CERT Supplemental Training

Emergency Communications



CERT COMMUNITY EMERGENCY RESPONSE TEAM

THE CITY OF BURLINGAME CALIFORNIA INCORPORATED 1908

TOWN OF HILLSBOROUGH INCORPORATED MAY V MDCMXI

MILLBRAE

U.S. DEPARTMENT OF HOMELAND SECURITY

FEMA

Unit Objectives

- Describe the importance of communications in emergency response
- Explain CERT communication roles and structure during an activation
- Identify communication methods and plans
- Demonstrate basic radio operation and procedures
- Practice effective radio communications and documentation

Importance of Communications

- Essential for effective emergency response and coordination
- Provides situational awareness and supports decision-making
- Helps identify hazards, needs, and available resources
- Communication systems may be damaged or overwhelmed during disasters
- Clear, accurate, and timely information is critical

CERT Communications Roles

- **Intra-team:** Communication within a CERT team
- **Inter-team:** Communication between CERT teams
- **Communicating up:** Reporting to the CERT Command Post or designated Net Control
- **Communicating down:** Receiving assignments, instructions, and updates



CERT Communications Roles (cont'd)

- CERT members serve as the eyes and ears of emergency responders
- Effective communications promotes safety
  - Calling for help when needed
  - Reporting safety-related incidents or concerns



CERT Communications Structure

CCFD CERT
CENTRAL COUNTY FIRE DEPARTMENT
BURLINGAME • HILLSBOROUGH • MILLBRAE



Emergency Operations Center (EOC)

- Jurisdiction-wide coordination
- Resource support
- Information sharing with other agencies

Reports and information
Assignments and support



CERT Command Post

- Coordinates CERT operations
- Assigns teams and tasks
- Consolidates and shares information

Team reports and requests
Tasking and information



Net Control

- Manages radio communications
- Relays information between teams and the Command Post
- Maintains communication log

Information up
Assignments down
Radio communications (both directions)

CERT Team 1



Neighborhood Assessment and Information Gathering

CERT Team 2



Neighborhood Assessment and Information Gathering

CERT Team 3



Neighborhood Assessment and Information Gathering

Communications Plan

- Establishes communication methods and procedures
- Identifies radio channels, call signs, and reporting structure
- Includes primary and alternate communication methods
- Ensures consistent and coordinated communications
- Follow the communications plan for your assignment



INCIDENT RADIO COMMUNICATIONS PLAN (ICS 205)

1. Incident Name:	2. Date/Time Prepared: Date: Time:	3. Operational Period: Date From: Date To: Time From: Time To:

4. Basic Radio Channel Use:

Zone Grp.	Ch #	Function	Channel Name/Trunked Radio System Talkgroup	Assignment	RX Freq N or W	RX Tone/NAC	TX Freq N or W	TX Tone/NAC	Mode (A, D, or M)	Remarks

5. Special Instructions:

6. Prepared by (Communications Unit Leader) Name: _____ Signature: _____

ICS 205	IAP Page _____	Date/Time: _____

Communications Methods

- **Landlines:** Traditional phone service may work during outages; VoIP requires power and network connectivity
- **Cell phones/text:** Convenient, but networks may be overwhelmed
- **Internet-based apps:** Require connectivity (e.g., Zello)
- **Two-way radios:** Direct communication without cellular service
- **Amateur radio:** Additional capabilities through licensed operators
- **Runners:** Alternative when other methods fail

Zello

- Push-to-talk communication app using cellular data or Wi-Fi
- Allows group communications through designated channels
- Requires internet connectivity
- BNN Zello Net: Regular radio-style communications practice
- CCFD CERT Zello: First responder communication pilot coming soon

Two-Way Radio Basics

- Allows direct voice communication between users
- Does not require cellular or internet service for direct communication
- Uses designated frequencies and channels
- Only one person can transmit on a channel at a time
- Range varies with terrain, buildings, and equipment (repeater vs. simplex)
- Conversations may be heard by others

Radio Services

- FRS: Short-range, license-free handheld radios
- GMRS: Greater equipment flexibility; FCC license generally required
- Amateur radio: Licensed operators; additional frequency bands and capabilities
- Public safety radio: Used by emergency response agencies

CCFD CERT primarily practices with FRS radios during Basic Training.

FRS Radios

- **Family Radio Service (FRS)**
- 22 shared channels
- No individual FCC license required
- Commonly used for neighborhood and CERT communications
- Limited range, especially around buildings and terrain
  - No external antennas
- Channels are not private



GMRS Radios

- **General Mobile Radio Service (GMRS)**
- 22 shared channels, plus additional repeater channels
- FCC license required; no examination
  - $35 for 10-years; covers immediate family too
- Higher-power equipment and repeater capabilities
- Can provide greater range than FRS
- Shares some frequencies with FRS



MURS Radios

- **Multi-Use Radio Service (MURS)**
- 5 shared VHF channels
- No individual FCC license required
- Maximum 2 watts of transmitter power
- Repeaters not permitted
- Useful for short-range communications; range varies with terrain and obstructions



Amateur (Ham) Radio

- <u>Requires an FCC amateur radio license and examination</u>
- Multiple frequency bands and operating modes
- Supports local, regional, and long-distance communications
  - Can use repeaters to extend coverage
- Voice, text, and digital communications
- Used by emergency communications groups such as ARES and RACES



Amateur (Ham) Radio

BAEARS

Bay Area Educational Amateur Radio Society



Sunday, November 22nd, 2026 – Cupertino, CA

AMATEUR RADIO

LICENSE TESTING

This session is produced by the Bay Area Educational Amateur Radio Society – Member W5YI VEC

Study Session, Followed by Exam

When: *Sunday, November 22nd, 2026*
8:00am – 5:00pm

Where: *Cupertino, CA*

Fee: *$35.00 at the Door*

Sponsored by:
Sunnyvale Rod & Gun Club
(Home Page
(www.sunnyvalegunclub.com))

Questions: *Ross Peterson wb6zbu@arrl.net or 650-349-5349*

Register: *www.baears.com*

Class size is limited, reservations are **required**.

Prospective Hams should have an active Ham as a sponsor to assist in the familiarization with amateur operation

Reserve Your Space - Be a Ham!

Can't make this class? Check back on our website for future sessions.

Public Safety Radios

- Used by fire, law enforcement, EMS, and other agencies
- Operate on authorized public safety radio systems
- May use repeaters and trunked radio networks
- Require agency authorization and approved equipment
- <u>CERT members do not normally operate on public safety channels</u>



CB Radios

- **Citizens Band (CB) Radio**
- 40 shared channels
- No individual FCC license required
- Commonly used by truckers and motorists
- Primarily intended for short-range communications
- Susceptible to interference and inconsistent coverage
- Generally not preferred for CERT communications



Basic Radio Anatomy



Volume & On/Off Switch

Antenna

Microphone

Speaker

Basic Radio Anatomy (cont'd)



Channels and Privacy Codes



- Radios must be on the same compatible channel
- Channels correspond to specific frequencies
- Privacy codes use CTCSS or DCS tones
- Privacy codes do not make conversations private
- Incorrect settings can prevent messages from being heard

Radio Operation

- Turn on and adjust volume
- Select the assigned channel and privacy code
- Listen before transmitting
- Press PTT and pause briefly
- Speak clearly at a normal volume
- Release PTT to listen

Improving Radio Reception

- Keep the antenna vertical
- Move away from buildings and obstructions
- Seek higher ground when safe
- Change position if reception is poor
- Keep transmissions brief to conserve battery life

Net Operations

- Net Control coordinates radio traffic
- Directs stations when to transmit
- Prioritizes urgent messages
- May instruct stations to stand by
- May direct users to another channel
- Maintains communication discipline



Tactical Call Signs

- Identify a team, location, or function
- Assigned as part of the communications plan
- Avoid using personal names, if possible
- Remain consistent throughout the assignment
- Examples: CERT Command, Net Control, Team 1, Medical, Search Team 2

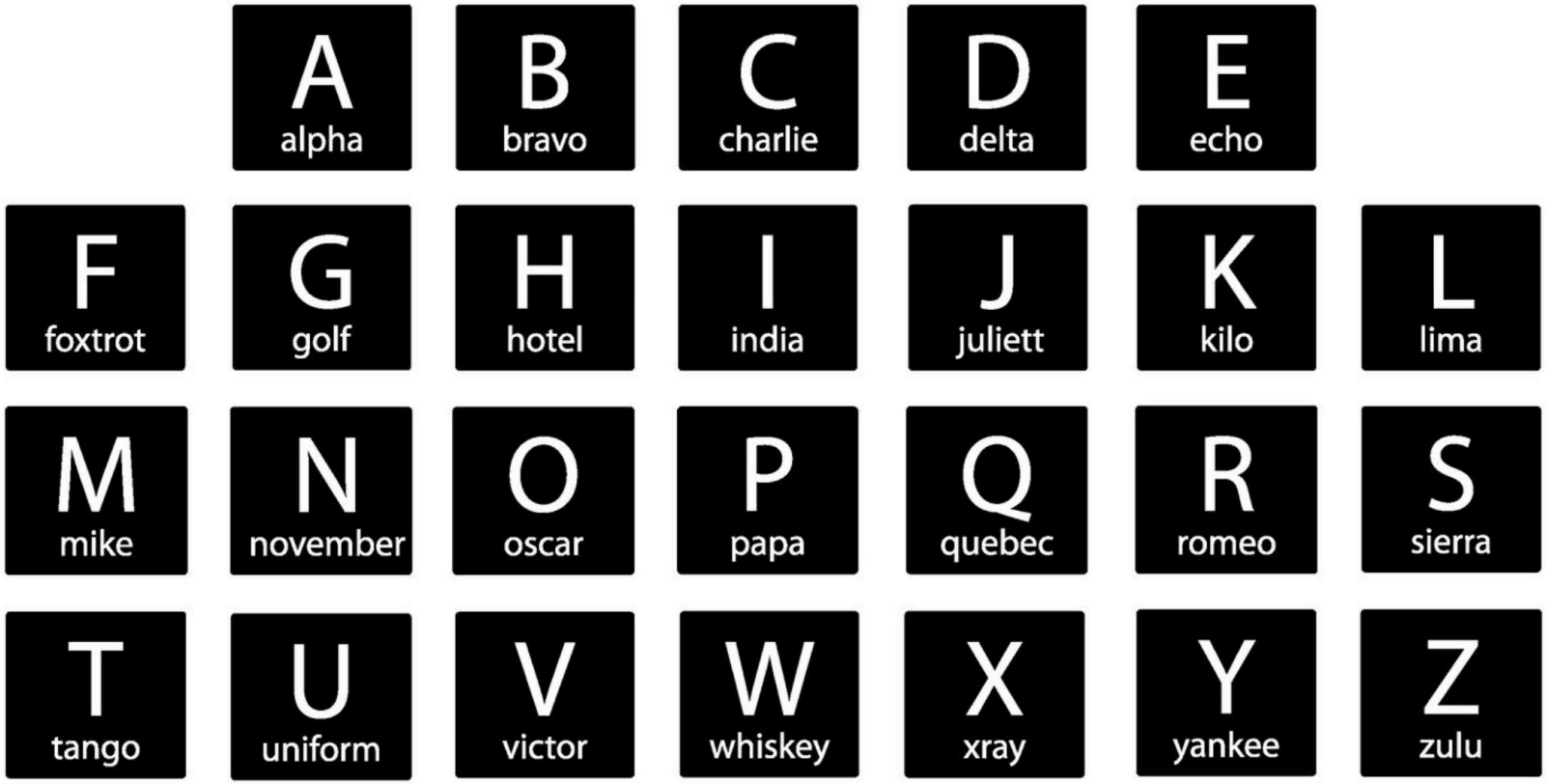
Radio Procedures

- Listen before transmitting
- Identify who you are calling and who you are
- Think before speaking
- Speak slowly, clearly, and concisely
- Acknowledge messages received
- Avoid unnecessary radio traffic
- Give priority to emergency communications

Common Pro-Words

Pro-word	Meaning
Go ahead	Proceed with your message
Copy	Message received and understood
Stand by	Wait
Say again	Repeat the message
Affirmative	Yes
Negative	No
Over	Response expected
Out / Clear	Exchange complete

Phonetic Alphabet



Making a Radio Call

- **Team 1:** "Net Control, this is Team 1."
- **Net Control:** "Team 1, go ahead."
- **Team 1:** "Fallen tree blocking both lanes of Oak Street near Pine Avenue."
- **Net Control:** "Copy, fallen tree blocking both lanes of Oak Street near Pine Avenue."
- **Team 1:** "Correct. Team 1 clear."

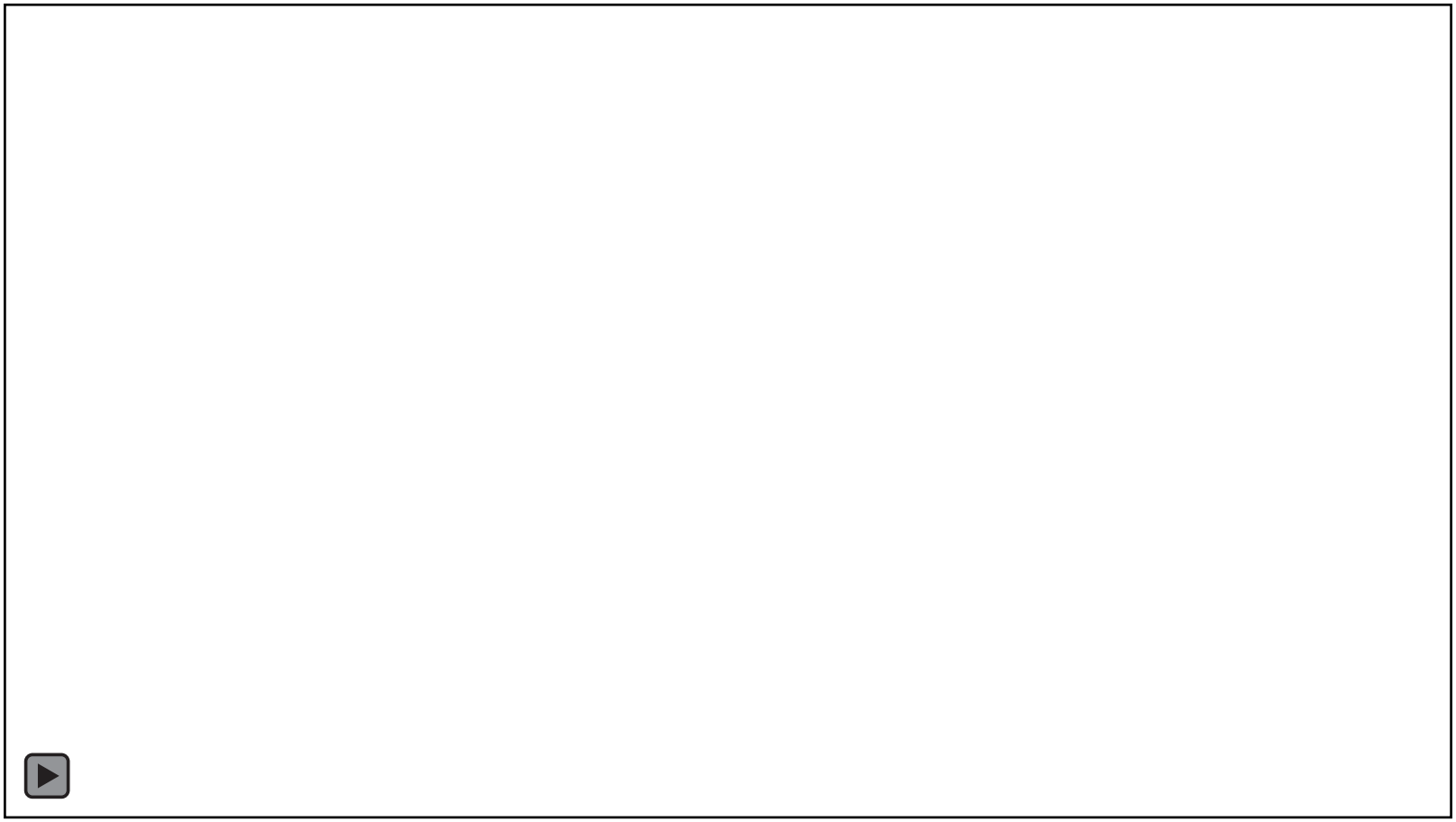
Practical Exercise: Radio Familiarization

- Work with a partner
- Identify basic radio controls
- Turn on and adjust volume
- Confirm assigned channel
- Practice using Push-to-Talk (PTT)
- Complete a radio check
- Exchange a short message and switch roles

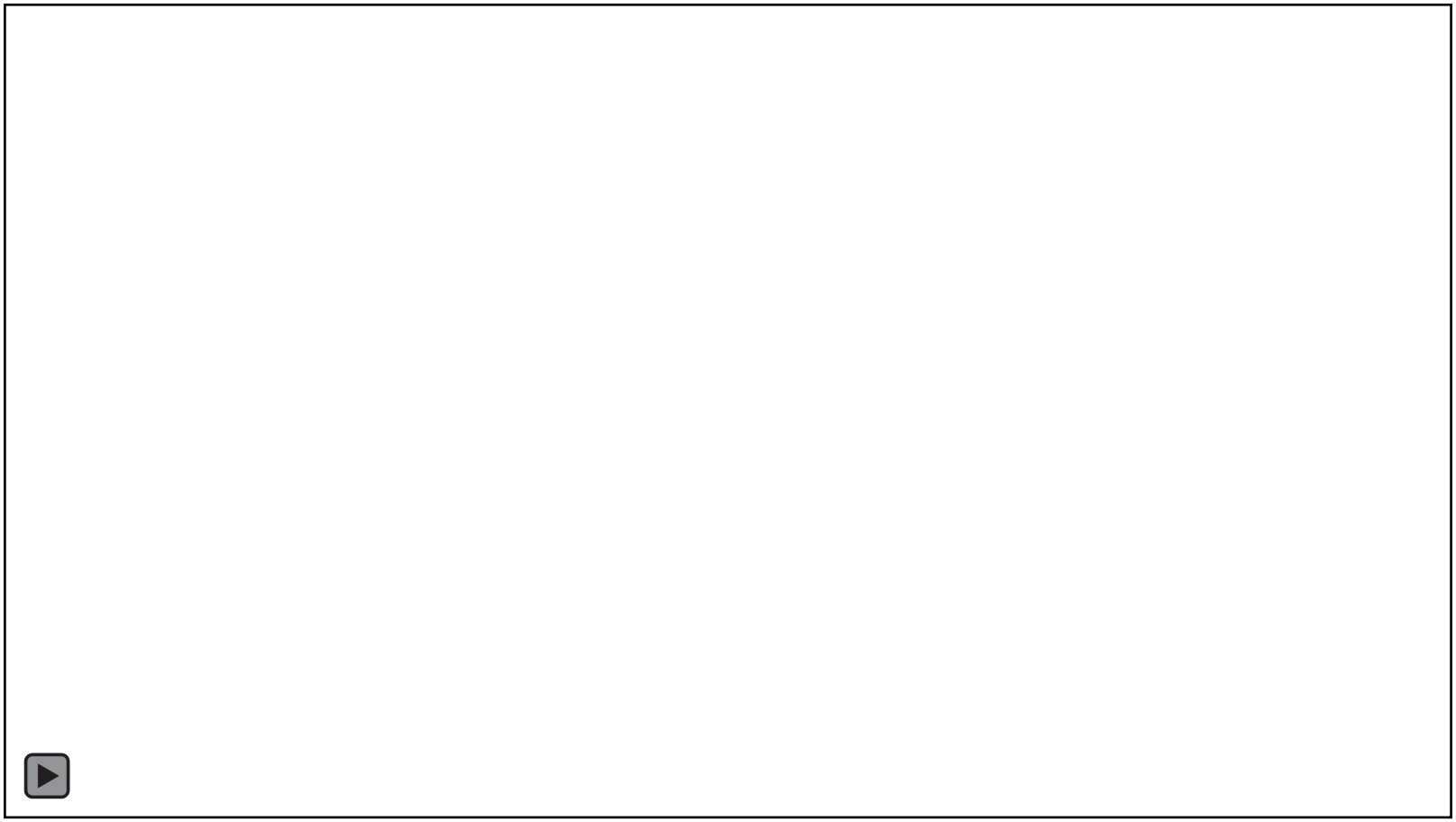
Practical Exercise: Radio Dos & Don'ts

- Listen to three radio exchanges
- Identify what was done correctly or incorrectly
- Discuss how each exchange could be improved
- Compare with the corrected transmissions

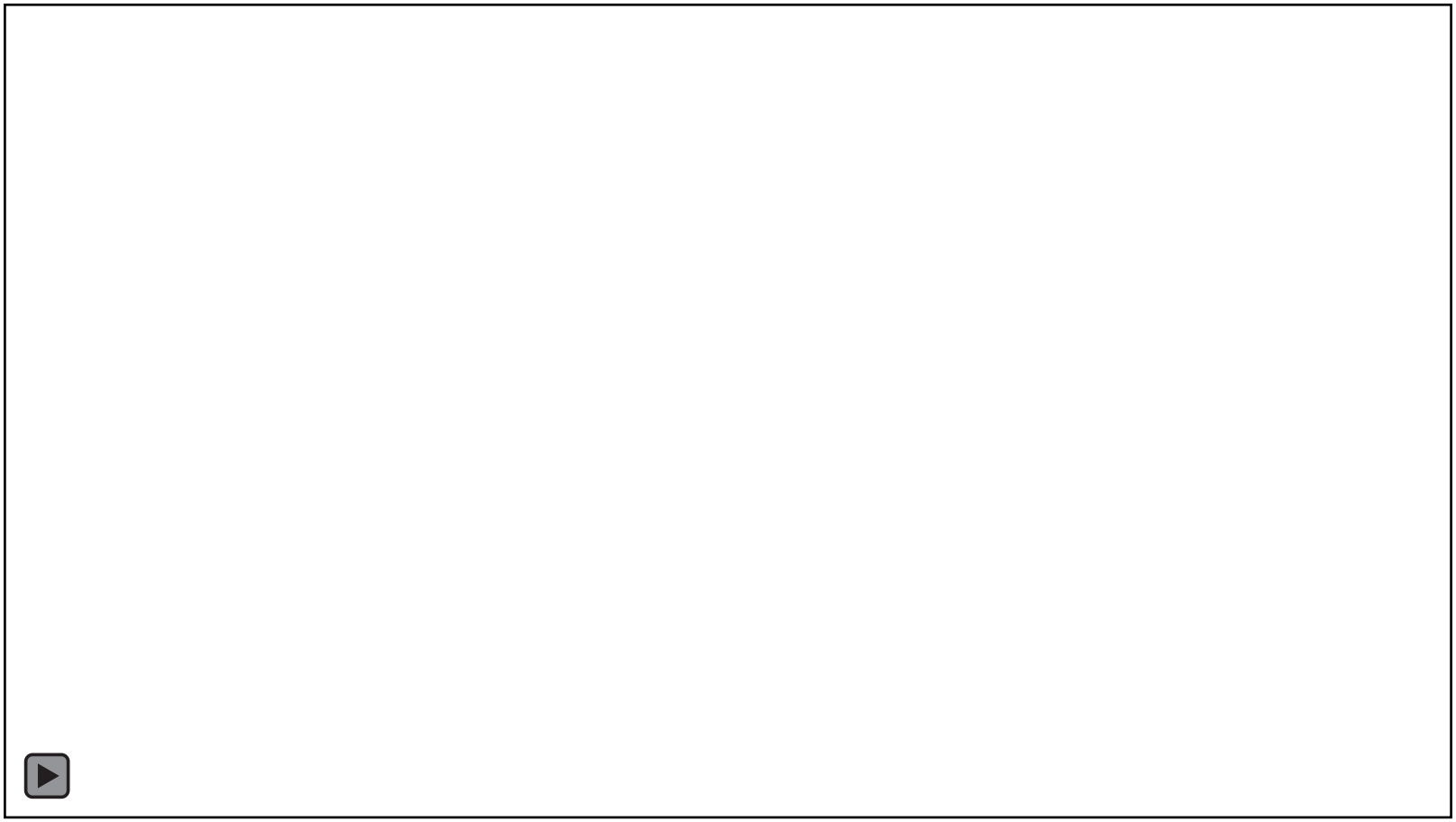
Example 1: Making Contact



Example 2: Clear and Concise Communications



Example 3: Radio Etiquette and Listening



What Should You Report?

- Immediate hazards and life safety concerns
- Significant damage or infrastructure impacts
- Injuries and resident needs
- Blocked roads or access routes
- Significant changes in conditions

Not every observation requires immediate radio traffic.

Reporting Priorities

Following a magnitude 6.9 earthquake, your CERT team arrives in a neighborhood.

You observe:

- Approximately 10 residents gathered outside
- One residence has a cracked chimney
- A bicycle lying in the middle of the street
- A tipped-over garbage can
- One resident reports smelling natural gas
- Several residents talking with one another

Reporting Priorities

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ICS 214: Activity Log

- Records significant observations and activities
- Documents radio communications and updates
- Supports accountability and accurate recordkeeping

EAST CENTRAL TASK FORCE - IMT
ACTIVITY LOG (ICS 214)

1. Incident Name: SSES 2012 EXERCISE	**2. Operational Period:** Date From: 10/23/2012 Date To: 10/23/2012 Time From: 0800 Time To: 2200	
3. Name: David A Carichner	**4. ICS Position:** EOC OPERATIONS	**5. Home Agency** (and Unit): WCEMA

6. Resources Assigned:

Name	ICS Position	Home Agency (and Unit)

7. Activity Log:

Date/Time	Notable Activities
10/23/1400	EOC
1410	IAP Briefing
1810	Activated EOC reviewed and performed checklist
1816	Received Alert confirmation from SEOC Matt.
1823	LEVEL III EOC
1827	Prepared for possible escalation.
1859	Received call from Kevin Howard DOH Emergency Preparedness standup.
1918	Received & Confirmed Site Area notification. SEOC Matt.
1918	EOC to level I
2021	Understood 10 mile EPZ evac notice and Mon-Decon / Shelter at Tunkhannock Middle School ready to start.
2052	Receive call from SRO Sandra confirming General Emergency and instructed to report unmet needs to her.
21:21	FEMA evaluator has indicated EOC has met Objectives and can terminate.
21:23	Terminated incident.

8. Prepared by: Name: David Carichner Position/Title: OPS Signature: David Carichner

ICS 214, Page 1 Date/Time: 2123hrs 10/23/2012

ICS 214: Activity Log

ACTIVITY LOG (ICS 214)

1. Incident Name:	2. Operational Period:	
Fall 2026 CERT Skills Exercise	Date From: 10/24/26	Date To: 10/24/26
	Time From: 13:00	Time To: 15:30

3. Name:	4. ICS Position:	5. Home Agency (and Unit):
Kaz Chiao	Scribe	CCFD CERT

6. Resources Assigned:

Name	ICS Position	Home Agency (and Unit)
Mike Chuang	Team Leader	CCFD CERT
Rik Kasuga	CERT Member	CCFD CERT
Vindula Raghbir	CERT Member	CCFD CERT

7. Activity Log:

Date/Time	Notable Activities
13:00	Team briefed; assigned to search Hillside Dr.; PPE checked
13:10	Departed Command Post; began neighborhood assessment
13:20	Utility hazard identified at 520 Hillside Dr.
13:37	Team began extrication of trapped victim at 915 Hillside Dr.
13:42	Extrication completed; patient transferred to Command Post
14:02	Road obstruction affecting vehicle access on 1300 block of Hillside Dr.; reported to Command Post
14:10	Assigned area completed; returning to Command Post
14:20	Arrived at Command Post; team demobilized

Practical Exercise: Operation Neighborhood Connect

Scenario: A magnitude 6.9 earthquake has struck San Mateo County. CERT teams have been activated to assist with neighborhood assessments and emergency communications.

Your Mission:

- Gather and evaluate information
- Identify significant hazards and needs
- Report to Net Control
- Document activities and communications

Team Roles

- **Team Leader:** Coordinates team activities
- **Radio Operator:** Communicates with Net Control via radio
- **Scribe:** Maintains ICS 214
- **Team Members:** Gather and evaluate information

Rotate radio operators at each station!

Exercise Organization

Exercise Stations:

1. Search & Rescue
2. Fire & Utility Safety
3. Medical Triage & Assessment
4. Medical Treatment
5. Cribbing & Leveraging

Exercise Instructions

- Review your assigned station scenario
- Identify significant observations
- Transmit a concise report to Net Control
- Document activities using ICS 214

Making an Effective Radio Report

Include the following, as applicable:

- Location: Where are you?
- Situation: What are you observing?
- Impact: Who or what is affected?
- Needs: Is assistance needed?

Exercise Debrief

- What challenges did you encounter using the radios?
- How did you decide what information to report?
- Was it difficult to keep transmissions brief?
- What would you do differently next time?

Key Takeaways

- Know your communications plan and available methods
- Use proper radio procedures
- Prioritize important information
- Communicate clearly and accurately
- Document significant activities and communications
- Continue practicing your radio skills