Community Emergency Response Team

CERT
LAMORINDA COMMUNITY EMERGENCY RESPONSE TEAM

CERT Emergency Communication

using a Baofeng UV-82HP

Released: 16 January 2026 **Lamorinda CERT**

0

Community Emergency Response Team

- Personal safety is ALWAYS the number one priority
- Show up prepared
  - Wear appropriate clothing and footwear, have WATER
  - Wear PPE – your personal protective equipment …mask, gloves, helmet, goggles, boots, etc.
  - Have at least one communications device: cell, radio, etc.
- Work as a team
- Size-up - maintain situational awareness
- Stand in a safe place when speaking on the radio (not the middle of the road)
- The CERT goal is to do the **Greatest Good for the Greatest Number**
- *Hope for the best but plan for the worst!*

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1

Unit Objectives & Topics

- **Why** communications are important
- **How** do we communicate
  - Why two-way radios
  - How to use a hand-held radio
- **What** information is to be communicated
  - Actionable content
- **When** information should be communicated
  - Precedence, what can be delayed
  - How to compose a message

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2

Why Communications are Important

- Effective communications is the greatest logistical problem during an emergency event
- CERT volunteers can be part of the solution



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3

How Do We Communicate?

Landlines, Cell Phones and Internet

- We use these every day but we can't count on them after a disaster
- All of these technologies depend on wires or fiber optics and electricity
- After a disaster these may be out of order for days, weeks or even months!





4

Why a 2-way Radio?

- If landline phones work, use them but expect them to be very busy
- Cell phones may work but will be very busy also
  - Text messages use less bandwidth and may work better than voice calls
  - Texts are "store and forward" so they may be delayed
- Use something that does not depend on wires, fiber cables or grid electricity
- Radios will work when all else is down

5

Using a 2-way Radio

- Be polite and mindful of who might be listening
- Exchange questions and answers in brief, clear language, understandable to all who may be listening
  - NO police “10” codes, just plain language
  - NO CB jargon
  - NO slang or ethnic/gender slurs
- You are conveying important information to people you may neither know nor have worked with in the past
- Remember, radio transmissions are NOT secure and may be heard by many people!

6

Make Friends with your Radio

Key skills: familiarize yourself with radio, load batteries, check settings, adjust volume

- Controls
  - On/Off
  - Volume Control
  - Lock Settings
  - PTT
  - Antenna
  - Microphone
  - Speaker



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7

Selecting a Channel

- To select a channel:
  - Turn on radio
  - Note channel in window – active has arrow on left
    - Upper channel is “A” channel
    - Lower channel is “B” channel



  - Select other channel with the EXIT/AB button or the Push-to-Talk Switch
  - Use ▲ and ▼ keys to move up or down to desired channel or enter 3 digit channel number on keypad
- Lock your settings by pressing Lock Button for 2 seconds
- Your radio is now ready for communications.

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8

Communications

- **WHAT**
- **WHEN**
- **WHO**
- **HOW**

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9

Communications: **WHAT**

- Effective communications promotes safety
  - Calling for help when needed—emergencies and urgent requests
  - Reporting safety-related incidents or concerns: Casuality Reports and Damage Assessments
  - Search and Rescue Intra-team communications
  - Status Reports – Team leaders keeping track of team members and their needs
  - Mutual Aid Requests
  - Health and Welfare messages

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10

Communications: **WHEN**

- Determining message precedence is essential
  - Effective communication *prioritizes* messages
  - CERT Team Leader (Incident Commander) determines what to send to City EOC



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11

Communications: **WHEN**

- **Emergency, interrupt traffic:**
  Immediate threat to life, property, or the environment, e.g., mass casualty, spreading fire, major infrastructure failure, large hazardous material release

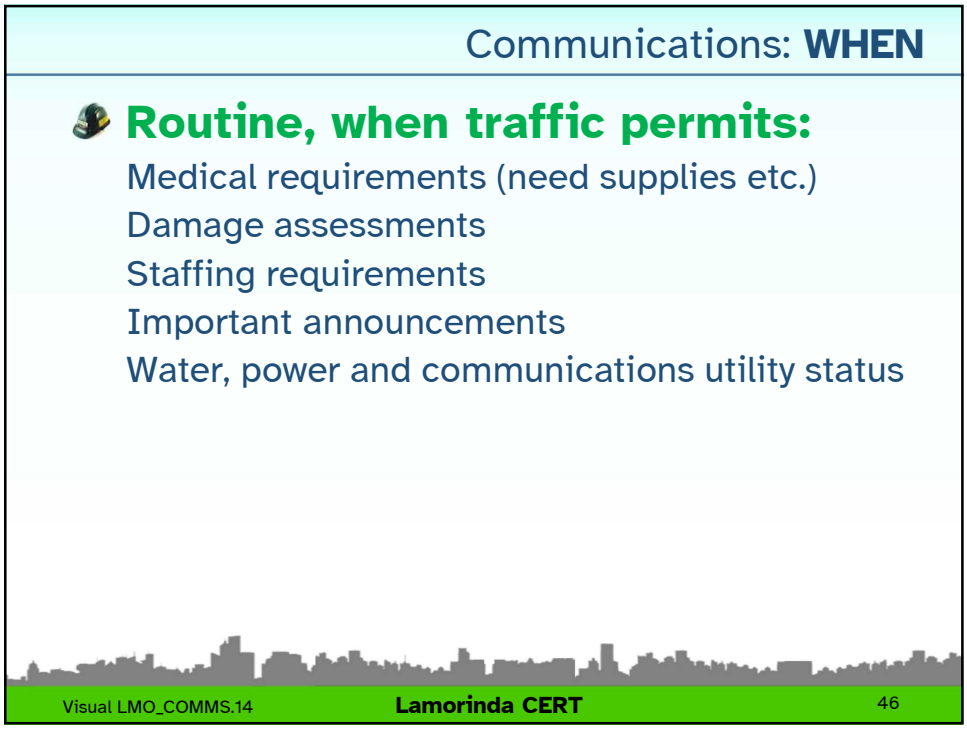
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Communications: **WHEN**

- **Priority, queued:**
  Likely to escalate rapidly if not dealt with promptly, e.g., major transportation artery blocked, trapped victims. Most traffic on an emergency net should be Priority.



13


Communications: WHEN
Routine, when traffic permits:
Medical requirements (need supplies etc.)
Damage assessments
Staffing requirements
Important announcements
Water, power and communications utility status
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14


Communications: WHO
Who makes the decision?
In the field – individual CERT member or group lead
What
When – Emergency, Priority, or Routine
Who – All messages go to CERT ICP (Incident Command Post) or as designated by the local operations plan
At the CERT ICP – CERT Team Leader or delegate
Who – messages go to Incident ICP, EOC or CERT group (Operations, Plans, or Logistics)
At the EOC – City emergency manager or delegate
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15

Communications: **HOW**

- "Communicate like it's 1950" - Butte County ESO
- Bay Area Earthquake Plan, OES 2016
  - Neither landline nor cellular telephone systems will work for at least the first day post-event, probably longer, due to system overload and damage to cell phone towers
  - Loss of communications capabilities will impact the response and needed communication with the public

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16

Communications: **HOW**

- USGS
  - Assume cell network overloaded or damaged
  - Only 7% of landlines and cellular calls go through in the first few hours



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17

Communications: **HOW**

- There are multiple communication options

Mode	Technology	Plus	Minus
Simple	▪ Runner	▪ Reliable ▪ Flexible ▪ No special training	▪ Limited distance ▪ Slow
Conventional	▪ Landline ▪ Cell Phone ▪ Internet	▪ Familiar ▪ Texts may get through congested networks ▪ Potential high data rates	▪ Depends on wires or fiber optics and electricity ▪ Likely overwhelmed ▪ May be out for days, weeks, or even months
Emergency	Two-way Radio ▪ FRS ▪ GMRS ▪ MURS ▪ HAM	▪ HAM: Extremely reliable ▪ Infrastructure not required ▪ Long range with repeaters	▪ May require a license ▪ Complex radios ▪ Not secure

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18

Communications: **HOW**

- FRS/GMRS range is limited (without repeater)
- Realistic range is 1 to 2 miles
- Channels 8-14: about 1 block
- Ignore manufacturers' claims of range

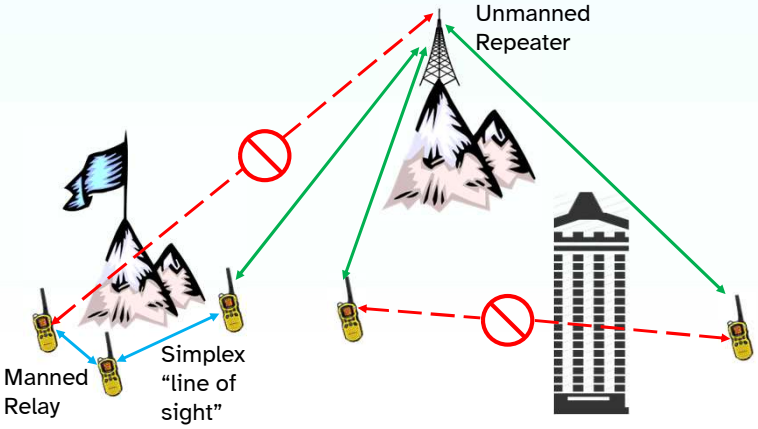


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19

Communications: **HOW**

- Repeaters and manned relays help overcome the range limitations



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20

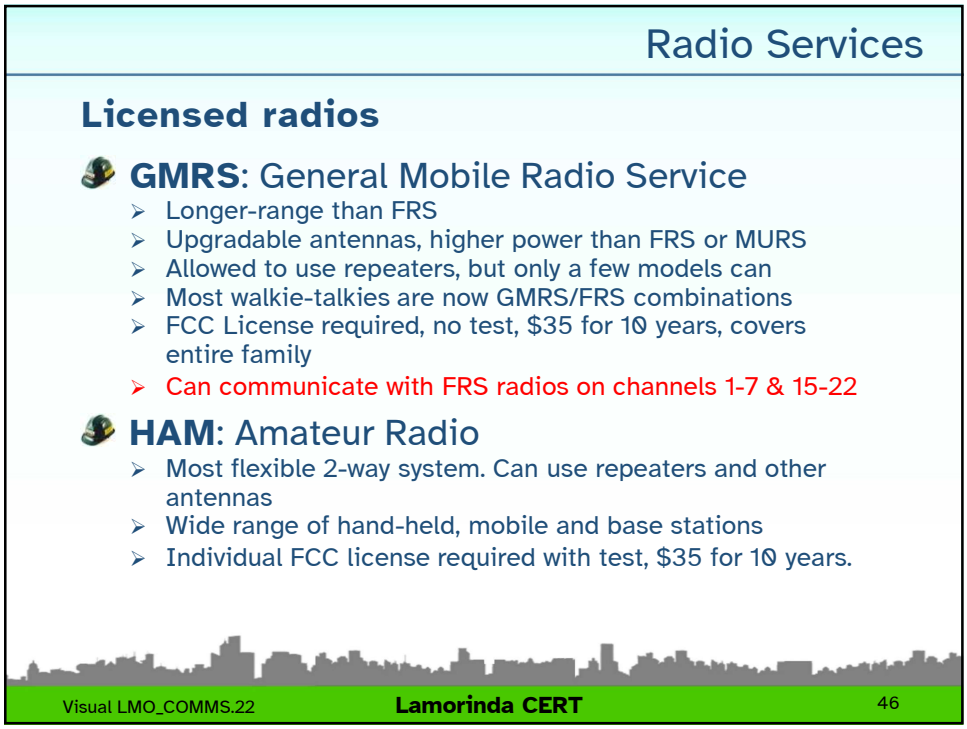
Radio Services

Unlicensed radios

- **FRS**: Family Radio Service
  - Short-range, unlicensed, 2-way radio system
  - Low-cost walkie-talkies you can purchase in local stores
  - Channels 1-22 (Ch 8-14 low power, 0.5 watt)
- **MURS**: Multi Use Radio Service
  - Short-range, unlicensed, 2-way radio system
  - Not common in our area so less interference than FRS
  - Low-cost walkie-talkies you can purchase on the internet
  - Channels 1-5
- **CB**: Citizen's Band Radio Service
  - Still available but not common anymore
  - More expensive than FRS or GMRS
  - 40 Channels

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21


Radio Services
Licensed radios
GMRS: General Mobile Radio Service
Longer-range than FRS
Upgradable antennas, higher power than FRS or MURS
Allowed to use repeaters, but only a few models can
Most walkie-talkies are now GMRS/FRS combinations
FCC License required, no test, $35 for 10 years, covers entire family
Can communicate with FRS radios on channels 1-7 & 15-22
HAM: Amateur Radio
Most flexible 2-way system. Can use repeaters and other antennas
Wide range of hand-held, mobile and base stations
Individual FCC license required with test, $35 for 10 years.
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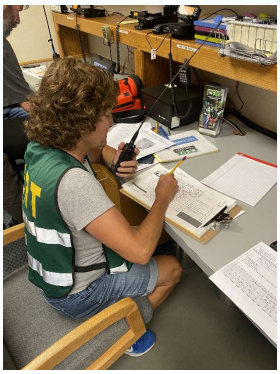
22


How to Speak on a Radio
Good communications practices are independent of device
Remember the radio A B Cs
Accuracy
Brevity
Clarity
Think about what you will say before getting on the air
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23

How to Speak on a Radio

- **A** ccuracy – What will you say?
  - **Who?** Identify yourself, use tactical call signs
  - **What?** What is happening?
  - **Where?** Where is the incident occurring
  - **When?** When is action required?
  - **How?** How should the situation be handled?



- Write down the answers before you get on the air

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24

How to Speak on a Radio

- **B** revity – 25 words or less!

There is a damaged house on Walnut Blvd. Boy it's a mess. The widows are crooked, and the garage looks like it fell on a car. There are a bunch of neighbors outside blocking the street. They tell me a family of four lives there. I hear voices and a barking dog, but no one is coming to the door. Lights are on upstairs. I'm walking down the block now to see if anything else is damaged. Oh, and I smelled some gas.

- Priority
- Severely damaged house at 2333 Walnut Blvd.
- 1 to 4 victims inside, condition unknown
- Gas Leak - Not shut off
- Send rescue team

- Many CERT teams have developed special forms to aid in message composition

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25

How to Speak on a Radio

C larity – How will you say it?

- Use phonetic alphabet for spelling out words when needed
  - CERT = Charlie Echo Romeo Tango
  - For numbers say “one niner eight fower” not “nineteen eighty-four”
- Speak slowly, clearly and calmly
- Break messages into 5-word groups with a pause – someone is trying to write it down!
- Recipient repeats back messages: **A**ccuracy is more important than speed

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26

Phonetic Alphabet

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

	FIGURES	3	TREE	7	SEV en
0	ZE ro	4	FOW er	8	AIT
1	WUN	5	FIFE	9	NIN er
2	TOO	6	SIX	.	DECIMAL

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27

How to Speak on a Radio

- **C** larity – Acceptable Jargon, Pro-Words
  - To make communications more clearly understood, use "Pro-Words" that are universally understood by radio communicators:
    - **GO AHEAD**: Invites a response
    - **OVER**: Finished talking
    - **CLEAR**: Finished talking, no response needed, will continue to monitor
    - **OUT**: Finished talking and leaving the net

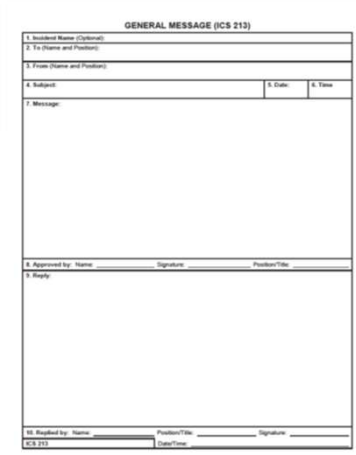
EMERGENCY: Immediate threat to life, property or the environment. You must STOP TALKING immediately and yield the frequency to the EMERGENCY traffic.

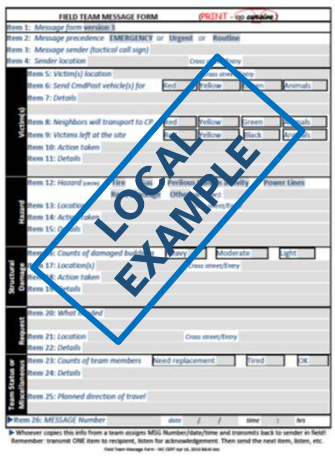
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28

Forms

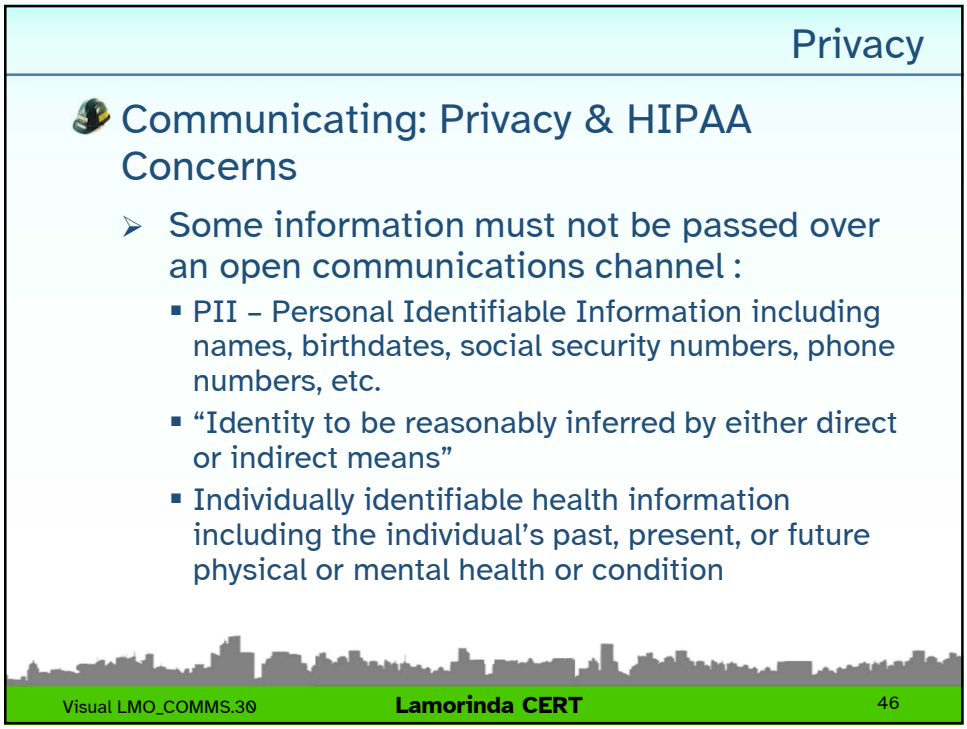
- Message forms help ensure the **ABC**s





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29


Privacy
Communicating: Privacy & HIPAA Concerns
Some information must not be passed over an open communications channel :
PII – Personal Identifiable Information including names, birthdates, social security numbers, phone numbers, etc.
"Identity to be reasonably inferred by either direct or indirect means"
Individually identifiable health information including the individual's past, present, or future physical or mental health or condition
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30


When You Venture Out in the World
Your team leader will tell you which channel
Test the radio *before* you venture out; talk to your team
"Lock" the settings; bring spare batteries
Hold the antenna vertically
To talk: hold radio VERY close to your mouth (1 - 2 inches),
then press the Push-to-Talk "PTT" button,
slight pause (2 count), then talk
SPEAK ..... SLOWLY..... AND ..... CLEARLY
To listen: let go of the "PTT" button
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31

Transmit Message

- **Skill: Efficient and effective transmission.** Transmit a message with Tactical Call sign and using proper protocol
- Get accustomed to listening, AND to writing (”scribing”)
- Instructor assigns Tactical Call signs to each group member, SAR 1, MEDICAL 2, etc.
- Instructor (TEAM LEADER) initiates communication with Student, using a tactical call, and exchanges message or question and answer

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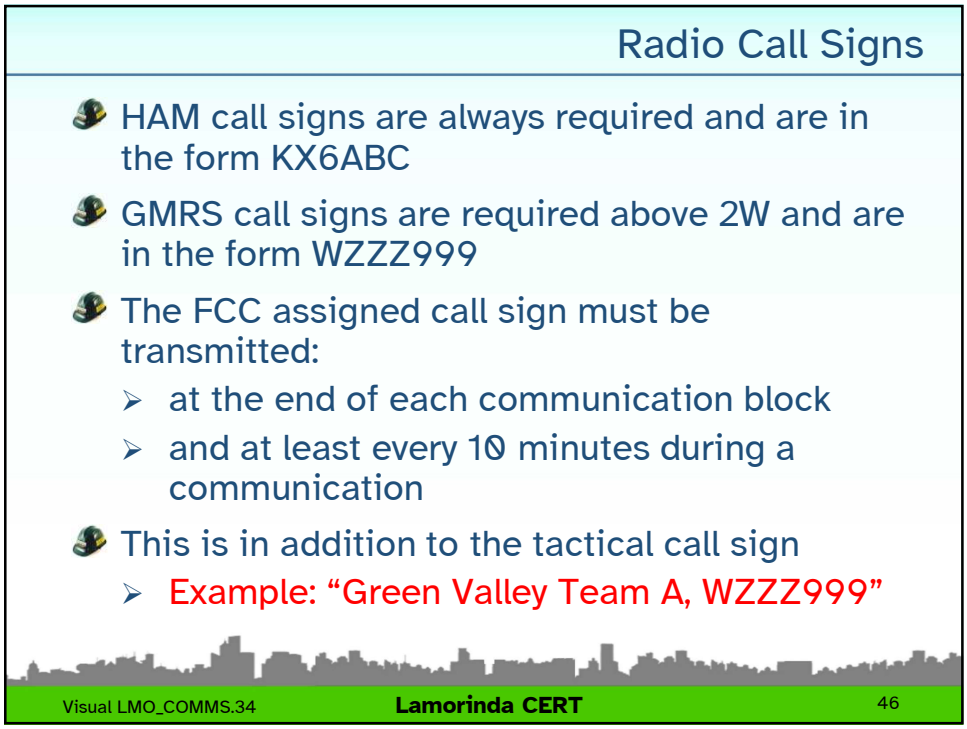
32

COMMS Briefing

- A “Just-In-Time” briefing before deployment is sound practice. This includes ‘friendly’ reminders.
- Safety first
- Listen before talking
- Push to talk, slight pause, talk, then release
- **ABC**s – **A**ccuracy, **B**revity, **C**larity
- Test radios; Hold antenna vertically
- Agree on ‘lost contact protocol’
  - Alternate channel
  - Change location to last successful communication
  - Return to base

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33


Radio Call Signs
HAM call signs are always required and are in the form KX6ABC
GMRS call signs are required above 2W and are in the form WZZZ999
The FCC assigned call sign must be transmitted:
at the end of each communication block
and at least every 10 minutes during a communication
This is in addition to the tactical call sign
Example: “Green Valley Team A, WZZZ999”
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34


Nets
There are regular radio nets in most areas
Participate to practice your radio skills
Meet people in your area who will be there following a disaster
Set up a regularly scheduled FRS / GMRS net in your neighborhood
Check your local CERT website for day and time of established nets
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35

Net Control Operator

- Radio "traffic cop"
- Coordinates to ensure orderly radio traffic
- Duties:
  - Acknowledges your turn to speak
  - Directs you when to stand by
  - Prioritizes calls based on the nature of the message
  - May direct you to a different channel



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36

CAUTIONS

- The general public and the media can hear what you are saying on radios
- During drills, make sure to announce that it is an exercise at least every ten minutes

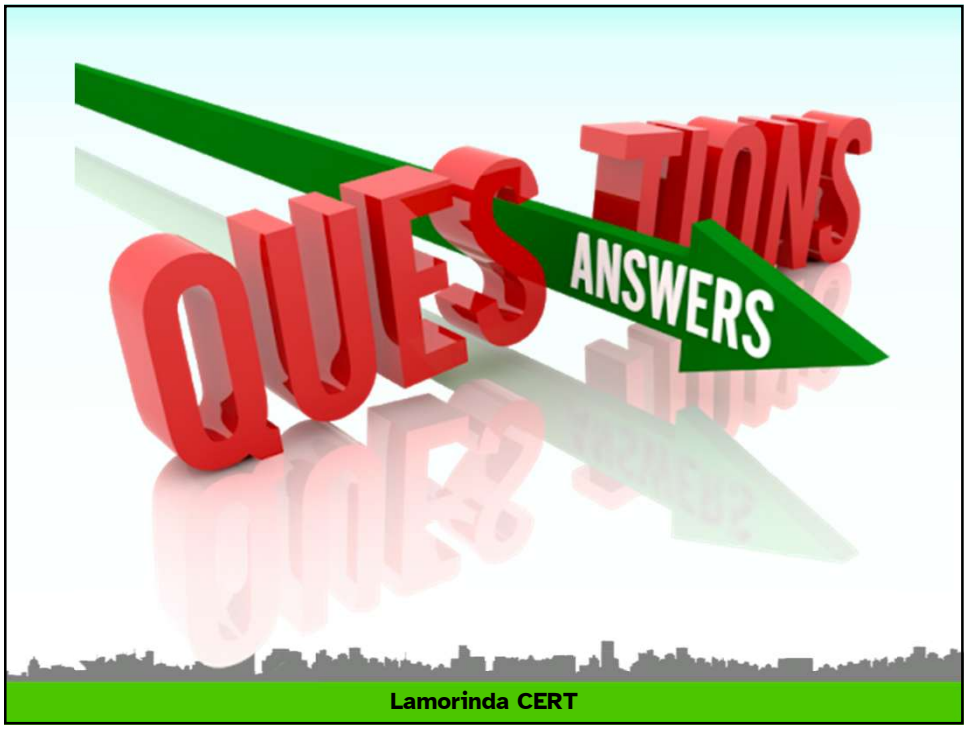
  "***All Stations, this is an EXERCISE,***

  This is ONLY an Exercise"
- If you have a REAL emergency during an exercise, state

  "NO PLAY" or **"REAL WORLD"**
- Think about WHAT you want to say and HOW to say it!

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37



38

Takeaways

- Effective communications:
  - Is the greatest logistical problem during any emergency
  - Promotes safety
  - Prioritizes messages
  - Gets the message to the correct destination
  - Uses clear, unambiguous, language

Visual LMO_COMMS.39 Lamorinda CERT 46

39

Takeaways

- Radio **ABC**s
  - **A** ccuracy
  - **B** revity
  - **C** larity
- Think about priorities and what you will say before getting on the air
- Listen before talking
- 25 words or fewer
- Remember, radio transmissions are NOT secure and may be heard by many people!

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40

COMMS Exercise

Dominos Exchange



20 minute exercise

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41

Sample Dominoes Exchange

Each team will be given a pair of pattern sheets. Each has a radio channel assigned at the bottom of the sheet.

Test your radios before starting the exercise.

If you have cross-talk on your radios, switch to the *alternate radio channel* as shown. It will say something like:

Your radio channel is LARIG 098. Your alternate radio channel is LARIG 076.

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42

Sample Dominoes Exchange

To practice with radios, each team has at least 4 players, A-D.

One team member (A) goes outside with the illustration and, tile by tile, describes the position to the team inside.

Inside team member (B), the radio operator, records the instructions and

Passes it to the tile manager (C) who then finds the correct tile and

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43

Sample Dominoes Exchange

Passes the tile to the player (D) who places it in the position as described.

At the end of the practice, the (A) outside member brings in the illustration and compares to the layout as placed. A point is awarded for each tile correctly placed.

The winner is the team with the most points.

You have 20 minutes for this exercise.

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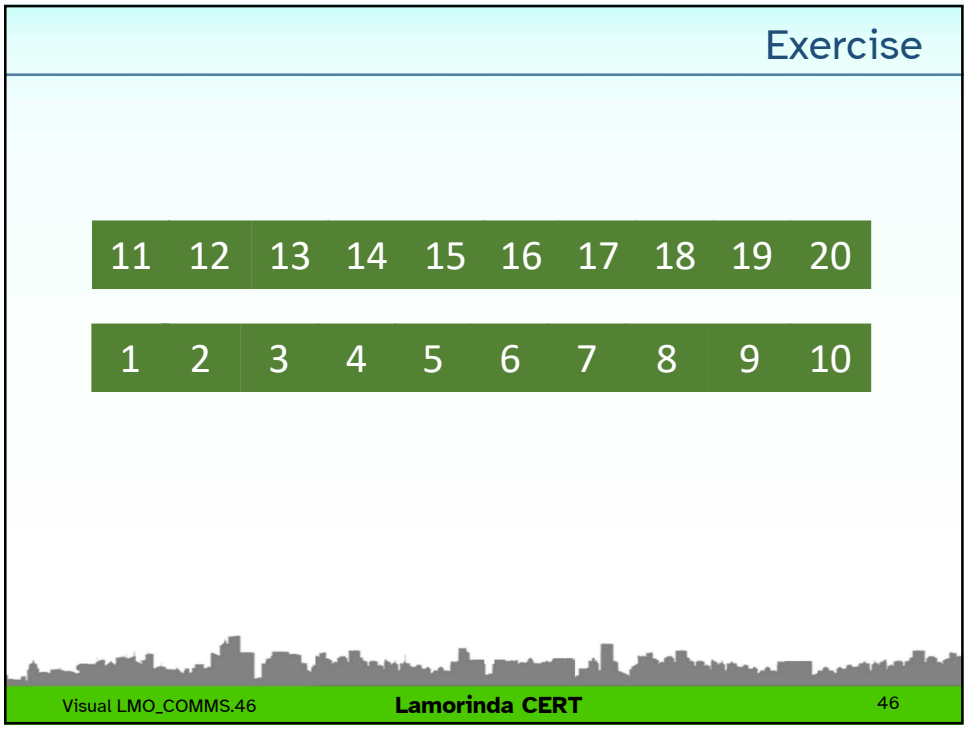
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Sample Dominoes Exchange

- "Team 3-B, this is Team 3-A, Over"
  - "Team 3-A this is Team 3-B, Over"
- "Place 9x0 vertically at bottom center, 0 at bottom, Over"
  - "9x0 vertically at bottom center, 0 at bottom, Over"
- "Place 9x9 horizonally above 9x0, Over"
  - "Placing 9x9 horizontally above 9x0"
  - "Team 3-B, Clear"
- Note, message was repeated back

Visual LMO_COMMS.45 **Lamorinda CERT** 46

45


Exercise
11 12 13 14 15 16 17 18 19 20
1 2 3 4 5 6 7 8 9 10
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46


COMMS Exercise
Exercise is OVER
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47