SOUTHERN MARIN
COMMUNITY EMERGENCY RESPONSE TEAMS
Radio Communications Plan
Communications Plan – SMFD CERT November 2011

Acknowledgements:

This document was prepared by the Southern Marin CERT Leadership Council at the request of Southern Marin Fire Protection District.

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**Dedication:**
This project is dedicated to the memory of Jeff Powers, 23-year veteran of the fire service and Deputy Chief, Southern Marin Fire Protection District.
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</tbody>
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OBJECTIVES:

Integrate CERT and RACES radio communications, in order to minimize the need for runners to carry messages between Southern Marin and the Marin Operational Area Office of Emergency Services, Emergency Operations Center (MOA OES EOC) in San Rafael.

a. Use FRS/GMRS radio and 2 meter Amateur Radio for this purpose
b. Identify organizational structure of message flow to and from the OES EOC

PROJECT INTRODUCTION:

The Southern Marin Community Emergency Response Team (CERT) group will utilize radio communications to improve its ability to function safely and communicate with the county EOC as needed.

This plan establishes a standard method and means for Southern Marin County communities to stay in touch with and protect residents during times of extreme emergencies. This plan is not intended to replace existing emergency services like REACT, RACES/ACS, ARES, or any public safety organization such as fire, police or emergency medical teams. It is also not intended to replace volunteer service provided by operators licensed under the Amateur Radio Service of the Federal Communications Commission (FCC) who are often referred to as “ham radio” operators. Rather, it will provide training, equipment and support that concerned citizens can use to help themselves, if emergency services are not available or do not serve the particular needs of that community.

The Southern Marin CERT radio communications program is based upon the use of inexpensive, widely-available radio equipment. Two basic types of radios may be used: FRS or GMRS. FRS or Family Radio Service radios are compact, handheld, wireless 2-way radios that provide good clarity over a short range. FRS radios operate on any of 14 dedicated channels (1-14) designated by the FCC (Federal Communications Commission) expressly for FRS radio usage. Per FCC regulations, FRS radios have a maximum allowable power of 1/2 Watt. GMRS or General Mobile Radio Service radios operate on any of up to 8 dedicated channels (15-22) designated by the FCC, while sharing FRS channels 1-14. GMRS radios typically have power ratings of 1 to 5 watts and offer somewhat longer range communications, secure, interference-free digital operation, call paging, and weather report reception. These “walkie-talkie” type radios are inexpensive and are designed for short-range personal communications, while being intuitive and easy to use. These radios allow a much larger and more diverse group of individuals to become involved in radio operation than would ham radio or commercially licensed radio services.

Another type of radio used is the Kenwood TK2160K high band portable and the Kenwood TK7302 HV 45 W mobile high band radio. These are provided to Division Incident Command Posts and Southern Marin Fire Stations and EOC’s. CERT radio operators must be trained in the set-up and use of the radios.

HOW MESSAGES FLOW THROUGH THE SYSTEM

FRS or GMRS Radios will be issued to CERT neighborhood teams. They will conduct sweeps of their divisions and report their findings by radio to their Incident Command Posts (ICPs). Messages received will be written down on approved message forms by the radio operator or a scribe as they are received and confirmed.
Each Incident Commander will rank messages by precedence (a.k.a. priority), based on the relative urgent nature of each. They will determine whether some may be handled locally and others will require outside help (see the message precedence decision tool in a following section).

CERT Radio Operators working at each ICP will transmit messages to the Southern Marin CERT radio operator located at one of the three Southern Marin Fire Stations, or the City of Sausalito Emergency Operations Center in the precedence/priority order that has been determined by the Division Commander. That operator or scribe will write down all traffic using standard message forms, then hand each to a runner for delivery to the Southern Marin CERT Radio Operator on duty.

The Southern Marin CERT radio operator will receive messages from multiple sources and relay each one, verbatim, according to precedence as assigned by the Division Commander who originated the message, then transmit them to the Southern Marin Fire District EOC, according to precedence. A car fire may be deemed trivial, when resources are scarce, or if a burning building with trapped occupants is reported at the same time.

The following diagram demonstrates the way effective communications will be established and maintained in the unincorporated areas of Southern Marin. Specific means for passing traffic to official emergency services providers may vary for cities, towns or unincorporated areas elsewhere in Marin.

Note: “Scribe” = copy clerk, stenographer
### FREQUENCY PLAN

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Equipment</th>
<th>Position</th>
</tr>
</thead>
</table>
| 158.745 MHz        | **Kenwood High Band TK7302 HV 45W Mobile Radios**               | **Mill Valley Fire CERT Radio Operator.**
| TX tone 94.0       | **MLV CERT Channel 1**                                         | **City of Mill Valley**                                    |
| MLV CERT Channel 2 | **Kenwood High Band TK7302 HV 45W Mobile Radios**               | **Mill Valley Fire CERT Radio Operator.**
|                   | **City of Mill Valley**                                        |                                                           |
| 158.985 MHz        | **Kenwood High Band TK7302 HV 45W Mobile Radios**               | **SMFD CERT Divisions 1 & 3**                              |
| TX tone 94.0       | **MLV CERT Channel 2**                                         | **City of Sausalito & Floating homes communities.**       |
|                   | **Kenwood High Band TK7302 HV 45W Mobile Radios & Kenwood TK2160 handheld portable radios** | **CERT EOC Radio Operator and field portables**           |
| 151.1750 MHz       | **Kenwood High Band TK7302 HV 45W Mobile Radios & Kenwood TK2160 handheld portable radios** | **SMFD CERT Divisions 4 & 9**                              |
| SM CERT Channel 3  | **Kenwood High Band TK 7302 HV 45W Mobile Radios & Kenwood TK2160 handheld portable radios** | **Tamalpais Valley, Homestead Valley, Strawberry, Alto, and Reedlands communities. CERT EOC Radio Operator and field portables** |
| 155.5500 MHz       | **Kenwood High Band TK 7302 HV 45W Mobile Radios & Kenwood TK2160 handheld portable radios** | **SMFD CERT Divisions 4 & 9**                              |
| SM CERT Channel 4  | **Kenwood High Band TK 7302 HV 45W Mobile Radios & Kenwood TK2160 handheld portable radios** | **Tamalpais Valley, Homestead Valley, Strawberry, Alto, and Reedlands communities. CERT EOC Radio Operator and field portables** |
| FRS Channel 1      | **FRS/GMRS Radio**                                             | **CERT Division 1A through 1D Incident Command Post Location** |
| GMRS Channel 1     | **FRS/GMRS Radio**                                             | **SM CERT Neighborhood Teams**                             |
| FRS Channel 2      | **FRS/GMRS Radio**                                             | **CERT Division 4A through 4C Incident Command Post Location** |
| GMRS Channel 2     | **FRS/GMRS Radio**                                             | **SM CERT Neighborhood Teams**                             |
| FRS Channel 3      | **FRS/GMRS Radio**                                             | **CERT Division 3A and 3B CERT Division 5A and 5B CERT Incident Command Post Location** |
| GMRS Channel 3     | **FRS/GMRS Radio**                                             | **SM CERT and MCFD CERT Neighborhood Teams**              |
| FRS Channel 4      | **FRS/GMRS Radio**                                             | **CERT Divisions 9A through 9C SM CERT Neighborhood Teams** |
| GMRS Channel 4     | **FRS/GMRS Radio**                                             | **CERT Divisions 9A through 9C SM CERT Neighborhood Teams** |
| FRS CHANNELS 5-8   | **FRS/GMRS RADIO**                                             | **RESERVED FOR MILL VALLEY FD CERT TEAMS**                 |
| GMRS CHANNELS 5-8  | **FRS/GMRS RADIO**                                             | **RESERVES FOR TIBURON-BELVEDERE CERT TEAMS**              |
| FRS Channel 9-12   | **FRS/GMRS RADIO**                                             | **RESERVES FOR TIBURON-BELVEDERE CERT TEAMS**              |
| GMRS Channel 9-12  | **FRS/GMRS RADIO**                                             | **RESERVES FOR TIBURON-BELVEDERE CERT TEAMS**              |

Please See ORGANIZATIONAL STRUCTURE and SAMPLE ASSIGNMENT LIST for specifics on Positions cited above.

*“Keeper” = the RACES operator assigned to maintain the radio at that station*
## POSITION DESCRIPTIONS

<table>
<thead>
<tr>
<th>Position</th>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM CERT Southern Marin Net Control Stations</td>
<td>CERT traffic to City and/or County EOC, including emergency traffic from CERT SMFD Stations 1, 4 and/or 9 on SM CERT 3 or 4 Net. Messages for Southern Marin CERT are relayed to CERT Net Control.</td>
</tr>
<tr>
<td>SM CERT SMFD Stations 1, 4 and 9 CERT Radio Operator</td>
<td>CERT traffic, including emergency traffic on paper from Southern Marin CERT divisions, on Southern Marin CERT Net. Messages for Southern Marin CERT are relayed to CERT Net Control.</td>
</tr>
<tr>
<td>CERT Net Control Location</td>
<td>Receive messages on high band radios and relay those that need the attention of the EOC to the CERT SMFD Station 1 Operator on message forms, using a runner. Send messages to the CERT Division Command Post operators. Use of Scribe recommended.</td>
</tr>
<tr>
<td>CERT Division Communications Post Radio Operator/ Position</td>
<td>Receive messages on FRS and/or GMRS radios and relay those that need the attention of the EOC to the CERT Net Control Operator. Send messages to the FRS radio operators. Use of Scribe recommended.</td>
</tr>
<tr>
<td>CERT Field GMRS/FRS Radio Operators</td>
<td>Send messages to their division command post using GMRS/FRS radios. Possibly receive messages from other radio operators at various positions.</td>
</tr>
</tbody>
</table>
SET-UP OF RADIO OPERATING POSITION

Division Incident Command Post (ICP)

These command posts are set up by each Division and are coordinated by the Division Supervisor. Each ICP should have both an FRS/GMRS and high band radio positions that will communicate on the Southern Marin CERT Net (see “Position Descriptions”).

Division ICP Radio Operator Set-up checklist

☐ Check out safety of location: odor of gas, electrical hazards, and structural integrity if in building or collapse zone.
☐ Away from generators or other loud noises.
☐ Consider needs for several hours of occupancy by the radio operator and the scribe working there.
☐ Operator sets up radios, high band antenna and power supply.
☐ Operator listens first to Southern Marin CERT Net. Asks if there is a Net Control Station. If no answer, ICP will assume Net Control position until properly relieved by a Net Control Operator assigned by the Communications Coordinator.
☐ Check in to the Southern Marin CERT net for the Division in which you are operating, citing the name of the acting Division Supervisor.
☐ This position has two radios, an FRS/GMRS for the division traffic and a high band Kenwood radio for Southern Marin CERT Radio Net communications.
☐ Consider having a volunteer monitor the FRS/GMRS traffic on their own radio to make sure nothing is missed. The ICP Radio Operator needs to be aware of what is being passed on the net.
☐ Initially, take only reports of damage that can be considered EMERGENCY threats to life and property as defined by the criteria of the Message Ranking component of this plan.
☐ Have any teams communicating with FRS/GMRS radios check in once every 15 minutes with their location and status. Ask fatigued teams to return to ICP for rest.
☐ If not immediately occupied with radio traffic, prepare a listing of available resources—people and equipment (e.g.: name, current location, equipment available such as radios, tools, medical supplies, heavy-duty vehicles, generators, etc.)
SOUTHERN MARIN CERT NET CONTROL

This position coordinates traffic between the Division ICPs and relays any priority traffic to a CERT radio operator via message form and runner (see “Position Descriptions”).

Southern Marin CERT Net Control Radio Set-up Checklist

☐ Check safety of location: odor of gas, electrical hazards, and structural integrity if in building or collapse zone.
☐ Away from generators or other loud noises
☐ Proximity to Southern Marin RACES operator
☐ Consider needs for several hours of occupancy by the radio operator and the scribe working there.
☐ Operator sets up radio, high band antenna and power supply.
☐ Operator listens first to Southern Marin CERT Net to see if frequency is in use by higher authority.
☐ “Directed Net” protocol will apply (see following example transmission).
☐ Request that stations report in with the information listed on Radio Log. Complete all data fields on log sheet. This record will become very important as the disaster progresses. If forms are unavailable, any paper will do, as long as it contains the data sets from the forms (to, from, date, time, message and your signature).
☐ ICP Radio Operators should be instructed to check in once every 30 minutes with their location and status (update the roll call as often as necessary to maintain an accurate accounting of communications resources).
☐ Fatigued ICP Radio Operators are to be asked to switch to their alternate operator and to take a rest.
☐ Instruct everyone to remain on frequency unless otherwise directed by Net Control. Using your FCC call sign and tactical call sign, identify yourself frequently

Example transmission
"This is Net Control for the Southern Marin CERT Emergency net. This is a directed net.” (In a “directed net,” the net control operator is the gatekeeper of all transmissions). All stations please use your call sign for recognition by net control. If you have emergency traffic, please indicate so on your first key-up"

"Is there any EMERGENCY or PRIORITY traffic at this time?"

"Are there any stations holding message traffic for the net?"

“The following is a roll call for divisions:”

- “Division 1a…” (etc.) After roll call ask for any late check-ins arriving.
- Do not gossip or spread unconfirmed information
GOOD OPERATING PRACTICES

- Always operate in a responsible manner. Remember that others are listening. Never interfere with the operations of another station.
- Never use profanity or CB lingo (e.g., “10-4”). Be considerate of inexperienced operators.
- Never transmit rumors. Your community will rely on you to supply complete and accurate information.
- Pause between transmissions so that others can break in with urgent matters.
- Never monopolize the channel, share it among all users. Keep transmissions short.
- Press the microphone button and pause before you start speaking, so your words are not cut off.
- Speak across the microphone in normal voice. Speak clearly and distinctly.
- Maintain your equipment in good operating condition. Have spare batteries at hand.
- Over-modulated equipment or "noise toys" should never be used.
- Relay transmissions from stations with weak signals to others, if necessary.
- Never put yourself in a situation where you endanger yourself or others. Never make the situation worse by your presence or operations.
- Never interfere with existing emergency services or groups. If another group is handling an emergency, let them handle it. Participate only if you are invited to do so.
- Assist anyone in your neighborhood to the best of your ability whether they participate in CERT or not.
- Sometimes the best thing you can do is simply monitor the channel for someone in need. Being there when someone needs assistance is more important than constantly advertising your availability.
- Get to know your neighbors and encourage them to join CERT. The more neighbors that are participating, the more the neighborhood will benefit. Help set up and maintain equipment for other people.
FORMS: INTRODUCTION AND DIRECTIONS FOR USE

All forms and logs are:

- Created to assist communication
- Best used with a scribe, letting the operator focus on the radio
- Include the concept of who, what, when, where to each message
- Prioritized by CERT Division Supervisor or Incident Commander and Net Control before being passed on to CERT Radio Operator (see section on message ranking)
- All information fields are to be filled in by printing, using 24-hour time notations. Any corrections are to be struck out with a single line and initialed by the scribe or radio operator.
- Data fields on forms are important – even if no forms are available, fill in the pertinent data on a blank piece of paper as it would be arranged in the form.

MESSAGE FORM

This form (Figure 2) is kept by all CERT radio operators located at Division Incident Command Posts or operating Net Control. If possible, a scribe will fill in the form, while the radio operator focuses on communication.

Data Fields

<table>
<thead>
<tr>
<th>To / Position</th>
<th>Full names of recipient and originator should be used. Position indicates their function within Southern Marin CERT</th>
</tr>
</thead>
<tbody>
<tr>
<td>From / Position</td>
<td>Subject should be concise and summarize topic of the message</td>
</tr>
<tr>
<td>Subject</td>
<td>The date the form is being used. If the day changes, note that in the time field</td>
</tr>
<tr>
<td>Date</td>
<td>The body of the message, including: who, what, when, where, and other important information.</td>
</tr>
<tr>
<td>Message</td>
<td>When the message and message signature block are complete, fill in the Date</td>
</tr>
<tr>
<td>Date</td>
<td>When the message and message signature block are complete, fill in the Time</td>
</tr>
<tr>
<td>Time</td>
<td>Signature of radio operator or scribe</td>
</tr>
</tbody>
</table>
| Signature / Position | }
GENERAL MESSAGE

TO: County EOC
FROM: Sam Clemens - Div 4b

SUBJECT: Passenger Ferry Incident

DATE: 2/16/09

Passenger Ferry aground and taking on water
75 plus people on board
Location: just north of ferry terminal

Figure 1
RADIO LOG

This form (Figure 3) is to be maintained contemporaneously by all CERT radio operators located at Incident Command Posts or operating Net Control. If possible, a scribe will fill in the form, while the radio operator focuses on communication.

Data Fields:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Incident Name</td>
<td>This is either the name or date of the training, drill, or exercise, or it is the name assigned by public safety authorities to the event</td>
</tr>
<tr>
<td>2) Date</td>
<td>The date the form is being used. If the day changes, note that in the time field</td>
</tr>
<tr>
<td>3) Incident #</td>
<td>If assigned by Southern Marin Fire</td>
</tr>
<tr>
<td>4) Operator Location</td>
<td>The building, command post, or other location where the radio operator is</td>
</tr>
<tr>
<td>5) Frequency</td>
<td>The frequency or channel being used</td>
</tr>
<tr>
<td>6) Log Prepared By</td>
<td>The name of the scribe or radio operator</td>
</tr>
<tr>
<td>7) Radio Operator</td>
<td>The name and division assignment of the radio operator</td>
</tr>
<tr>
<td>Time</td>
<td>The time the message transmission began</td>
</tr>
<tr>
<td>Team</td>
<td>The team from which the message originates. This could mean Divisions, if the radio operator is acting as Net Control—or individual teams in the Division, if the radio operator is assigned to a division command post</td>
</tr>
<tr>
<td>Message</td>
<td>The body of the message, including: who, what, when, where, and other important information.</td>
</tr>
<tr>
<td>Standing by for Reply</td>
<td>This indicates the disposition of the message. If it requires further communication, then it is considered open. If it has come to resolution, it is shut</td>
</tr>
</tbody>
</table>
### RADIO LOG

<table>
<thead>
<tr>
<th></th>
<th>TIME</th>
<th>TEAM</th>
<th>MESSAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>21:30</td>
<td>4 B</td>
<td>40+ people trapped in collapsed structure address XX Harbor Dr Sausalito</td>
</tr>
<tr>
<td>2</td>
<td>21:35</td>
<td>1 A</td>
<td>Passenger Ferry aground and taking on water - 75+ people on board location just north of Ferry Terminal</td>
</tr>
</tbody>
</table>

6) Log prepared by: Bret Hart - scribe
7) Radio operator: Sam Clemens - Div 4b
ESTABLISHING PRECEDENCE OF MESSAGE TRAFFIC

The PRECEDENCE or RANKING assigned to a formal message is the responsibility of the originator of the message; in this case the CERT Division Incident Commander. The originator must weigh subject matter and the time factor involved when deciding on precedence. By assigning precedence, the originator tells handling operators in what order the message will be handled and denotes the urgency of the information to the addresses(s).

a. **EMERGENCY (a.k.a. IMMEDIATE OR FLASH)**. This precedence is reserved for messages of extreme urgency relating to situations gravely affecting security. EMERGENCY messages are to be handled as fast as humanly possible, ahead of all other messages, with in-station handling time not to exceed 10 minutes. Messages of lower precedence are interrupted on all circuits involved until the handling of EMERGENCY messages is completed. Examples include widespread civil disturbance, reports of or warning of grave natural disaster and requests for fire or medical assistance.

b. **PRIORITY**. This precedence is reserved for traffic requiring expeditious action by the addressee or for conducting operations in progress when ROUTINE precedence will not suffice, but not of sufficient gravity to class as an emergency. Examples include requests for supplies or equipment during an in-progress operation, time-critical items requiring quick response and situation reports. They are to be handled as quickly as possible, with an in-station handling time not to exceed 6 hours.

c. **ROUTINE**. This precedence is used for all types of message traffic justifying transmission by rapid means, but not of sufficient urgency to require higher precedence. Examples include any message that requires the documentation of its transmission or delivery; periodic reports. They should be handled as soon as traffic flow allows, but no later than the beginning of the next duty shift.

**NOTE:**

In the event that a public safety official requests that CERT radio operators relay information or any message, this should be done according to the precedence, as assigned by the public safety requestor.
MESSAGE RANKING GUIDANCE

Below is a list of priorities CERT Division Supervisors or ICP Commanders should follow when directing incident information to ham radio operators during a disaster.

EMERGENCY:
1. Any confirmed incident involving mass casualty and many injuries
2. Any incident involving the potential for large loss of life or mass casualties
3. Any incident involving many trapped victims needing rescue
4. Any other incident with the potential for mass casualty
5. Any incident involving hazardous materials that may require mass evacuation
6. Any incident involving large scale fires with extreme spread potential (example: into wildland areas, from one involved building to many other uninvolved buildings, mass evacuation needed)
7. Any incident involving property damage to essential services occupancies (example: public safety buildings, electrical facilities, hospitals, sewer systems)

PRIORITY:
1. Any incident involving the confirmed or potential risk of long-term environmental damage (example: sewer leaks, hazardous materials incidents, flooding)
2. Any incidents involving severe damage to public safety, possible shelter or supply cache structures with no victim rescue concerns
3. Any other incident as deemed as a priority by the Division Incident Commander

ROUTINE:
Casual, non-critical message traffic. For example, requests for eventual replenishment of supplies, non-urgent equipment, long-term shelter, etc., having little or no urgency for relay to other stations or to achieve resolution
MAP SKETCH

Source: Google Maps™
HANDS ON:
Effective CERT Radio Communication—Field Operators

Effective radio communication requires that you gather all the essential information in your head before you start to speak; then establish contact, keep it short, and sign off when done.

Tick off “who, what, where, when, how” on one hand, to keep track of the essential elements:

“Who” = identify yourself
“What” = what’s happening
“Where” = where the incident is occurring
“When” = when action will be needed
“How” = how you want the situation handled

- Before transmitting, gather your thoughts, breathe, and listen for your frequency to be clear.
- Hold the radio upright and face the station you are calling (radio waves follow line of sight).
- Speak closely across the microphone, rather than straight into it. **Wait to be acknowledged.**
- Be brief. If your mind goes blank or you are interrupted, say, “Please stand by,” and release the PTT button. If the situation does not resolve within a few seconds, clear the frequency and do your thinking off the air: “Team 1A, out.” Don't explain—just clear the frequency. Airtime is precious—use it sparingly.
- Be polite and patient, especially during a crisis. The pay-off is efficient communication.
- If you are unsure you are being heard, identify yourself and ask for a “signal check.”
- Sign off formally at the end of each conversation, so that your intention is obvious.
Example #1—hypothetical incident with CERT team out practicing:

“Command post, Team 1A, over.” Wait to be acknowledged.
“Team 1A, this is Command Post, go ahead.”
“Command Post, we are in Old Mill Park. Two big dogs are fighting, and the owners cannot control them. A child has been knocked off the swings and is screaming but appears uninjured. We need animal control help. Over.” Wait for reply.
“Roger, Team 1A, we acknowledge dog fight and will send help. Try to clear the area of people. Over.”

“Acknowledged, Command Post, we will try to clear the area. Team 1A, out.”


Example #2—from the 2008 Marin Century public service event (ham operators):

“Net control, Lincoln School.”
Wait to be acknowledged: “Lincoln School, go ahead.”
“We have a rancher who will need to bring cattle through this area around noon. He requests that the roadway be cleared of bicycles at that time, up to the intersection of Hicks Valley with Point Reyes Petaluma Road.”
 Wait for reply: “Roger, Lincoln School, please assure the rancher that we will notify CHP to have the roadway cleared at noon. Try to have a telephone number for him on hand.”

Acknowledge and clear the frequency: “Roger, Net Control, we already have his cell phone number and will stand by with that information. Lincoln School, KI6IMV, clear.”


***

Some common radio terms:

- “Go ahead” gives permission to proceed with radio “traffic” (message).
- “Acknowledged” means “got your message” or “received and understood.”
- (“Roger” is radio slang for “acknowledged.”)
- “Over” means you have finished speaking and expect a response.
- “Out” means you are finished and signing off for now. (Note: “over and out” is nonsense.)
- (“Clear” means “out” and is often used by ham operators.)
- “Affirmative” means “yes” and is sometimes easier to understand over the radio.
- “Negative” means “no” and is sometimes easier to understand over the radio.
- “Correction” means that you are about to transmit corrected information.
- “Say again” is a request for the calling party to repeat. You can also specify the portion you want repeated, such as “Say again all after ‘is flooding the street.’”
- “Stand by” asks the other party to wait briefly and not say anything. They may acknowledge by saying, “Team X, standing by.”
- “Break” is either a request to interrupt traffic or a statement that you are pausing very briefly.
HANDS ON:
Writing CERT Radio Messages—Incident Command Post Operator

An effective written radio message has five elements that you can tick off on the fingers of one hand: To, From, Date, Time, Message (body text). The first four elements constitute the header.

Be precise with the “from” element—not just “CERT” but, e.g., “SMFD CERT Division 4B Red.”

For the date, use double-digit format, American order: November 10, 2008 would be 11-10-08.

For the time, use 24-hour military time, with double digits: Five after 4:00 p.m. would be 16:05.

If you want to specify a message number for your log, just use your date-time digits: Message #: 11-10-08 16:05. Add the “from” element, if that’s clearer: “4B Red 11-10-08 16:05.”
For the **message body**, be succinct. If a field operator is excited, unfocused, and too wordy, summarize the message and get acknowledgement before committing it to paper.

**Example:**

Operator in field: "*Command Post, this is Team 2A Yellow!*" (Waits for acknowledgement.)

Incident Command Post (ICP): “Team 2A Yellow, go ahead.”

Operator in field: “This is 2A Yellow. A huge tree came down on Homestead Avenue, and it’s a real mess! There are tangled wires all over the place, and the downpour is unbelievable! Cars are starting to back up in the road. You can see the root ball sticking up, and it looks like it was chopped in half by the big construction project on the property. Nobody can get by! It’s a good thing nobody was driving past when it fell! Umm, over!"

ICP: “Roger, 2A Yellow. We acknowledge a large tree down on Homestead with many fallen wires and blocked traffic. Can you give me an address or cross street? Over.”

Operator in field: “Yeah, this is Team 2A Yellow. Umm, this is close to Gomez Way. Over.”

ICP: “Roger, 2A Yellow, we acknowledge a large tree and many fallen wires blocking the roadway on Homestead near Gomez. Please stand by a minute.” Continuing, after consulting Command Post Supervisor or Operations Chief: “Team 2A Yellow, this is Command Post. Stay away from the wires and start to cordon off the area. Give the wires a wide berth of about 100 feet. Stay away from any pooled water. Use extreme caution. Do you need help? Over.”

Operator in field: “*Command Post, Team 2A Yellow. No, negative, we have some ‘caution’ tape and will block off the area ourselves. We’ll be careful. Over.*”

ICP: “Roger, Team 2A Yellow. Go ahead and block off the area. Please report back in when you’re done. Over.”

Operator in field: “*Acknowledged, Command Post, we’ll block off the area and report back when we’re done. Team 2A Yellow, out.*”

ICP: “Command Post, standing by.”

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You can now write down a brief message body: “Large tree is down on Homestead Avenue near Gomez with many fallen wires, blocked traffic. Will cordon off area with tape.”

When you need to transmit that message by radio farther up the command hierarchy, do it verbatim (word for word, not summarizing).
**GLOSSARY**

2m (Two Meters) Amateur Radio operating frequency band, from 144MHz to 148MHz.

**Amateur Radio** (Ham Radio) licensed persons authorized in the U.S. by the FCC or equivalent agencies in other countries to build and operate radio communications equipment for public service and personal enjoyment. Since the invention of radio communications, Amateur Radio operators have participated in the evolution of radio communications and, “when all else fails” and normal communications pathways have become unavailable or unreliable, have provided life and property saving emergency pathways. The term “amateur” indicates that Hams are committed to assist without financial compensation, as differentiated from Commercial Radio stations.

**FCC Call Sign** A combination of letters and numbers issued by the FCC to designate that a person has received authorization to operate specific types of radio equipment on specific frequencies. This call sign is used to identify these persons when transmitting on their radios.

**Federal Communications Commission (FCC)** National regulatory agency that establishes and controls the transmission and reception of communications, including radio and television.

**Frequency** A numerical measurement of an electromagnetic wavelength, in communications the wavelength is expressed in “Hertz” (cycles per second).

**FRS or Family Radio Service** radios are compact, handheld, wireless 2-way radios that provide good clarity over a short range. FRS radios operate on any of 14 dedicated channels (1-14) designated by the FCC (Federal Communications Commission) expressly for FRS radio usage. Per FCC regulations, FRS radios have a maximum allowable power of 1/2 Watt.

**GMRS or General Mobile Radio Service** radios operate on any of up to 8 dedicated channels (15-22) designated by the FCC, while sharing FRS channels 1-14. GMRS radios have power ratings of 1 to 5 watts and offer somewhat longer range communications than FRS, plus secure, interference-free digital operation, call paging, and weather report reception.

**Public Safety Agency** A governmentally-established agency that is charged with protection of life and property (police, fire departments, etc.)

**Division Incident Command Post** Assembly and staging area set up at each CERT Division Commander’s discretion. Each ICP provides a common meeting place and a location from which to operate and coordinate search and rescue operations.

**Net Control** A radio operator who performs supervisory and control functions to coordinate communications between radio operators in the field.

**Scribe** A person who performs a stenographic or clerk-type function, copying down radio transmissions onto an approved message form.
**Simplex**  Radio communications that take place with all parties using a single frequency, without the use of a repeater.

**Tactical Call Sign**  Used in preference to an FCC Call Sign, when participating in a directed net. It is typically the radio operator’s location, e.g. “Division 2B Incident Command Post.”

**ICS/NIMS Forms Used in Radio Communications**

[currently undergoing revision]
FCC Regulations

PART 97 Amateur Radio Service

Subpart E—Providing Emergency Communications

§97.401 Operation during a disaster.
A station in, or within 92.6 km (50 nautical miles) of, Alaska may transmit emissions J3E and R3E on the channel at 5.1675 MHz (assigned frequency 5.1689 MHz) for emergency communications. The channel must be shared with stations licensed in the Alaska-Private Fixed Service. The transmitter power must not exceed 150 W PEP. A station in, or within 92.6 km of, Alaska may transmit communications for tests and training drills necessary to ensure the establishment, operation, and maintenance of emergency communication systems.

§97.403 Safety of life and protection of property.
No provision of these rules prevents the use by an amateur station of any means of radio communication at its disposal to provide essential communication needs in connection with the immediate safety of human life and immediate protection of property when normal communication systems are not available.

§97.405 Station in distress.
(a) No provision of these rules prevents the use by an amateur station in distress of any means at its disposal to attract attention, make known its condition and location, and obtain assistance.
(b) No provision of these rules prevents the use by a station, in the exceptional circumstances described in paragraph (a), of any means of radio communications at its disposal to assist a station in distress.

§97.407 Radio amateur civil emergency service.
(a) No station may transmit in RACES unless it is an FCC-licensed primary, club, or military recreation station and it is certified by a civil defense organization as registered with that organization, or it is an FCC-licensed RACES station. No person may be the control operator of a RACES station, or may be the control operator of an amateur station transmitting in RACES unless that person holds a FCC-issued amateur operator license and is certified by a civil defense organization as enrolled in that organization.
(b) The frequency bands and segments and emissions authorized to the control operator are available to stations transmitting communications in RACES on a shared basis with the amateur service. In the event of an emergency which necessitates invoking the President's War Emergency Powers under the provisions of section 706 of the Communications Act of 1934, as amended, 47 U.S.C. 606, RACES stations and amateur stations participating in RACES may only transmit on the frequency segments authorized pursuant to part 214 of this chapter.
(c) A RACES station may only communicate with:
   (1) Another RACES station;
   (2) An amateur station registered with a civil defense organization;
   (3) A United States Government station authorized by the responsible agency to communicate with RACES stations;
   (4) A station in a service regulated by the FCC whenever such communication is authorized by the FCC.
(d) An amateur station registered with a civil defense organization may only communicate with:
(1) A RACES station licensed to the civil defense organization with which the amateur station is registered;
(2) The following stations upon authorization of the responsible civil defense official for the organization with which the amateur station is registered:
   (i) A RACES station licensed to another civil defense organization;
   (ii) An amateur station registered with the same or another civil defense organization;
   (iii) A United States Government station authorized by the responsible agency to communicate with RACES stations; and
   (iv) A station in a service regulated by the FCC whenever such communication is authorized by the FCC.
(e) All communications transmitted in RACES must be specifically authorized by the civil defense organization for the area served. Only civil defense communications of the following types may be transmitted:
   (1) Messages concerning impending or actual conditions jeopardizing the public safety, or affecting the national defense or security during periods of local, regional, or national civil emergencies;
   (2) Messages directly concerning the immediate safety of life of individuals, the immediate protection of property, maintenance of law and order, alleviation of human suffering and need, and the combating of armed attack or sabotage;
   (3) Messages directly concerning the accumulation and dissemination of public information or instructions to the civilian population essential to the activities of the civil defense organization or other authorized governmental or relief agencies; and
   (4) Communications for RACES training drills and tests necessary to ensure the establishment and maintenance of orderly and efficient operation of the RACES as ordered by the responsible civil defense organizations served. Such drills and tests may not exceed a total time of 1 hour per week. With the approval of the chief officer for emergency planning the applicable State, Commonwealth, District or territory, however, such tests and drills may be conducted for a period not to exceed 72 hours no more than twice in any calendar year.

Author’s Note:
At the time of this manual’s preparation (August, 2009), it is anticipated that portions of this Subpart will soon undergo revision. Accordingly, before taking action based upon this text, please confirm that you are reading the current version, which can be accessed at:

http://www.arrl.org/FandES/field/regulations/news/part97/