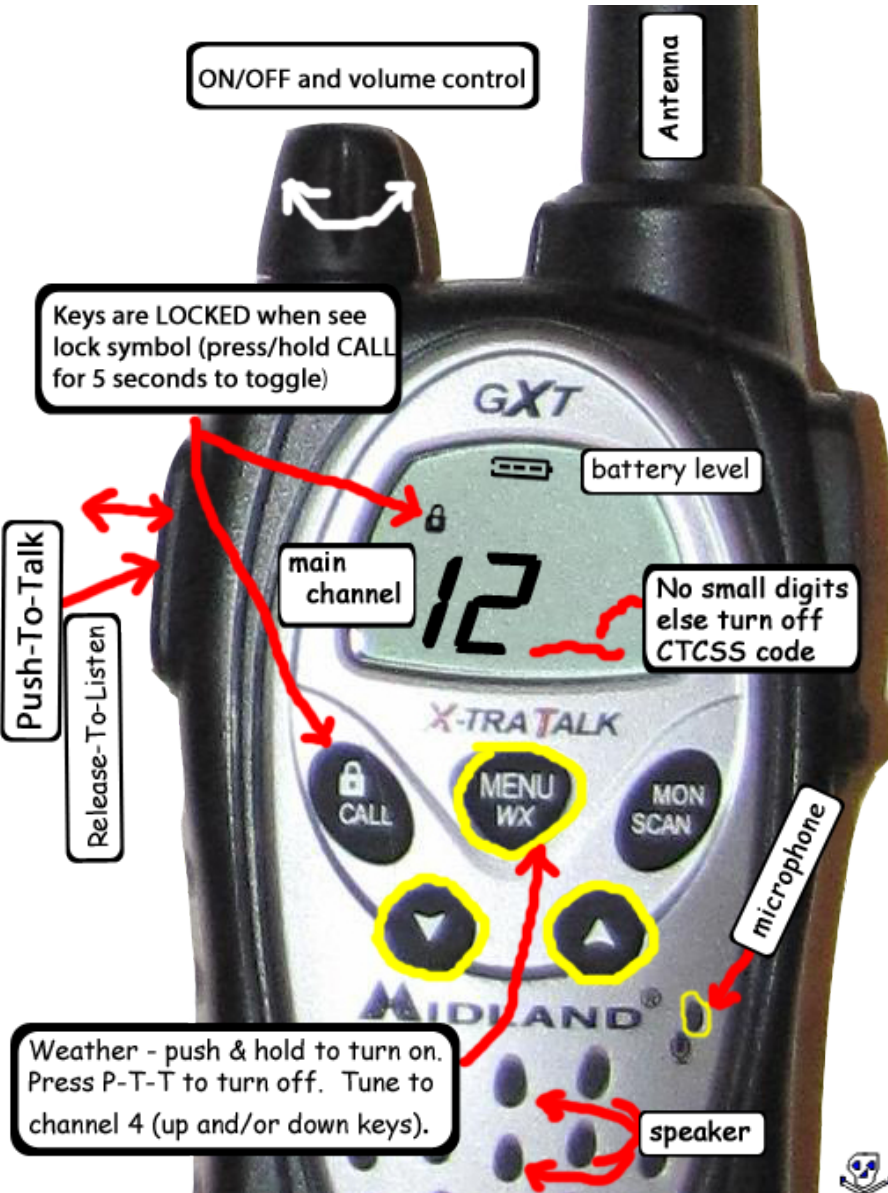














## Remember:

- ***EMERGENCY*** messages (matters of life or death, or imminent damage to property) always go first and can interrupt anyone.
- You must **STOP TALKING** immediately and yield the frequency to the **EMERGENCY**.



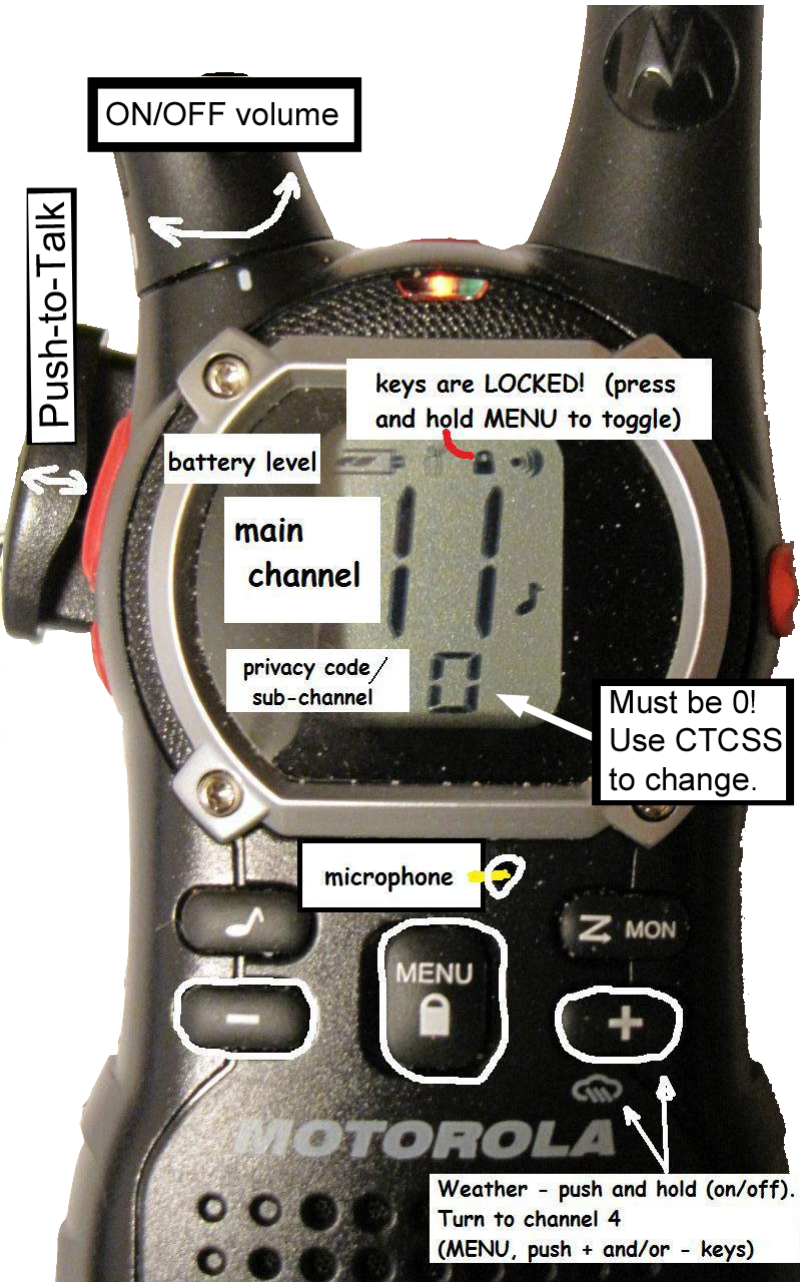
# How to Tune A CERT Cache Radio




- (1) If you see  ("keys are locked"), press and hold for 7 seconds "CALL"  until lock symbol *disappears*.
  - (2) Press **MENU** key (big digits flash). Press  or  as needed to change the channel.
  - (3) Press **MENU** again. You want **9r oF**. If you see "9r on", press  key.
  - (4) Press **MENU** again. You want **oF**. If you see **ct** or **dc**, press  until you see **oF** (  cycles through **oF**, **ct**, **dc**).
  - (5) Press **Push-To-Talk** to end changes.
  - (6) Lock keys to prevent accidental change (press/hold for 7 secs  until see  ).
- Display shows , , and channel (big digits). If you see small digits, too, repeat steps 1-6. Step 4 must be **oF**.
-  **Note: press keys quickly else exits MENU.**

If you see "VOX" showing, cycle through the menu and turn all "on" features to "oF".

# Tuning Other Common Radios



Rotate ON/OFF to ON, set channel & no tone:

(1) If you see  ("keys are locked"), press and hold **"MENU"** until lock symbol *disappears*.

(2) Press **MENU** key.



Press '+' and '-' keys to change main channel

(3) Press **MENU** key again.

Press '+' and '-' keys to select 0  
(note: code 0 is "no tone" or CTCSS off)

(6) Press the **Push-To-Talk** button to end changes

(7) Lock keys to prevent accidental change  
(press and hold **"MENU"** until see ).

(8) The screen now shows , ,  
your channel (big digits) and  
small 0 digit (no CTCSS code).

*You do NOT want "VOX" showing – cycle through the menu and turn all "ON" features to "OFF".*

# Lock and Unlock HAM Radio

To move to a different HAM radio channel,

- unlock the keyboard,
- select the desired HAM channel,
- then re-lock the keyboard.



Always LOCK the HAM radio keyboard so settings can't accidentally change. While locked, you can still adjust the volume, transmit and listen (on the current memory channel), and use the unlock key.



## Wouxun KG-UV3D (and BaoFeng UV-5R)

UNLOCK or LOCK the keyboard:

- **press and hold** the lock key **#π0** until the lock icon in the display disappears or appears.



## Yaesu FT-60R

UNLOCK or LOCK the keyboard:

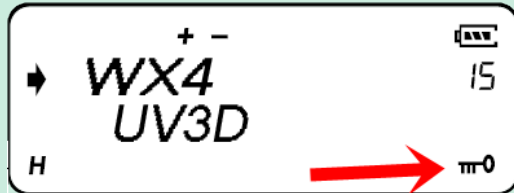
- **Press** the **[FW]** key,
  - then **press** the **[6/LOCK]** key.
- Every time you do this, the lock icon in the display disappears or appears.

# Changing HAM Radio Memory Channels

Once the keyboard is UNLOCKED (see previous slide), you can select pre-programmed memory channels. Always RE-LOCK your radio.

## Wouxun KG-3D (and BaoFeng UV-5R)

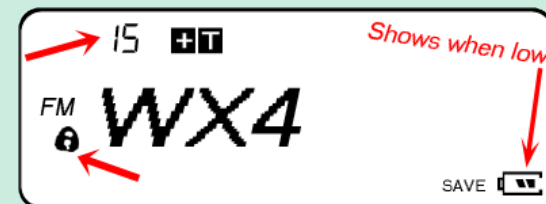
- UNLOCK the keyboard, then
  - use the up or down arrows to change memory channels
- OR
- press the three digit number<sup>1</sup> of the channel (for example, press keys 0, 1, 5)
  - RE-LOCK the keyboard.



<sup>1</sup> Note: If you enter only 1 or 2 digits instead of all 3, the radio may just sit there for a few seconds, and then return to the previous channel.

## Yaesu FT-60R

- UNLOCK the keyboard, then
  - use the up or down arrows to change memory channels
- OR
- press the digits of the channel number (for example, press key 1, key 5<sup>\*\*</sup>)
  - press the [FW] key.
  - RE-LOCK the keyboard.



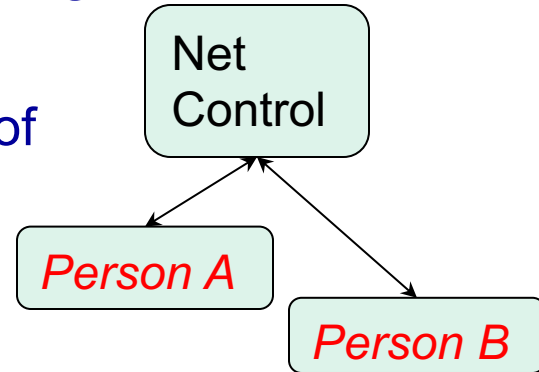
**\*\* NEVER press a leading 0!!! You'll need to press key 0 again to remove ☒ !!**

# Golden Rules of Communicating

- ◆ ***Emergency communications always go first.***
- ◆ Mostly listen! Don't try to talk if someone is using the channel. Only one person can talk at a time – all others have to listen.
- ◆ Speak clearly, calmly, carefully in a normal voice when it is your turn.
- ◆ Even in a noisy place where it is hard for you to hear, you speak in a normal voice. ***Talking “louder” into the radio doesn't help*** – it only comes out garbled at the other end!
- ◆ Get the message across without a lot of words.
- ◆ Use your TACTICAL CALL-SIGN to identify yourself. If you take the HAM CRAM next month, you'll learn when to use your HAM call-sign in addition to your tactical call-sign!

# Directed Radio Net Etiquette, Part 1 of 2

1. The people in your drill group worked together to *share a common radio channel* – this is a network of radios (or “*net*”). Since two people can’t talk at the same time, *one person controls who talks next*.



2. Suppose *Person A* wants to talk to **Control** and, at the same time, *Person B* also wants to talk to **Control**.

3. *Person A* and *Person B* request a “turn” to talk by saying just their call signs. **Control** sorts out the double & says “Person..., go ahead, OVER.”

<area> <b>Control</b> says:	Someone with tactical call-sign [ <i>Person</i> ] says:
	Wait for silence (usually after you hear someone say “CLEAR”), then say “[Person]”
“[Person], STAND BY, OVER.” OR “[Person], go ahead, OVER.”	“STAND BY” means be quiet and patiently wait. Otherwise it is your turn.
	Conduct your business (e.g., <i>Ask Control a question or contact someone else</i> , etc.). Say “[Person], CLEAR.” when done with your business to alert Control to direct the next person to talk.

# Directed Radio Net Etiquette, Part 2 of 2

Remember...

- One person (**Control**) controls (“directs”) who talks next
- Ask **Control** for permission to speak
- Talk ONLY after **Control** says  
“<*your call-sign*>, go ahead, **OVER**”
- Answer PROMPTLY
  - Monitor the radio continuously
  - Answer immediately if you are called
- If you must leave early, or need to take a nature break, don't just leave the "air"
  - Otherwise **Control** wastes time trying to call or locate you when you are "not there"
  - Get a turn, and notify **Control** you'll be back in XX minutes
  - When you return, get a turn, and tell **Control** you are back.
- Emergency traffic (life or death, or immediate threat to property) takes precedence over all other messages

## International Telecommunication Union (ITU)

### Standard Phonetics for CERT

<i>A - Alpha</i>	<i>J - Juliet</i>	<i>S - Sierra</i>
<i>B - Bravo</i>	<i>K - Kilo</i>	<i>T - Tango</i>
<i>C - Charlie</i>	<i>L - Lima</i>	<i>U - Uniform</i>
<i>D - Delta</i>	<i>M - Mike</i>	<i>V - Victor</i>
<i>E - Echo</i>	<i>N - November</i>	<i>W - Whiskey</i>
<i>F - Foxtrot</i>	<i>O - Oscar</i>	<i>X - Xray</i>
<i>G - Golf</i>	<i>P - Papa</i>	<i>Y - Yankee</i>
<i>H - Hotel</i>	<i>Q - Quebec</i>	<i>Z - Zulu</i>
<i>I - India</i>	<i>R - Romeo</i>	

After the shaking stops,

- Take care of your family
- Tune your FRS radio to CHANNEL 8 (no tone)
- Tune your HAM radio to Channel 16
- LISTEN!
- Don't interrupt.
- Respond if you are called.
- Always follow the protocol defined by your CERT Area leadership.



## PRO WORDS - special procedural words to control who is talking and to promote efficiency

<b>EMERGENCY</b>	An <b>EMERGENCY</b> situation is imminent life or death/or imminent damage to property. Say during a <i>pause</i> .
<b>URGENT</b>	An <b>Urgent</b> situation is not an EMERGENCY , but is time critical or denotes a correction needed. Say during a <i>pause</i> .
<b>ROUTINE</b>	All other situations that are not an EMERGENCY nor Urgent are considered <b>Routine</b> .
<b>STAND BY</b>	Not ready; tells other party to wait
<b>GO AHEAD</b>	Net Control tells someone it is their turn to talk.
<b>OVER</b>	You are done talking and expect a reply.
<b>CLEAR</b>	You are done with this communication - the channel is free for use by someone else.
<b>OUT</b>	You are turning OFF your radio (no more contact).
<b>AFFIRMATIVE/ NEGATIVE</b>	Do NOT use single syllable words like “YES”, “NO”, “YUP”, or “NOPE”, which can become garbled over the air. Multi-syllable words prevent confusion.
<b>SAY AGAIN...</b>	You request the other person to repeat the previous transmission. “ <i>SAY AGAIN AFTER...</i> ”, “ <i>SAY AGAIN BEFORE...</i> ”, “ <i>SAY AGAIN BETWEEN...</i> ”, “ <i>SAY AGAIN ALL</i> ”, etc. Don’t say “Repeat” which can be garbled, too.
<b>CORRECTION</b>	Means you are sending corrected information. (“Turn right at the corner. <b>CORRECTION</b> turn left at the corner”)
<b>ACKNOWLEDGED</b>	The message is completely received and understood, and that you’ll comply. It does NOT mean YES or NO.
<b>ROGER THAT</b>	Radio slang for <b>ACKNOWLEDGED</b> .
<b>I COPIED ...</b>	You are repeating what you heard.
<b>I SPELL...</b>	Indicates you are using the CERT phonetic alphabet to spell a difficult word or individual letters. (“ <i>We need onyx. I SPELL: Oscar, November, Yankee, X-Ray.</i> ” “ <i>My HAM call-sign is Whiskey 6 Golf Sierra Mike.</i> ”)
<b>LETTER(S) NUMBER(S) SYMBOL</b>	“ <i>Part number is CZ7.4 I spell Charlie, Zulu, NUMBER 7, SYMBOL period NUMBER 4.</i> ” Don’t say “ <i>Seven-hundred-six.</i> ” Say “ <i>FIGURES seven, zero, six.</i> ” Say “ <i>ZERO</i> ” for number ‘0’ (not “Oh”); “ <i>NINER</i> ” for number ‘9’ (not “nine”).
<b>CTCSS or PL or TONE</b>	“ <i>tone squelch</i> ” – don’t use! Radio must receive a special tone or else it squelchs sound. The channel and “tone” must match on both FRS radios or else you won’t hear each other!
<b>RADIO CHECK</b>	You are asking for anyone to confirm that your radio is working. “ <i>Loud and clear</i> ” means your signal is great!

# Different CERT uses, prices, features

0.75-1W



0.50W FRS/GMRS



5W HAM



5W HAM



10W HAM



# Where to buy radios


- ◆ **FRS** - No license - Amazon, REI and others sell.
  - *Want to use AA batteries.*
  - Ignore mileage claims.
  - For example, Motorola EM-1000, Midland GXT710, etc.
  - NOTE: only use ch 8-14  
(you need a \$65 GMRS license to use channels 1-7,15-22).
- ◆ **HAM** – pass a test to get a license
  - take the “*CERT Ham Licensing/Training Course*”;
  - OR take a Salvation Army class, then take a test at MDARC.
  - OR buy a study guide  
(see <http://www.mdarc.org/activities/license-testing>)
  - *In any case, then take the “CERT Getting on the Air” classes.*
- ◆ Buy a radio with the HAM Radio Group Purchase (e.g., Wouxun or Yaesu)
- ◆ HAMS might also consider buying an FRS radio.

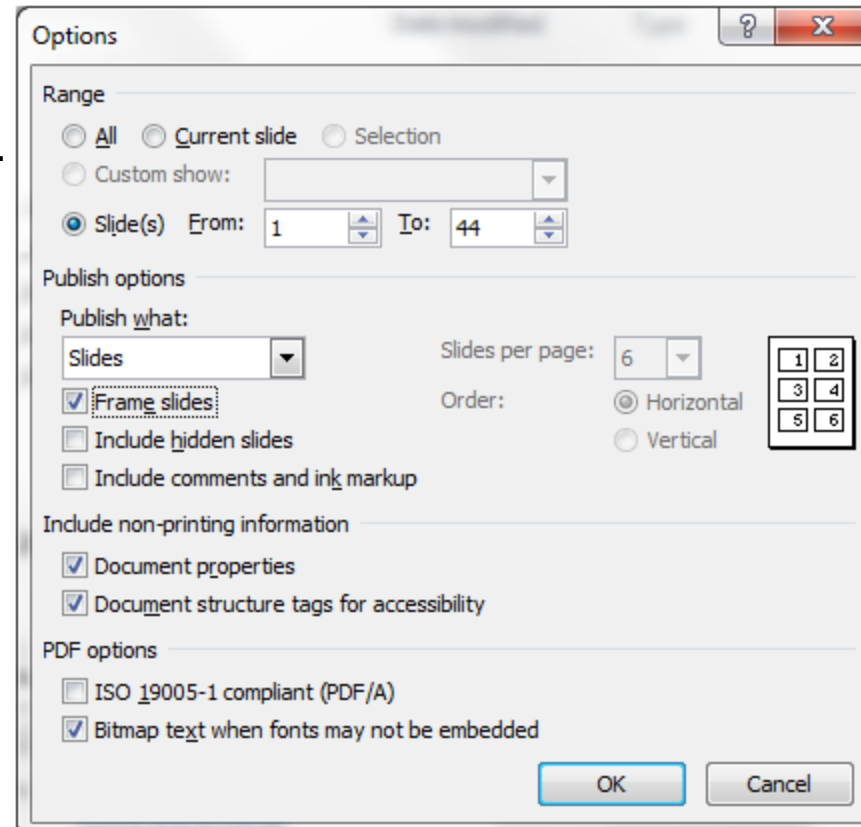
End of the FRS Presentation

# Creating the Student HANDOUT document

Note: Some typos to version Nov 19 were fixed to create version Nov 20. (tnxs KI6LNB)

To create Powerpoint Lecture and Student Handout for a class,

1. Save current “*ALL FRS Classes*”.pptx.
2. Create Powerpoint Lecture for a class
  - a. Click “**Save As...**” to a class specific name (e.g., “*Lecture, CERT FRS Class*”; “*Lecture, CERT Get on Air Class 1*”; or “*Lecture, CERT Cont Ed*”).
  - b. Open the new .pptx file.
  - c. Delete *slides* special to other classes.
  - d. Remove *sections* for other classes.
  - e. Remove *headings* special for this class (see  symbol)
  - f. Save the new .pptx file again.
3. Create a PDF file from the new .pptx
  - a. Click “**Save As...**” to a PDF file
  - b. Click “**Options...**”
    - “**Slide(s)**” 1 to ## (slide just before these instructions)
    - Click “**Frame slides**”
    - Click “**OK**”
  - c. Click “**Publish**”



4. To create the Student Handout pdf file (2 slides per page)...
  - a. Open new class specific PDF file with Adobe Reader.
  - b. Orient the slides for printing - click **View, Rotate View, Clockwise**
  - c. Click "**Print**"
    - "**Printer**" *Microsoft Print to PDF*  
(or some print-to-file option)
    - Click printer "**Properties**",  
select *Portrait*, click **Advanced Letter, OK, OK.**
    - "**Pages to Print**" - *All*
    - "**Page Sizing & Handling**" – "*Multiple*",  
2 pages per sheet, *Horizontal Reversed* page order.
    - "**Orientation:**" *Portrait*
    - Click "**Print**" to create a pdf file with 2 slides per page.
    - *MS Print to PDF* will popup asking for an output filename –  
name it "*Lecture Student Handout ... etc.*" (**bug in MS Print to PDF – no commas or special punctuation in filename or directory name AND save to a short directory name – e.g., c:\temp\ !**)
    - Give file to whomever is going to print the student handouts.
5. To actually print the student handout on paper
  - a. Open 2 slides per page PDF file with Adobe
  - b. Select a real "**Printer:**"
  - c. "**Page Sizing and Handling**" "*Size*", "*Fit*",  
"*Print both sides*", "*Flip on long edge*"  
*Orientation "Auto portrait/landscape"*
  - d. "**Print**"