



SOUTHERN MARIN

COMMUNITY EMERGENCY RESPONSE TEAMS

Radio Communications Plan

Acknowledgements:

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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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OBJECTIVES:

Integrate CERT and RACES radio communications, in order to minimize the need for runners to carry messages between Southern Marin and the Marin County Emergency Operations Center (EOC) at the Civic Center 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 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 TK-2360K high band portable and the Kenwood TK-7302HV 45-watt mobile high band radio. These are provided to Division 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.

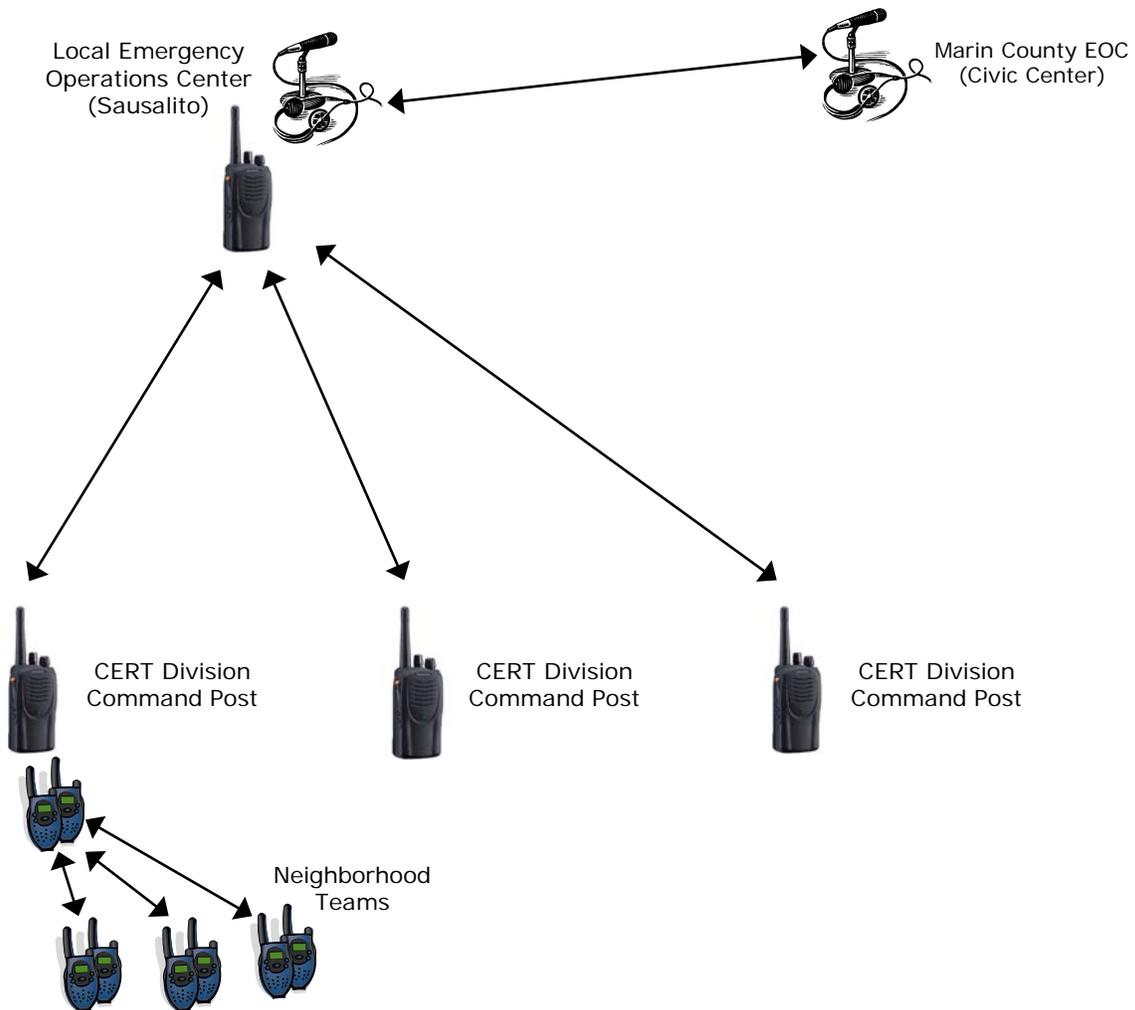
HOW MESSAGES FLOW THROUGH THE SYSTEM

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 division command posts. Messages received will be written down on approved message forms by the radio operator or a scribe as they are received and confirmed.

Each division supervisor 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 division command post will receive messages from multiple sources and relay each one to the local Emergency Operations Center (Sausalito), according to the precedence/priority order that has been determined by the division supervisor. 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

Frequency	Equipment	Position
MV CERT Channel 1 158.745 MHz / 94.8 PL	Kenwood High Band Radios	RESERVED FOR MILL VALLEY CERT
MV CERT Channel 2 158.985 MHz / 94.8 PL	Kenwood High Band Radios	RESERVED FOR MILL VALLEY CERT
SM CERT Channel 3 151.175 MHz / 94.8 PL	Kenwood High Band Radios	Southern Marin CERT Divisions 1 & 3 Division Command Posts / Sausalito EOC
SM CERT Channel 4 155.550 MHz / 94.8 PL	Kenwood High Band Radios	Southern Marin CERT Divisions 4 & 9 Division Command Posts / Sausalito EOC
FRS/GMRS Channel 1	FRS/GMRS Radios	Southern Marin CERT Division 1 Command Posts / Neighborhood Teams
FRS/GMRS Channel 2	FRS/GMRS Radios	Southern Marin CERT Division 4 Command Posts / Neighborhood Teams
FRS/GMRS Channel 3	FRS/GMRS Radios	Southern Marin CERT Division 3 Command Posts / Neighborhood Teams
FRS/GMRS Channel 4	FRS/GMRS Radios	Southern Marin CERT Division 9 Command Posts / Neighborhood Teams
FRS/GMRS Channels 5-8	FRS/GMRS Radios	RESERVED FOR MILL VALLEY CERT
FRS/GMRS Channels 9-12	FRS/GMRS Radios	RESERVED FOR BELVEDERE-TIBURON

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

Position	Task
Emergency Operations Center RACES Radio Operator	Receive emergency messages on paper from the CERT radio operator and relay them to the Marin County EOC via 2 meter amateur radio. Receive instructions from the county EOC and relay them to the CERT radio operator.
Emergency Operations Center CERT Radio Operator	Receive messages on high band radios and relay those that need the attention of the county EOC to the RACES radio operator on message forms, using a runner. Send instructions to CERT Division Command Posts. Use of Scribe recommended.
CERT Division Command Post Radio Operator	Receive messages on FRS and/or GMRS radios and relay those that need the attention of the EOC to the CERT radio operator at SMFD Station 1 using the high band radios. Send instructions to CERT neighborhood teams. Use of Scribe recommended.
CERT Neighborhood Teams	Conduct sweeps of their divisions and report findings to CERT Division Command Post using FRS and/or GMRS radios. Receive instructions from the Command Post.

SET-UP OF RADIO OPERATING POSITION

CERT Division Command Post

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

Division Command Post 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, command post 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 command post 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 command post 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 Command Posts 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).
- Command Post 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 Command Post 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 Command Posts or operating Net Control. If possible, a scribe will fill in the form, while the radio operator focuses on communication.

Data Fields

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

GENERAL MESSAGE		
TO: County EOC	POSITION: RACES Operator	
FROM: Sam Demers - Div 4b	POSITION: Radio operator - Div 4b Command Post	
SUBJECT: Passenger Ferry Incident		DATE: 2/16/09
MESSAGE: Passenger Ferry aground and taking on waterX 75 plus people on boardX Location just north of ferry terminalX		
DATE: 2/16/09	TIME: 21:35	SMFD OPERATOR:
STATION: NFS120		
FROM RECEIVING GENERAL MESSAGE CENTER		
SMFD CERTIFICATION NUMBER		

Figure 1

RADIO LOG

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

Data Fields:

1) Incident Name	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	
2) Date	The date the form is being used. If the day changes, note that in the time field	
3) Incident #	If assigned by Southern Marin Fire	
4) Operator Location	The building, command post, or other location where the radio operator is	
5) Frequency	The frequency or channel being used	
6) Log Prepared By	The name of the scribe or radio operator	
7) Radio Operator	The name and division assignment of the radio operator	
Time	The time the message transmission began	
Team	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	
Message	The body of the message, including: who, what, when, where, and other important information.	
Standing by for Reply	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	

RADIO LOG

1) Incident name	2) Date	3) Incident #	4) Operator location	5) Frequency
EQ 20090216	2/16/09		CERT Net Control	147.XXX

Standing by
for reply:

	TIME	TEAM	MESSAGE	Open = / Shut = X
1	21:30	4 B	40+ people trapped in collapsed structure address XX Harbor Dr Sausalito	/
2	21:35	1 A	Passenger Ferry aground and taking on water - 75+ people on board location just north of Ferry Terminal	/
3	:			
4	:			
5	:			
6	:			
7	:			
8	:			
9	:			
10	:			
11	:			
12	:			
13	:			

6) Log prepared by: Bret Hart - scribe	7) Radio operator: Sam Clemens - Div 4b
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Figure 2

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 addressee(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 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

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:

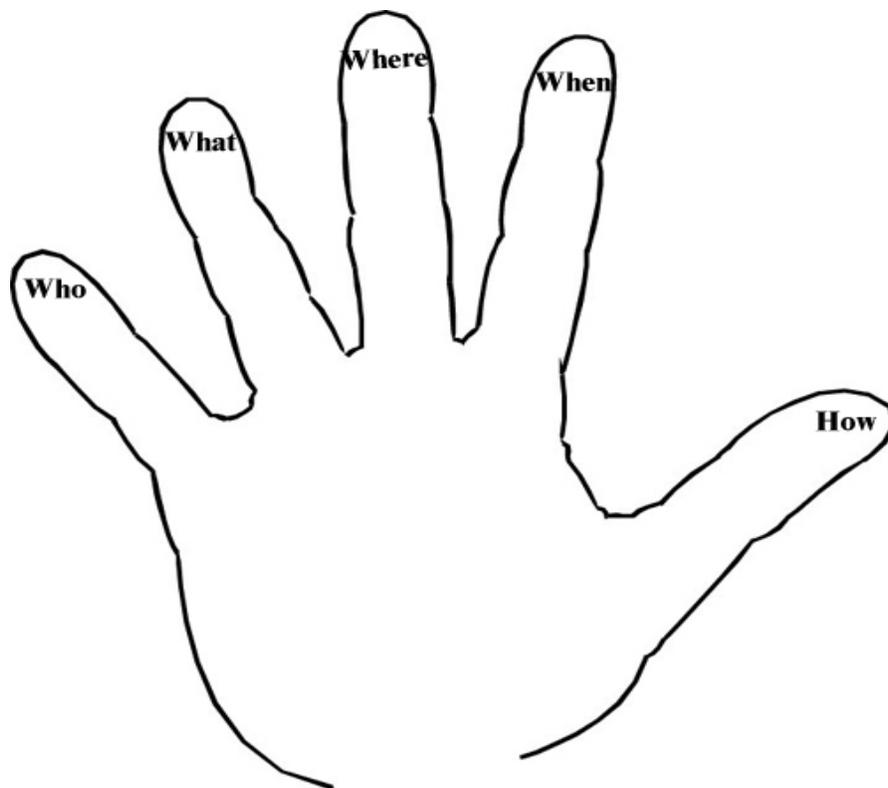
“Who” = identify yourself

“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.”

Reviewing this example: “Who” = Team 1A. “What” = a dog fight with people endangered. “Where” = Old Mill Park. “When” = now, because this is obviously a minor emergency under normal conditions. “How” = summon animal control professionals.

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.”

Reviewing this example: “Who” = Lincoln School tactical call. “What” = rancher will need to use road. “Where” = Hicks Valley and Point Reyes Petaluma Roads. “When” = at noon. “How” = somebody must clear the road of cyclists (Net Control implies it will be CHP’s job).

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—Division 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.

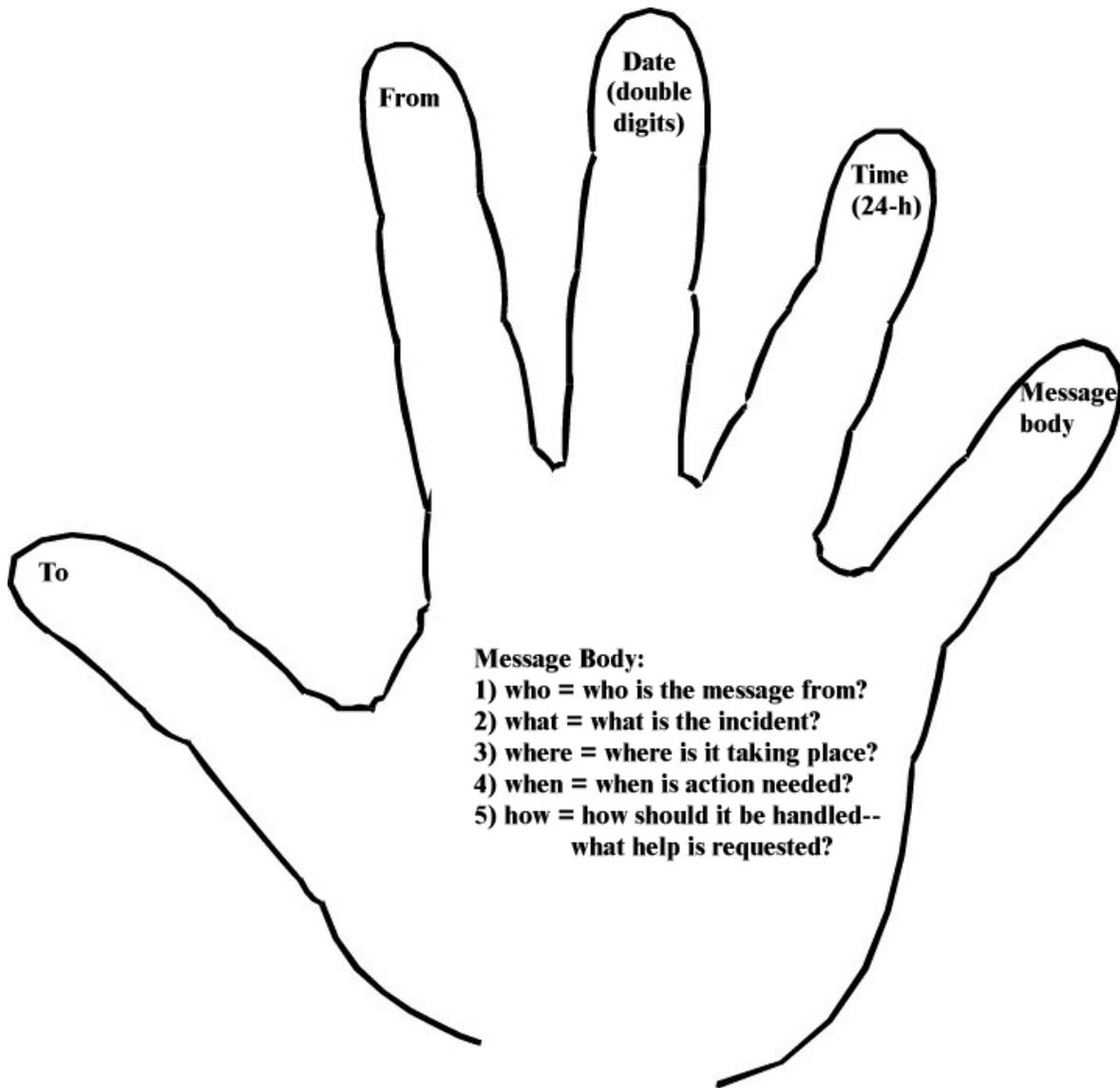
Be precise with the **“from”** element—not just “CERT” but, e.g., “SMFD CERT Division 4B Red.”

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.)

Division Command Post: *“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!”*

Division Command Post: *“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.”*

Division Command Post: *“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.”*

Division Command Post: *“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.”*

Division Command Post: *“Command Post, standing by.”*

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 Command Post Assembly and staging area set up at each CERT Division Commander’s discretion. Each command post 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.

Shadow

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 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/>