

Neighborhood Radio Communications Response Guide



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Index

Pre-disaster–Preparations Guide

| | |
|---|----|
| Personal Radio Response Go-Kit | 4 |
| Prepare the ICP for Radio Communications | 4 |
| Learn About Two-Way Radios | 6 |
| Richmond’s Recommended Radio Communications Process | 9 |
| Communication Network Flowchart | 10 |
| Team Mobilization at Incident Command Post | 11 |
| Responsibilities of Communications Team | 12 |
| Documentation Requirements | 14 |
| Maintaining Your Skills | 15 |

Field Guide–Communications Response

| | |
|---|----|
| Radio Team Leader’s Checklist | 18 |
| Radio Communications Team Field Guide | 21 |
| Field Guide for Runners | 23 |
| Communication Tips for All Teams | 25 |
| Radio Code Words | 27 |
| Clear Text Examples | 28 |
| Phonetic Alphabet | 29 |

Appendix

| | |
|---|----|
| Glossary | 30 |
| Locations of Radio Stations | 31 |
| City Maps | 33 |
| CERT Forms | 34 |
| Emergency Radio Nets | 35 |

INTRODUCTION

CERT Neighborhood Communications Response

A 7.2 earthquake has happened in the San Francisco Bay Area. You and your neighborhood need help but there is no electricity, cell phones, nor landlines.

Your hand-held, two-way radio may be the best option you have to communicate with the outside and get the help you need. As a trained citizen radio operator you can play a role in gathering and transmitting damage and injury reports that will be relayed to the Richmond Emergency Operations Center (EOC). After a major event, we expect services to be interrupted. The City of Richmond does not have a system of gathering field reports from neighborhoods other than windshield surveys by fire and police department personnel, during which they will drive around and assess damage before starting to respond. The few available first responders would be better utilized by giving assistance rather than driving around.

Neighborhood CERT teams will need to take the lead. This document provides you with a process for using hand-held radios to communicate with your local CERT field teams, your neighborhood Incident Command Post (ICP), the city's Radio Emergency Communication (REC) room, or with other neighborhoods and their Incident Command Posts. By learning basic two-way radio operation skills and processes and staying in practice, you are better prepared to help yourself and your neighborhood.

How to Use this Guide

This guide was written for CERT graduates and Richmond citizens. It is divided into two parts.

1. **Pre-disaster Preparations Guide:** The Preparations Guide provides steps to take to prepare yourself, your neighborhood, and your neighborhood Incident Command Post—for communications response—in advance. Begin taking these steps and making these preparations now or as soon as you can.
2. **Field Guide:** The Field Guide provides a checklist for quick action when you're in the field after a disaster. Become familiar with these actions, rehearse them in your mind, and keep printed copies with your emergency supplies. Copies of the Field Guide should be kept by the Radio Operator at each neighborhood Incident Command Post (ICP).

Also refer to the Appendix for useful resources.

Pre-disaster Preparations Guide

This section covers guidelines for preparing yourself and your neighborhood in advance of a disaster. You will be better able to respond if you take the time now to gather radios, equipment and materials, understand processes and team responsibilities, participate in training, and start practicing.

Personal Radio Response Go-Kit

Prepare yourself now by collecting these items in your personal Radio Response Go-Kit.

- Radio (write your name, cell phone #, & Ham call sign, if applicable on radio; if you have additional radios that you intend to loan, write identification codes to track them)
- Extra batteries
- Notepad
- Pencils or pens
- Manufacturer's radio manual
- Clear plastic bag and rubber band (if your radio is not waterproof, cover radio with plastic bag, then wrap rubber band around your wrist when holding radio upright to secure)
- Flashlight (preferably headlamp) and extra batteries in protective bag
- Copy of the Radio Communications Team [Field Guide](#)
- Copy of [Phonetic Alphabet](#)
- ICS Forms such as [General Message \(ICS 213\)](#), [Communications Log \(ICS 309\)](#), [Unit Activity Log \(ICS 214\)](#), and the [Damage Assessment Form](#)

Prepare the ICP for Radio Communications

The neighborhood Incident Command Post (ICP) is a location where neighbors agree to assemble after a disaster. The location should be determined ahead of time. Choose a place that is visible from the road and has shelter.

After a major disaster CERT members will self-activate by reporting to their ICP location. Report to the Incident Commander for assignment and to the Radio Team Leader for a radio (if you don't have one) and base channel to use. Field Teams will begin damage assessment while maintaining communications with their ICP via FRS/GMRS radios. The ICP commander will begin to report in to the City EOC via a designated radio station.

Staffing the Incident Command Post (ICP)

Ideally, two, preferably three individuals are needed to staff the neighborhood ICP.

1. Incident Commander
2. Radio Operator (who is the Radio Communications Team Leader)
3. Scribe

Recommended Equipment at ICP for Communications

Ham Radio with antenna (roof antenna preferred)

- Batteries and/or power supply
- Radio owner's instruction manual

FRS radios (at least two) to remain at the ICP and more to loan out to teams

- Extra batteries and/or power supply
- Radio owner's instruction manual

GMRS radios

- Can be used if ham or CB radios are not available to contact the EOC
- Batteries and radio owner's instruction manuals
- List of channel numbers and programmed frequencies established by your neighborhood Communications Team

Other equipment

- Headsets, microphones, other accessories
- Solar panels for charging batteries
- Lighting, headlamps with batteries
- Antennas and cables

Recommended Materials at ICP

- Notepads, pencils, highlighters, pens, message pads (duplicate)
- Clock
- Whiteboard with markers and/or cork board with tacks
- Volunteer Sign-In/Sign-Out Sheets
- A stack of Radio Communications Team Field Guides
- Field Guides for Runners
- Expandable file or portable file box for forms
- Binders to sort papers
- Clipboards
- Lots of forms—punch holes in forms before the disaster

Forms

| | |
|----------------|--|
| Reminder Sign | SIGN IN/SIGN OUT sheet (Reminder Sign) |
| ICS Form 211 | Volunteer Sign In / Sign Out |
| ICS Form 213 | General Message Form for Runners |
| ICS Form 213 | General Message Form |
| ICS Form 214 | Unit Activity Log |
| ICS Form 303 | Equipment and Radio Check-Out |
| ICS Form 309 | Communications Log |
| ICS Form 204-R | RUNNER Assignment Tracking Form |

Learn About Two-Way Radios

This section describes four types of radios and the pros and cons of each.

NOTE on FRS and GMRS Radios: The Federal Communications Commission (FCC) changed the rules in 2017. FRS/GMRS combination radios that many neighborhoods already have will no longer be manufactured or sold as of September 2019. They are being reclassified as FRS radios. The combination radios may continue to be used.

FRS Radios

- No license is required to operate an FRS (Family Radio Service) radio.
- FRS radios are now allowed to transmit up to 2W of power and will now have 22 channels.
- If you plan to communicate in your local neighborhood, e.g., your own block, or within a radius of several blocks, an FRS hand-held radio should accommodate your needs.
- FRS radio operators do not have call signs, but should be assigned tactical call signs (ex. Search and Rescue 2, Medical 1) by the Incident Commander or Radio Team Leader at their local neighborhood Incident Command Post.

GMRS Radios

- A license from the FCC is required to operate GMRS (General Mobile Radio Service).
- Any radio above 2W of power is now classified as GMRS radio.
- If you plan to communicate both in and beyond your neighborhood, GMRS shares the same 22 frequencies with FRS radio users, but GMRS can operate at higher power levels except for channels 8-14 where both radios are limited to 0.5 watts.
- GMRS will have 30 total channels: 22 FRS/GMRS channels plus 8 repeater channels.
- GMRS radio operators must use their FCC-issued radio call signs when communicating.
- GMRS licensing is now good for 10 years and costs \$70. This covers you and your immediate family. Renewal is required after 10 years at no cost.
- Although Ham (amateur) radio is the preferred method of communication between Neighborhood Incident Command Posts and the Richmond Emergency Communications Radio Room (REC Room), GMRS radios are an alternative for Neighborhood Incident Command Posts who do not have ham equipment nor a licensed ham operator. (See [Richmond's Recommended Radio Communications Process](#), below).
- In order to use GMRS as method of communication, Neighborhood Incident Command Posts must ensure that GMRS users possess a valid GMRS license.
- Note that with higher power on channels 1-7 and 15-22, GMRS radios will overpower FRS radios being used on the same channel in the same vicinity. So, it is recommended that teams go to low 0.5 wattage when different radio types are used, especially in a close situation, such as search and rescue operations.

Ham Radios

- A license from the FCC is required to operate a Ham radio. Additionally, Ham operators must pass an exam before they can use their Ham radio.
- There are three different classes of Ham licenses. Depending upon an operator's license, the power limit for Ham radio is between 200 Watts and 1500 Watts.
- If you plan to communicate outside of your neighborhood, Ham radios are the best method. They are used to establish radio communication throughout the nation and in all major cities for emergency communications.
- Ham radios have the greatest capacity for communications – many frequencies are available and they transmit over longer distances than FRS or GMRS radios.
- Ham radio operators use their FCC-issued radio call signs when communicating.
- All cities have dedicated Ham radio frequencies for emergency use.
- The dedicated emergency frequency in Richmond is **147.450 Simplex**.
- Ham is the recommended radio for communicating with the City of Richmond's EOC (via the REC Room). See [Richmond's Recommended Radio Communications Process](#), below.

CB Radios

- If Ham radios or GMRS radios are not available, CB radios could be used to contact the EOC (via the REC Room). The REC Room has a fully operational CB radio.
- No license is needed to operate a CB radio. Protocol is the same as Ham or GMRS.
- No call sign is needed to talk on a CB radio.
- CB radios can transmit at 5 watts of power, the same as GMRS radios channels 1-7.
- A CB radio with a large antenna is useful for transmitting long distances.
- CB radios should be monitored. CB operators on the roadways (usually truck drivers) cover a great distance. They can be useful for gathering information on freeway conditions throughout the Bay Area and into the Central Valley.
- CB channels are under-used, allowing CERT leaders to use them for inter-neighborhood or area communications, freeing up the load of traffic on the Ham, GMRS, or FRS frequencies. Forty (40) channels are available on CB radio—more than twice as many channels as available on GMRS.
- The standard emergency call number is Channel 9. However, the emergency channel for Richmond is **Channel 15**.

Frequencies/Channels Available for FRS and GMRS

Channels 1-22 can be used by both FRS and GMRS radios at these maximum power settings:

| Channels | FRS | GMRS |
|---------------------------|-----------|--|
| 1-7 | 2 Watts | 5 Watts |
| 8-14 | 0.5 Watts | 0.5 Watts |
| 15-22 | 2 Watts | 50 Watts |
| 23-30 (Repeater channels) | n/a | 50 Watts if a GMRS Repeater is available |

Emergency Frequency for Ham Radios

The Ham radio station at the ICP should have the City of Richmond's EOC frequency programmed before an emergency. The City of Richmond's EOC frequency is:

147.450 megahertz (MHz) Simplex.

Simplex frequencies are recommended because repeaters may be non-functional after an earthquake. Simplex is radio-to-radio communication without the use of a repeater.

If the EOC needs to contact the Contra Costa County EOC, they will use the repeater frequency of 145.490 MHz.

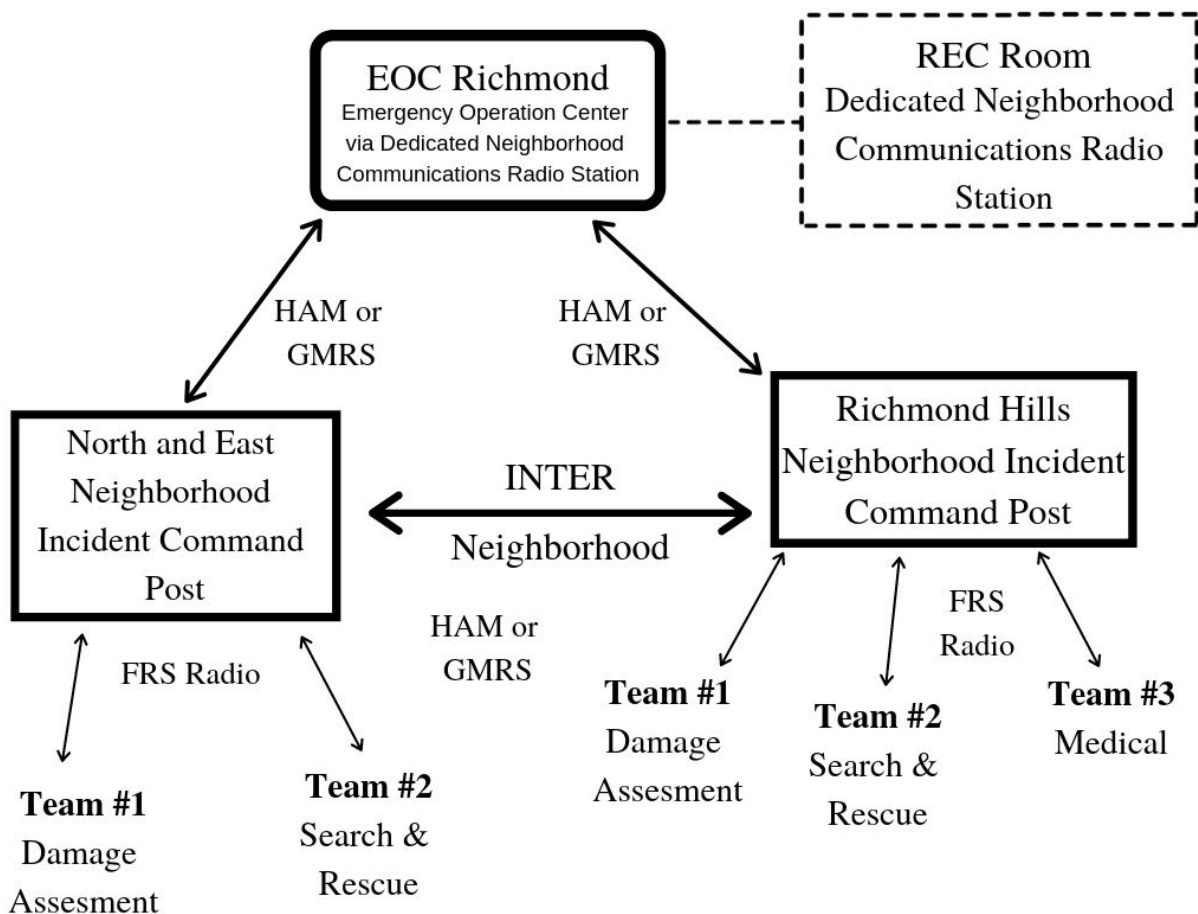
| | | |
|-------------|--|-------------------------|
| 147.450 MHz | Simplex | City of Richmond EOC |
| 145.490 MHz | Repeater Setting 107.2 PL TONE Offset: -0.600 | Contra Costa County EOC |

Richmond's Recommended Radio Communication Process

FRS or GMRS (at 2 Watts) radios are recommended for communicating locally between field teams and the ICP and within field teams. GMRS radios are useful for communicating longer distances and between neighborhoods. Ham is preferred for communicating with the EOC (via the REC room), but if a Ham radio is not available, CB can be used. The REC room currently has a CB radio, but not a GMRS. If the earthquake happens before the REC room is operational, Ham radio operators will set up a mobile emergency station outside City Hall.

| Radio | For | Channels and Watts |
|-------------------|--|--|
| FRS | INTRA-neighborhood communications <ul style="list-style-type: none"> Between CERT field teams Between CERT field teams and their neighborhood Incident Command Post (ICP) | 1-7 at 2 Watts 8-14 at 0.5 Watts 15-22 at 2 Watts |
| GMRS | INTER-neighborhood communications <ul style="list-style-type: none"> From one neighborhood to another From one Incident Command Post to another | 1-7 at 5 Watts 8-14 at 0.5 Watts 15-22 at up to 50 Watts 22-30 at 50 Watts with a GMRS Repeater |
| HAM GMRS CB | Incident Command Posts to EOC <ul style="list-style-type: none"> From neighborhood Incident Command Post to the Richmond Emergency Communications Room (REC Room) <p>The REC Room is located on 27th and Nevin, near the City buildings. It is equipped with Ham and CB radios. The City's plan is to allow this room to be operated by vetted community radio operators for disaster response. These REC Room operators will receive messages from neighborhood ICPs and relay them to the City of Richmond's EOC (Emergency Operations Center) by runner. Back up plan: ham operators will set up a mobile emergency radio station outside of City Hall.</p> | HAM: 147.450 MHz Simplex GMRS (see row above) CB channel 15 |
| Runner | A runner will deliver hand-held messages from the REC Room at 27th and Nevin to the EOC located in the basement on the east side of City Hall at the corner of Barrett Avenue and 27th Street. | |

Communication Network Flowchart



Use the lowest wattage possible to:

1. save batteries
2. minimize interference
3. prevent disruption of other radio operators.

Minimizing interference is important because:

1. You have a limited number of channels.
2. This reduces the need to retransmit message.

Team Mobilization at the Incident Command Post

Understand Your Key Communications Role—Reporting Damage and Injuries

Before you leave your house, make sure you, your house, and your family are safe. Put on the boots or sturdy shoes you keep at the side of your bed. Take care of yourself, check on your family, and your home. Smell for gas and look for water leaks.

Put on your CERT vest, gloves and hard hat. Get a notepad and pencil and grab your two-way radio (with extra batteries that you have available in your Radio Response Go-Kit) and head outside to the neighborhood Incident Command Post (ICP).

As you walk towards the ICP, survey the damage you see along the way.

The Damage Assessment Team is usually the first team mobilized at the ICP. The job of the Damage Assessment Team is to walk around the neighborhood and report back to the ICP on any damage. Always work in teams. As you walk the street with your partner or team, survey the damage, takes notes, and report back. Here is an example of how you can use your radio to report to the ICP.

Talking on the Radio to Report Damage and Injuries

When you are transmitting, give four pieces of information:

1. Who you are calling
2. Who you are (use your tactical call sign if you have one – this is a shorthand designation for your team’s function, such as SAR1 for Search and Rescue Team 1)
3. Where you are
4. What you want and need

Then pause and wait for a reply.

For example: ***“Incident Command Post, this is _____ at the corner of Amador and Sierra. Downed power line. Resource request: Need 1 roll caution tape. OVER.”***

Listen carefully for the response and make a note.

If you just want to contact the Incident Command Post, say:

“Incident Command Post, this is _____. OVER.” Wait and listen for a reply.

If no reply, repeat transmission 2 more times. If still no reply, call another field team and ask them to relay your message.

For example: ***“Could anyone relay for me?”*** If yes, you could say: ***“This is Damage Assessment 1. Need caution tape at Amador and Sierra. Can you relay to Incident Command Post?”***

If no contact, send a runner to deliver your message.

Responsibilities of the Communications Team at the ICP

ICP Radio Team Leader

- Be familiar with Incident Command System (ICS) forms and keep records.
- Be familiar with Ham radio frequencies and communicate with the Richmond EOC (Emergency Operations Center) via the Richmond Emergency Communication Room (REC Room), which should be staffed by community members.
- Understand the limitations and uses of Ham, GMRS, FRS, and CB radios.
- Monitor AM and FM radio broadcasts for emergency instructions or evacuation orders.
- Keep spare radio batteries for both field radios and AM/FM radios.
- Set up all radios and ensure they are in working order.
- Determine what channels are open and assign channel(s) for Field Team-to-Incident Command Post communication.
- Inform all radio users of designated channel(s) for Field Team-to-Incident Command Post communication, and update Field Teams of any channel changes that occur during deployment.
 - NOTE: Members of the same Field Team will often need to communicate with each other by radio. In this case they need two radios: one radio set to the Field Team channel and one radio set to the ICP Radio Team Leader channel. The Radio Team Leader will also need extra radios to monitor all Field Team channels.
- Keep channels clear of anything but necessary communication.
- Communicate by FRS or GMRS radio between the Incident Command Post and the Field Teams and by Ham radio (or CB if that's all you have available) between the Incident Command Post and the EOC.
 - NOTE: If a Field Team is unable to contact the Incident Command Post Radio Team Leader directly, he/she may be able to relay the message to another Field Team that does have contact.

Optional 2nd Radio Operator

If a secondary radio operator is available, he or she can:

- Relieve Radio Team Leader as needed
- Deliver messages to and from the Incident Commander
- Monitor AM/FM radio or television broadcasts
- Monitor CB radio transmissions
- Supply and re-install spare batteries for radios

Scribe Responsibilities

Often the Radio Operator serves as scribe. But, ideally, a person is available at the Incident Command Post to assist the Radio Operator in writing down incoming messages from FRS/GMRS and ham radios. Responsibilities are:

- ❑ Assist the Radio Operator in writing down messages. Using duplicate phone message pads is helpful when you need to give a message to the Incident Commander and retain a carbon copy.
- ❑ **Record messages as they have been received. Do not alter a message from its initial content.**
- ❑ Also use the Communications Log (ICS 309) to log all messages sent and received.
- ❑ Emergency messages need to be transmitted immediately to the radio operators at the REC Room who will have a runner hand-deliver messages to the EOC.
- ❑ Messages to the EOC should be written on the ICS 213 General Message form. Be sure to log the status of these messages on the Communications Log (ICS 309) and keep checking for responses.
- ❑ Use General Message Form (ICS 213) for any messages that need to be hand-delivered by runner to the EOC or to another neighborhood Incident Command Post.

Note on General Message Form (ICS 213): Formal written traffic is not simply taking notes and handing them off. Accurate written messages are necessary when recipients are not immediately present to hear, receive, and respond to the message, or when the message is to be further relayed to another station or location, such as the EOC. To be useful written traffic must have certain necessary elements/fields. The essential fields are the “To” and “From” fields, including functional titles/positions, and time and date.

- ❑ Assist the Incident Commander by documenting each team's Tactical Call Sign and ensuring the Radio Team Leader has a copy.
- ❑ Assist the Radio Team Leader in documenting the identifying numbers on radios that have been loaned out, including the date and time of their return.
- ❑ Work with the Incident Commander to forward all documentation to the EOC at the conclusion of the incident.

Field Team Runners

If all radio and telephone communications fail, the only reliable option may be employing runners from the Field Teams to hand-carry written messages between the Incident Command

Posts and the EOC. If runners are used, the General Message Form (ICS 213) should be used to communicate these messages.

Runners may travel on foot, bicycle, or vehicle if roads are open. If on foot or bicycle, two (2) people should travel together. Runners should remain in radio contact with the Incident Command Post to keep them informed of progress and status. The ICP can use the [Runner Assignment Tracking Log \(ICS 204-R\)](#) to document the names of runners, location dispatched to, and times they were dispatched, and the time returned to the Incident Command Post.

Runner responsibilities are to:

- Work in pairs when traveling by foot or bicycle.
- Use the General Message Form (ICS 213), City Map, and information from ICP Radio Team Leader to determine the best and safest route.
- Define your route to the Incident Command Post prior to departure.
- Alert the Incident Command Post Radio Team Leader to your departure time and ensure that the information is logged prior to departure.
- Ensure that each message sent has a sender and recipient on the message.
- Review each message before leaving the Incident Command Post for clarity so that you may answer any questions the recipient may have.
- Check in with Incident Command Post Radio Team Leader immediately upon return and ensure return has been properly logged on the [Runner Assignment Tracking Log \(ICS 204-R\)](#)

Documentation Requirements

At the conclusion of the incident all completed original forms must be given to the Documentation Unit. The Documentation Unit works under the Planning section at the Incident Command Post. It is their responsibility to collect, record, and safeguard all documents relevant to the incident. This will include messages, Volunteer Sign-In / Sign-Out sheets, Unit Activity Logs (ICS 214), and other incident documents.

Documentation is required in order for the City of Richmond to get reimbursement from outside agencies. The neighborhood Incident Commander forwards all documentation to the EOC.

During the incident, use of ICS forms (or ICS forms adapted by CERTRichmond) is encouraged. If these forms are not available, all necessary information should be recorded on any available paper.

All messages need to include the date, time, and the person who sent the message. Messages should not be altered from their initial content.

Neighborhood Team Leaders are expected to be familiar with CERT communication forms. Practice using these forms during communication drills and store copies at your ICP.

Field Teams use:

- General Message Form (ICS 213)

- Unit Activity Log (ICS 214)–**Each team will have their own Unit Activity Log daily.**

Radio Team Leaders use:

- [Radio Communications Plan \(ICS 205\)](#)
- [Communications Log of Messages \(ICS 309\)](#)
- [Unit Activity Log \(ICS 214\)](#)–**Create a new log daily for each team.**
- [Equipment and Radio Check-Out Sheet \(ICS 303\)](#)–to record loaned radios and other equipment

Maintaining Your Skills

How can you maintain a state of readiness so that you are able to function effectively after the stress of a disaster? Training and practice are necessary.

- Take advantage of the training and practice drills in your communities. Check CERTRichmond.org.
- Participate in regular Ham and GMRS radio emergency nets. A “net” is readiness practice, a scheduled session on ham/amateur or GMRS radio. A typical net session begins with the “Net Control” (NC) station reading an opening script that establishes the purpose of the net. Individual members check in at the direction of the NC station operator. For a list of some of the local nets visit CERTRichmond.org.
- Practice using your radios with your family and your neighbors. Start a neighborhood radio net and call each other regularly.

Radio Nets can be used to:

- Standardize radio equipment within and between neighborhoods
- Practice following a structured radio net control protocol
- Conduct regular practice/drills between neighborhoods
- Designate primary and secondary channels
- Map best locations and dead zones
- Create street maps with addresses
- Identify radio relay points

Make sure you are able to:

- Turn your radios on and off
- Follow the instructions in the owner’s manual for your radio
- Recognize the function of the radio display icons and buttons
- Select and change channels
- Use the push-to-talk button without cutting off your words
- Speak into the microphone without “spitting” consonants
- Hold the radio properly with the antenna upright
- Raise and lower the volume
- Change the batteries in your radio
- Use the protocol recommended in this guide

Review the next section of this guide and make multiple copies for your neighborhood teams (Radio Team Leader, Field Teams, Scribes and Runners) so you are ready to respond after a disaster.

Neighborhood Emergency Radio Communications



Field Guide

3/7/19

CERT Neighborhood Communications–ONE Copy for Each DAY

Radio Team Leader’s Checklist

Radio Team Leader will follow this protocol every day.

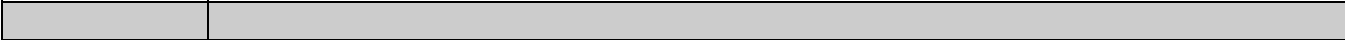
Have a copy for every day.

| Time Done | Action | Date _____ |
|-----------|---|------------|
| | <p>Set up Initiate the Unit Activity Log (ICS 214) form Radio Team Leader: _____ Scribe: _____ Get briefed by Incident Commander (IC). Set your ham radio to the Richmond emergency channel 147.450 megahertz (MHz) Simplex. Set up communication whiteboard (or whatever you can find). Sketch an Incident Command Post Organization Chart. Put out SIGN IN/SIGN OUT Sheet reminder. Incident Commander will put out Volunteer Sign IN/Sign Out sheet.</p> | |
| | <p>Collect Material & Determine Channels Radio Team Leader Use Radio Communications Plan (ICS 205) to assign the channel that Field Teams will use and an alternate channel for communicating. Determine what radios and types of radios are available for use. Use Assignment Tracking Log (ICS 204) to assign Tactical Call Signs. Record loaned radios on Equipment and Radio Check-Out sheet (ICS 303). Put a piece of tape with an identification number and owner’s name on loaner radios before distributing. Materials Needed: Communications Log (ICS 309) (log ALL messages here) General Message Forms (ICS 213) (lots for running messages when radios don’t work or not enough radios) Unit Activity Logs (ICS 214) (1/day), Assignment Tracking Log (ICS 204) filled in by Incident Commander; include Tactical Call signs, Radio Communications Plan (ICS 205) (1/day), Volunteer Sign In-Out List (ICS 211) (1/day),</p> <ul style="list-style-type: none"> ● Radio Communications Team Field Guide (provide 1 per team) ● Radios with extra batteries ● Citywide and neighborhood maps ● Pens, pencils, notepaper ● Whiteboard, whiteboard markers ● Lighting (headlamps and batteries) ● File folder with forms and portable file box ● Recommended spiral bound phone message book (duplicate) for the initial part of the incident to record messages. | |

| | |
|--|--|
| | <p>Assign Radios Ensure each field team has a radio. Assign Tactical Calls Signs to all teams. Radio Team Leader make sure you ALWAYS have a team with a minimum of TWO people. Use the Radio Communications Plan (ICS 205). Fill in Volunteer Sign In-Out List (ICS 211) Form. Assignments are given by the Incident Commander (IC). Record information on Tactical Call Signs, team members' names, and assignment location. Also record on the whiteboard or paper. Ex. "Search and Rescue 2—even numbered houses on block." Have Field Team Leaders check radios before sending people on assignment.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Turn on radio. <input type="checkbox"/> Check the battery power. <input type="checkbox"/> Set the radio to the assigned channel. <input type="checkbox"/> Have all teams do a radio check with you before going out. <input type="checkbox"/> Bring extra batteries. <input type="checkbox"/> Give a Radio Communications Team Field Guide to each team. <input type="checkbox"/> Give multiple General Messaging Forms (ICS 213). |
| | <p>Record Messages Record emergency messages on the General Message Form (ICS 213) and transmit immediately to the EOC. Record all incoming messages on Communications Log (ICS 309) from Field Teams. Deliver messages to the Incident Commander (IC). Receive messages from Incident Commander and relay information and actions to field teams. RECORD! RECORD! RECORD! Include the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Date <input type="checkbox"/> Time in 24 hour time. (Ex. 6:30 AM record as 06:30.) <input type="checkbox"/> To & From and Position/Title <input type="checkbox"/> Message <input type="checkbox"/> Use ABCs—<u>A</u>ccurate, <u>B</u>rief, & <u>C</u>lear <input type="checkbox"/> Collect all General Message Forms (ICS 213) and Communication Logs (ICS 309) at end of assignment and give to Incident Commander. |
| | <p>Things to Consider</p> <ul style="list-style-type: none"> <input type="checkbox"/> Make sure you check in with radio field teams every 30 minutes (minimum) and record status. If you don't hear from them, <ol style="list-style-type: none"> 1) Contact other teams to see if another team can communicate with them. 2) If NO, send TWO runners with a radio to check on missing team. <input type="checkbox"/> Ask for relief if you are getting tired and not thinking clearly. <input type="checkbox"/> Take care of your team. If people are tired or overloaded, tell them to take breaks or replace them. <input type="checkbox"/> Always brief your replacement. <input type="checkbox"/> Monitor broadcast stations for emergency information: 740 AM & 106.9 FM. <input type="checkbox"/> Make sure you account for all team members and this is done by making sure |

people [Volunteer Sign In / Sign Out \(ICS 211\)](#) as they come and go and also finish their assignment for the day. **This is a major safety concern!**

- ❑ Collect all radios. Record on [Equipment and Radio Check-Out Sheet \(ICS 303\)](#).



Communicate with EOC

Use the City of Richmond’s Ham radio frequency **147.450 megahertz (MHz) Simplex** to communicate from the ICP to the City of Richmond’s EOC via the REC Room. This frequency was assigned by the Contra Costa County EOC to the City of Richmond. **Use [General Message Form \(ICS 213\)](#) to deliver emergency messages.**

NOTE: If the Richmond EOC needs to contact the Contra Costa County EOC, they will use the Repeater frequency of 145.490 MHz.

| | | |
|-------------|--|-------------------------|
| 147.450 MHz | Simplex | City of Richmond EOC |
| 145.490 MHz | Repeater Setting 107.2 PL TONE Offset: -0.600 | Contra Costa County EOC |

Communicate with Other Neighborhoods (INTER-neighborhood) and the EOC

If you need to reach the Richmond REC Room/EOC and are unable to, you may be able to reach a Ham in a nearby neighborhood and ask them to relay your message to the EOC.

Additionally, other neighborhoods may have resources available that they can share for mutual aid.

Check in with adjacent neighborhood for status on hazards and road conditions.

CERT Neighborhood Communications–Give ONE copy to each TEAM

Radio Communications Team Field Guide

Radio Check

- Turn on radio.
- Check the battery power.
- Set the radio to the assigned channel.
- Get Tactical Call Sign, ex. Medical Team 1.
- Call Radio Team Leader for radio check.
- Make sure you have extra batteries.
- Take a copy of the [Damage Assessment Form](#) for your team to use
- Take multiple copies of [General Messaging Forms \(ICS 213\)](#). Use these when unable to communicate by radio.

Radio Troubleshooting

| IF | THEN |
|---|---|
| Nothing appears in the LCD display after you turn the radio on (ON/VOL) | Check the batteries. The batteries may be installed incorrectly or dead. |
| The radio dies or drops in volume | The batteries may be low. Replace batteries. |
| LCD is lit but you cannot hear anyone | Turn the volume up or relocate to another position in an area away from tall buildings, metal fences, and vehicles. Check to see you are on the assigned channel. You must be on the same channel as the person with whom you are trying to communicate. |
| You relocated and are on the correct channel, but still cannot hear | Try turning your radio to the highest power setting. Call another station and ask for a relay. |
| No one can hear you | Make sure VOX is not turned on. Make sure your microphone is not covered. |
| You cannot change channels or make adjustments | Check to see that the radio is not in the Lock position. If it is, press the Lock button to unlock. |

Safety Tips

- Always work with a partner.
- Always bring at least one radio.
- Wear protective gear and weather-appropriate clothing.
- Check in every 15 minutes with Radio Team Leader. If you can't reach Radio Team Leader at the Incident Command Post, see if you can relay through another team to update them on your status.
- Check for and note hazards on your route.
- Do NOT become a victim!
- Return to Incident Command Post and check in with Radio Team Leader when finished with your assignment. Remember to **SIGN OUT**.

On Assignment

Materials: Paper, pencil, [Damage Assessment Form](#), [General Message Forms \(ICS 213\)](#), [Unit Activity Log \(ICS 214\)](#), two radios, extra batteries, personal protective gear, any additional resources for your assignment

1. Check out the radio from the Radio Team Leader on [Equipment & Radio Check-Out Sheet \(ICS 303\)](#) unless you are using your personal radio. Make sure it works before leaving on your assignment and you are on the correct channel.
2. Get your team assignment. Remember your Tactical Call Sign.
3. Decide who will be the team's radio operator.
4. Check in with the Radio Team Leader at the ICP every 15-30 minutes.
5. When you return from the field, report to the Radio Team Leader. Turn off the radio and return all borrowed equipment and paperwork to the Radio Team Leader.
6. At the end of your duties remember to **SIGN OUT** on [Volunteer Sign In / Sign Out](#).

CERT Neighborhood Communications—Give ONE copy to each TEAM Runners’ Field Guide

Radio Check

- Turn on radio.
- Check the battery power.
- Set the radio to the assigned channel.
- Get Tactical Call Sign, ex. Runner 1.
- Call Radio Team Leader for radio check.
- Bring extra batteries.
- Bring multiple copies of [General Messaging Forms \(ICS 213\)](#). Use these when unable to communicate by radio.

Radio Troubleshooting

| IF | THEN |
|---|--|
| Nothing appears in the LCD display after you turn the radio on (ON/VOL) | Check the batteries. The batteries may be installed incorrectly or dead. |
| The radio dies or drops in volume | The batteries may be low. Replace batteries. |
| LCD is lit but you cannot hear anyone | Turn the volume up or relocate to another position in an area away from tall buildings, metal fences and vehicles. Check to see you are on the assigned channel. You must be on the same channel as the person with whom you are trying to communicate. |
| You relocated and are on the correct channel, but still cannot hear | Try turning your radio to the highest power setting. Call another station and ask for a relay. |
| No one can hear you | Make sure VOX is not turned on. Make sure your microphone is not covered. |
| You cannot change channels or make adjustments | Check to see that the radio is not in the Lock position. If it is, press the Lock button to unlock. |

Safety Tips

- Always work with a partner.
- Always bring a radio.
- Wear protective gear and weather-appropriate clothing.
- Always communicate your route before leaving.
- Check in every 15 minutes with Radio Team Leader.
- Check for hazards on your route.
- Do NOT become a victim!
- Return to Incident Command Post and check in with Radio Team Leader. Make sure that your return status is recorded on the [RUNNER Assignment Tracking Log \(ICS 204-R\)](#).
- At the end of your duties remember to **SIGN OUT** on [Volunteer Sign In / Sign Out](#).

On Assignment

Materials: paper, pencil, [General Message Forms \(ICS 213\)](#), [Unit Activity Log \(ICS 214\)](#), [Damage Assessment](#), two radios, extra batteries, personal protective gear, any additional resources for your assignment

1. Check out the radio from the Radio Team Leader on Equipment and Radio Check-Out Sheet (ICS 303) unless you are using your personal radio. Make sure it works before leaving on your assignment and you are on the correct channel.
2. Get your team assignment. Remember your tactical call sign.
3. Decide who will be the team's radio operator.
4. Check in with the Radio Team Leader every 15-30 minutes.
5. Have a clear route established. Understand that you may need to change your route. Carry a city map.
6. When you return from the field, report to the Radio Team Leader. Turn off the radio and return all borrowed equipment and paperwork to Radio Team Leader.
7. Carry [Damage Assessment](#) reports and note hazards, injuries, & road conditions.
8. Ensure that each message sent has the sender and recipient filled in on the form.
9. Before leaving to deliver message, read the message to make sure the messages is clear.
10. Once you deliver the message, wait for them to write a reply. Then return to Incident Command Post.
11. Check in with Incident Command Post Radio Team Leader immediately upon return and ensure your return has been properly logged.
12. Always [SIGN OUT](#) when done with your shift.

Communication Tips for all Teams

Communication Basics

- Only one person can talk at a time, but all people with radios can listen at the same time.
- Listen carefully.
- Acknowledge all transmissions addressed to you. (Say “Copy that.”)
- If two people talk at the same time, stop and start over.
- Check in regularly.
- Follow the **ABCs** of communication—**A**ccurate, **B**rief, and **C**lear.
- Do not tie up radio channels with unnecessary talk..

Talking

- Press the Push to Talk (PTT) button when you want to speak and hold for a half a second before you speak. Hold the button the entire time you are talking. Wait a half second after talking before you release the button.
- Take your time and think of what you’ll need to say before you say it.
- Keep message short but complete. (See [Clear Text vs. Conversation](#) in the Appendix.)
- Speak calmly and clearly in a normal voice. Do not yell.
- Use phonetic alphabet if needed. (See Phonetic Alphabet Chart in Appendix.)
- Talk at a speed that people can write down what you are saying. Say five words at a time, then pause and let off the Push-to-Talk button in case listener needs to say “slow down” or “speed up!” If nothing is heard, continue transmitting your message at that pace with pauses every five words.
- When giving numbers, say each number separately, e.g., say “one-zero-five-nine”, not “ten-fifty-nine.”

How to hold your radio

- Keep antenna vertical.
- Hold radio about a thumb’s distance from your mouth and at a slight angle.

Messages

Whether a message is urgent, general, or just a radio check-in, it should include these elements:

1. Who you are calling
2. Who you are (name and your Tactical Call Sign, or just your Tactical Call Sign)
3. Where you are
4. What you want and need

Urgent Message!

Urgent messages identify a life threatening situation including active hazards and immediate medical needs. When giving an urgent message, use the words “Emergency!” or “Emergency Traffic!”

| | |
|-------------------------------------|---|
| Break in to identify an emergency | Say: “Emergency Traffic!” You will also hear and can say, “Break Break” for emergencies. |
| Who you are calling and who you are | “ICP (tactical call sign for Incident Command Post) this is Fire Suppression 1 (FS1) with Emergency Traffic!” |
| Response | “FS1, this is ICP. Go ahead.” |
| Message and Location | “ICP, this is FS1. People trapped in burning house at one-zero-two-eight Sierra.” |

General Message Example

| | |
|-----------------------------------|--|
| Who you are calling | “ICP” (Incident Command Post is the Radio Team Leader.) |
| Who you are | “This is SAR2 (tactical sign for Search & Rescue 2). Do you copy?” |
| Wait for response | “SAR2. This is Incident Command Post. Go ahead.” |
| Re-identify, Location and Message | “ICP. SAR2 at 31st and Clinton. Resource request: 6 blankets.” |

Radio Check-in Example

| | |
|-------------------------------------|--|
| Who you are calling and Who you are | “ICP this is SAR3 checking-in.” NOTE: The Incident Command Post is the Radio Team Leader. |
| Wait for response | “SAR3. This is ICP What’s your location?” |
| Re-identify, Location | “SAR3 at 700 block of 31st Street. OVER.” |
| Response from Command Post | “SAR3. This is Incident Command Post. Copy that.” |

Radio Code Words

| CLEAR MESSAGE | AVOID |
|---|---|
| Copy | "I can hear you clearly." |
| Over | "I am through talking and waiting for an immediate reply." |
| Go ahead | "I am here and ready to receive your message." |
| Standing by | "I am waiting and listening for a reply or further information." |
| Roger | "I have received your message and I understand it." |
| Correct or Affirmative | "Yes"—these words are more easily understood on the radio |
| Say again / Repeat last transmission | "Please repeat what you just said." |
| Correction | "I am going to correct an error in what I said." |
| Negative | "No" |
| Doubled | Two stations are talking at once. Both stations need to pause and re-transmit separately. |
| Radio Check | "Can you hear me okay?" |
| Relay | "I'm unable to send my message. Please send my message." |
| Out | "I am turning my radio off." Don't say "out" unless you are finished with the use of the radio. |

Clear Text vs. Conversation

| Clear Text | Conversational (don't use radios for conversation) |
|--|--|
| Unreadable | I can't hear that; there's too much static. |
| Repeat | What did you say? I didn't hear you. Someone else was talking to me. |
| Responding | We are on our way to the animal evacuation. |
| Enroute Burg Park | We are going to Burg Park. |
| Available | We are finished with the delivery of supplies to Burg Park and we are on our way back ready for a new job. |
| Available at scene | We are still at Burg Park and unloaded victims, but can take another job if you need us to. |
| At scene | I have arrived at Burg Park. |
| Emergency traffic | We have just come upon some seriously injured people and need to talk to you right away. Everyone needs to be quiet. |
| Resource request (Be clear & specific.) | We need some medical help on this one. |
| Can handle | We have what we need to do this job. |
| Copy | Ok, I understand what you want me to do. |
| Incident Command- Search & Rescue 2 | Incident Command. This is the Search & Rescue 2 Team. |
| Radio Check | This radio doesn't seem to be working very well. Can you hear me ok? |

Phonetic Alphabet

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

Appendix

Glossary

| Term/Acronym | Definition |
|--------------------|---|
| COMM | Written Abbreviation for “communications.” COMM is understood by government agencies, fire, police, etc. |
| EOC | Emergency Operations Center |
| FCC | Federal Communications Commission |
| Frequency | Same as “channel” on a radio. |
| ICP | Incident Command Post. The staging area where neighbors meet after a disaster. Sometimes called the Neighborhood Command Post. |
| ICS | Incident Command System. A structure and organization for managing and responding to incidents. Typically there is the IC and 4 main sections: Operations (oversees actions such as Search and Rescue), Planning (plans, collects information and documents), Logistics (ex. communication, facilities, resources, medical unit) and Finance. |
| Mobile Station | If you are walking around with your radio, you are considered a mobile station. |
| OES | Office of Emergency Services—Establishes and maintains the Emergency Operations Center (EOC) in a state of operational readiness. Serves as an on-call EOC first responder after a disaster on a 24-hour basis. |
| REC Room | Richmond Emergency Communications Room—This is the emergency communications room run by community members. |
| Relay | If a station cannot reach its intended contact, another station that is able to communicate with the sender and the intended contact can forward the message for them. |
| Repeater | A remote station located in a high position that automatically relays a transmission. If a radio can reach a repeater, it is more likely to reach another radio. |
| Simplex | Radio-to radio-communication, (i.e., using radios without a repeater) |
| Station | Each radio is considered a station, including each hand-held. |
| Tactical Call Sign | The name assigned to your team station that you will use when talking on the radio; for example, "Medical 2" or "Search and Rescue 1." |

Locations of Radio Stations

| Radio Station | Location | Staffed By |
|--|---|---|
| EOC (Emergency Operations Center) | Richmond City Hall basement, Barrett Ave. and 27th St. Richmond | <ul style="list-style-type: none"> • City Manager (who becomes the EOC Director after a disaster) • Office of Emergency Services Manager (who becomes the EOC Manager after a disaster) • Other City employees |
| REC Room (Richmond Emergency Communications Room) | 326 27th St. between Nevin and McDonald, Richmond | Citizen radio operators vetted by Contra Costa County Sheriff's Office |
| Neighborhood Field Teams | Convene at Neighborhood Incident Command Posts. Roam throughout neighborhoods | Citizens with hand-held radios |
| Neighborhood Incident Command Posts | As designated by each neighborhood | Neighbors |

MY NEIGHBORHOOD INCIDENT COMMAND POST (ICP) IS LOCATED AT:

Enter the location of your neighborhood ICP on the line above.

City Maps

It is important to have hard copies of these available with your Neighborhood Incident Command Post. To ensure access, print these out BEFORE an incident as you may have no internet or power. Here are some useful City maps:

- [City of Richmond \(small map, little detail\) \(PDF\)](#)
- [Wall-sized city map. Detailed. \(PDF\)](#)
- [Fire Response Areas–City of Richmond and mutual aid sectors. Detailed. \(PDF\)](#)
- [Neighborhood Council Districts. Detailed. \(PDF\)](#)

Here is the complete list of City maps, <https://www.ci.richmond.ca.us/290/Map-Gallery>.

CERT and ICS Forms

| | |
|---|--|
| Unit Activity Log (ICS 214) | <p>Field Team Leader and Incident Commander: use to record details of notable activities. Use one new form each day</p> |
| Communications Log of Messages (ICS 309) | <p>Radio Team Leader: use to briefly log all messages received and sent.</p> |
| <p>General Message Form for Runners (ICS 213)</p> <p>General Message Form (ICS 213)</p> | <p>Two versions. Both used to record messages that need to be communicated to a recipient who is not present.</p> <p>Used by the Incident Commander to give a written message to the Radio Team Leader for transmission to the EOC, other agency or addressee. This form is also used to send any message to incident personnel that requires hard-copy delivery. Runners carry 213 messages to recipient.</p> |
| Volunteer Sign In / Sign Out (ICS 211) | <p>Records arrival and end times of volunteers, lists their skills and training, helps determine their assignment(s). Form stays at the Incident Command Post.</p> |
| Equipment & Radio Check Out Sheet (ICS 303) | <p>Identifies and lists equipment and radios and the time and to whom the items were checked out and returned.</p> |
| Damage Assessment Form | <p>Field Teams: use this form to document hazards, damage and injured persons.</p> |
| Assignment Tracking Form (ICS 204) | <p>Used by Incident Commander to detail team and individual assignments and log tactical call signs.</p> |
| RUNNER Assignment Tracking Form (ICS 204-R) | <p>Records when runners leave and return from assignments.</p> |
| Radio Communications Plan (ICS 205) | <p>Used by Radio Team Leader to list radio frequencies available and assign to team(s)</p> |

Richmond Area Emergency Radio Nets

Ham Radio Nets

| Name of Net | Days/Time | Frequency | Tone/Direction | Website |
|------------------------------------|--------------------|--------------------------|-----------------------|---|
| Richmond CERT Net | Sat 0900 hrs. | 145.110 | -82.5 | |
| West Contra Costa County ACS/RACES | Thurs 1845 hrs. | 145.110 | -82.5 | http://www.wa6kqb.org/ |
| Kensington-EI Cerrito KARO-ECHO | Thurs 1900 hrs. | 146.415 | Simplex | https://www.karoecho.net/ |
| N.ALCO RACES ARES | Thurs 1915 hrs. | 147.480 or 440.900 | Simplex +131.8 | |
| Marin Co. RACES | Tues 1700 hrs. | 146.700 | -179.9 | |

GMRS Radio Nets

| Net | Date/Time | Channel | Note |
|--------------------------------|-------------------------------|-----------------------|---|
| Richmond Annex Net Control | Tues 1900 hrs. | 15 | |
| 1st Wed two-way radio practice | 1st Wed every month 1100 hrs. | 21 462.7000 MHz | Begins after the Richmond Community Warning System sirens sound at 11:00 a.m. |
| Ready2React | 1st Wed every month 1900 hrs. | 5-6-7 | Channel will be moved from 5 to 6, then 7 if interference; may use FRS |
| BeCERTAINN Berkeley CERT Teams | Tues 1930 hrs. | 22R / Tone 88.5 | https://groups.google.com/forum/#!forum/becertainn |