Standard Operating Procedures

Cupertino Amateur Radio Emergency Service

Part 3 General Information

September 2002

Revision 3.0

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PART 3 – General Information

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Revision

Rev	Date	Comments
0.8	10/24/98	Preliminary, ready for broader CARES review
1.0	01/03/99	1st Release
1.0.1	4/9/00	Deleted Thomas Map references in Table 1 Antenna Drops; other minor corrections
3.0	9/1/02	Changes in CARES power connector standard, Section 11.4 Other minor corrections

10 Disaster Communications

10.1 Basic Principles

Reference: ARES Field Resource Manual, ARRL, December 1995, page 28

The following are basic principles the ARRL recommends that disaster communicators consider.

Keep the QRM (noise and interference) level down. In a disaster, crucial stations may be weak. All other stations should remain silent unless they are called on. If you are not sure you should transmit, don't.

Monitor established disaster frequencies. Many ARES localities and some geographical areas have established frequencies where someone is always (or nearly always) monitoring for possible calls.

Avoid Spreading rumors. During and after a disaster situation, especially on the phone bands, you may hear almost anything. Unfortunately, much misinformation is transmitted. Rumors are started by expansion, deletion, amplification, or modification of words, exaggeration or interpretation. All addressed transmissions should be officially authenticated as to their source. These transmissions should be repeated word for word, if at all, and only when specifically authorized.

Authenticate all messages. Every message that purports to be of an official nature should be written and signed. Whenever possible, amateurs should avoid initiating disaster or emergency traffic themselves. We do the communicating; the official agencies we serve supply the content to the communications.

Strive for efficiency. Whatever happens in an emergency, you will find hysteria and some amateurs who are activated by the thought that they must be sleepless heroes. Instead of operating your own station full time at the expense of your health and efficiency, it is much better to serve a shift at one of the best-located and best-equipped stations, suitable for the work at hand, manned by relief shifts of qualified operators. This reduces interference and secures well-operated stations.

Select the mode and band to suit the need. It is characteristic of all amateurs to believe that their favorite mode and band is superior to others. However, the merits of a particular band or mode in a communications emergency should be evaluated impartially with a view to the appropriate use of bands and modes. That is, of course, no alternative to using what happens to be available, but there are ways to optimize available communications.

Use all communications channels intelligently. While the prime object of emergency communications is to save lives and property (anything else is incidental), Amateur Radio is a secondary communications means; normal channels are primary and should be used if available. Emergency channels other than amateur that are available in the absence of amateur channels should be utilized without fear of favoritism in the interest of getting the message through.

Don't Broadcast. Some stations in an emergency situation have a tendency to emulate "broadcast" techniques. While it is true that the general public may be listening, our transmissions are not and should not be made for that purpose.

10.2 Operating in a Tactical Radio Net

Reference: "Operating in a Tactical Radio Net," Dick Rawson N6CMJ, SVECS Handbook, 2/3/93

10.2.1 Overview

A radio net consists of several stations on one radio channel, follows organized procedures, and directed by a Net Control Station. The organization makes for efficient channel use, and helps ensure that urgent matters get handled before less urgent ones. In short, the net functions as a team to work toward a common goal; effective net operation is teamwork.

A net control station is the net's moderator, chairman, team captain, or traffic cop.

Definition: ***Directed Net***: The NCS may exercise strict control, requiring every other station to get his permission before using the net.

Definition: ***Open Net***: This control may be relaxed to some degree. For example, although the channel is limited to net traffic, net stations may be permitted to call one another with the NCS intervening only to straighten out confusions. Or, the NCS may allow casual calls and conversations on the channel, speaking up only when there is net traffic to pass.

The NCS is responsible to choose a good way to run the net; when you join an on-going net, you should observe how it is run and fit in accordingly. Until you know, assume the net is strictly a directed net.

A Directed net is essential if the channel is busy. The NCS can quickly pick among several stations that have traffic to handle. It is also appropriate if stations on the net are not paying close attention to net activity. For example, if an operator was talking to the public or helping to carry supplies, he may have lost track of net activity by the time he gets some traffic to originate.

10.2.2 Using Tactical Call Signs

You will be called by your tactical call sign, not your FCC amateur radio call sign. You should use the tactical call sign to identify your transmission, and you should call another station by its tactical call sign. Of course, you must identify properly with your FCC call sign.

Definition: ***Tactical Call Sign:*** Tactical call signs allow the net to operate without regard to what operator is at the radio of a particular place. Different individuals may operate the radio at various times. Changes result from a new work shift, relieving an operator for meals or other errands, moving operators among assignments, or other reasons. For all of the above, it is awkward and error-prone to use each operator's FCC Call.

(The NCS should try to keep track of the FCC call of each operator from a resource management perspective.)

Of course, Part 97.84(a) of the FCC rules requires that "Each amateur radio station shall give its call sign at the end of each transmission, and every ten (10) minutes or less during a communication." To comply, simply add your FCC call sign to the end of your last transmission in a series of transmissions. For example:

- NCS: Medical Center, Net Control.
- MC: Medical Center.
- NCS Tell Dr. Smith that his supplies are on their way.
- MC: Medical Center copies. K6XYZ

The NCS should do the same or identify periodically.

Unless you make other arrangements, you are expected to listen continuously to the net, and answer immediately when called. If you will be unable to participate for an interval, tell Net Control before you leave, and check back in with Net Control when you return. Otherwise, the net can waste a lot of time attempting to call you when you're really not there.

10.2.3 Operating in Field Assignments

Always check out of the net before leaving. Never depart without making certain that Net Control knows what you intend to do before you leave. If another operator has taken over your assignment, provide a briefing before departing.

Before turning over or accepting a shift, it is important that a thorough exchange of information take place. Both the on-coming and out-going operators should attempt to review as much information a possible, with the following as the minimum:

- The radio channel or channels in use
- Any other radio, power, or antenna details
- All the tactical call signs and where the stations are located; possibly, also names and FCC call signs
- If a telephone is accessible, its location and phone number
- The officials or others you are serving; how to find and recognize them
- The purpose of the station
- What is going on in general. What changes are expected
- Any pending activity: messages you have sent, replies you expect, and who should get them
- Where is the toilet, food, water, etc

Get to your assignment a head of time, about 10 to 20 minutes before your shift starts so that you get set up and briefed before the start of your shift.

10.2.4 On-Air Communications

Keep the channel available for interruptions. To minimize how much delay an operator may experience to break in with urgent traffic, consider the following:

- Keep transmissions short. Short transmissions allow other stations to interrupt if they have more urgent traffic. Similarly, they let NCS exercise its control more promptly. Also, less time is lost if the transmission was partly or completely unreadable, due to radio problems, simultaneous transmissions (doubles), noise nearby, etc.

- Stop transmitting if you stop talking. Always release the push-to-talk button if you need to pause for some reason such as to think of a street name, remember something other to report, listen to something urgent in the background, etc. While you make a short pause, others should standby and wait for you to resume. They aren't free to take your turn away. Of course, if something urgent enough arises, another station can interrupt while you are not transmitting.

- Avoid unnecessary transmissions. A station with a message to send is responsible to hear the receiving station acknowledge receipt. The receiving station does not need a receipt of the receipt. For instance:
  - NCS: Medical Center, Net Control.
  - MC: Medical Center.
  - NCS Tell Dr. Smith that his supplies are on their way.
  - MC: Medical Center copies. K6XYZ

  There is no need for NCS to assure the Medical Center that NCS copied the "copies"
- Don't call endlessly. If you get no answer to your first two calls, wait a few minutes and let others use the channel. Call again once or twice every few minutes (however, if the matter is urgent, continue calling).

10.2.5 Interrupting the Net

It is proper to interrupt the net, that is, transmit when NCS has not invited you to. That is the purpose for leaving gaps between transmissions.

If you need to interrupt, key very briefly, only enough to ID or state something about the nature of the interruption. For example, "K6XYZ," "emergency traffic," "autopatch," or "info." The station you want to interrupt may not have noticed you in time. If you transmit for 30 seconds, maybe nobody will understand anything on the channel for 30 seconds.

10.2.6 Talking on the net

Use short simple phrases. There are lots of ways to word an idea: pick one of the shorter ways. This helps you keeps the transmission short and helps the listener with his/her understanding of the message.

Establish contact before saying the message longer than 2-3 words. This may mean calling the other station and hear it tell you to proceed or hearing the other station acknowledge to a call from the NCS. Regardless of the method, don't spend airtime saying some long message until you have reason to believe you have the other operator's attention.

Acknowledge transmission promptly; even when it is obvious from the context that you were asked to do something that you cannot do instantly. Until you acknowledge, people don't know if you got the message, and so don't know if a repeat will be needed. Once you acknowledge, the net can assume you will continue with your assignment, and the channel can be used for other traffic.

10.2.7 Questions and Answers

State questions in a positive form. For instance: "should we go to the Community Center?" That question can be safely be answered with a "YES" or "NO", or "affirmative" or "negative" response.

Avoid turning a question into a negative question, such as "Shouldn't we go to the Community Center?" A *yes* or *no* answer to that question is ambiguous and will require a complete sentence to clearly answer it

Answer questions as directly as possible – do not explain. That is, avoid unnecessary transmissions. If asked a question, just answer it. Do not volunteer additional detail or explanation or why something is so.

Always use good judgment. You may believe that the simple answer is misleading, or the question may indicate that the person asking it does not

understand the actual situation. If you think it is necessary, volunteer more information. But be brief; let the questioner ask for more detail if he/she chooses to.

10.2.8 Time Recording

All time references should be given and recorded in 2400 local time. That is, midnight to 12:00 noon is 0000 to 1200. 1:00pm to 11:59pm is 1300 to 2359. NCS operators are recommended to have a 24-hour clock available to ease 24 hour time-keeping.

10.2.9 General procedures

Ask who a message is for, if you don't know. As you copy a message, consider what you are going to do with it. If you cannot tell, ask the station that is sending it (particularly if the message originates there), this may be the most expedient way for you to learn how to handle the message. Or, the sender might notice that the message should not be sent to your station after all, and cancel he message.

Let third parties speak over the radio. This is often better and faster than passing messages back and forth. It's just as legal as passing third party messages. However, don't expect to reserve the channel for several minutes while one of the operators gets someone to come to the microphone. Instead, agree with the other operator about who is needed at each end for the contact, then release the channel for other use until everyone is available.

Don't answer too many stations at once. Primarily a concern for the NCS, if two or more stations call you, and you miss or garble some of the call signs, just answer the stations that you copied ok. When done with them, ask for "any other stations?" This is faster and simpler than trying to call stations with fragments of their call signs, such as "the station ending in …YZ", particularly if the call was W6ABC.

Minimize misunderstandings. Avoid saying "QSL' and "roger" because they can be ambiguous. Be sure you are clear what other party means if you hear one of these terms. Hams use their terms all the time with various meanings. You could hear one used with any of the following four meanings, and not know for certain which meaning was intended:

- Use "affirmative" or "yes" to mean "yes" in response to a question that clearly needs a yes/no answer.
- Use "affirmative" or "yes" "will do" etc., in response to a request that you take action.
- Use "copy," "check," "understand," etc., to mean, "I understand all of your last transmission." (This is what the books say "roger" should mean in radio procedure).
- Use "I copied your message ###," "acknowledge your message ### " etc., to mean "I made a complete and accurate copy of that message and accept responsibility for delivering it." (This is what the books say "QSL" should mean in Morse Code procedure.)

10.3 Message Handling

10.3.1 Preparing a Message

Get the person's name, but keep it off the air. When asked to send a message about some person, immediately try to get a specific name if it seems appropriate. However, avoid saying the name over the radio unless you are told to it is permitted. For example, someone needs first aid, someone wishes an additional box lunch, or someone is lost.

Do not pass victim or patient names over the radio. Generally, only personal names that belong in traffic are the names of agency officials, if they choose to put them into messages. Anyone can monitor amateur radio channels.

There may be exceptions to this policy at certain events, such as matching up lost children, but make sure the NCS approves of any exceptions.

Try to get fully worded and signed messages, not paraphrases. When someone asks you to send a message of any substantial length, agree with that person on the exact wording that constitutes the message. This is contrasted with someone telling you to "tell Captain Smith that… ", so that you will have to paraphrase the meaning. If you reword the message (as this asks you to do), you can introduce errors, omit details, or change the emphasis or urgency.

A practical way to handle a message that you get verbally in the "tell them that…" format is to write it down what you think is the entire intended message, then read it back verbatim to the author for approval.

Substantial messages should be signed with the title (and possibly name) of the author. When sending the message on the radio, you can say, for example, "signed, Quinlan Shelter Manager."

Use your judgment whether this much care is needed with tactical traffic. If the officer you are shadowing says to you, " Tell Dr. Smith the supplies are arriving," you might reasonably not worry about transmitting his exact words.

Address Traffic to a specific station. What do you do if you are asked to get help for a problem? If possible, work with the person who asked, and try to understand who should handle the problem, then send that person the message asking for help.

If you instead tell your problem to the NCS, and NCS isn't the one who can handle it, you will have to tell the problem at least one more time. The person who brought you the request may know better than NCS who should get the message. (However, if you are assigned to report information to NCS this advice does not apply.)

10.3.2 Passing a Message

From the sender's viewpoint,

1. Say the message in short phrases; release the push-to-talk button between phrases.
2. Do not repeat without being asked to do so.
3. Repeat verbatim what you said before; do not paraphrase it.
4. If the receiver's read-back is correct, say so without repeating any of the message.
5. Be sure the receiver says he/she copied the message.

From the Receiver's viewpoint,

1. Ask for any repeats or explanations you need.
2. If the message is technical in nature, when you have copied the whole message, read it back to the sender.
3. When the sender agrees with your read-back, say you received the message.

In general, say your message straight through, in phrases, without repetitions.

Say the message in logical phrases of about four to twelve words. Pause and release the key while you wait for the other operator to write down each phrase (Always release the microphone key if you stop talking).

Speak clearly, as slowly as clarity requires, and use the phonetic alphabet to spell items that cannot be understood reliably by pronouncing them.

The receiver should ask for any necessary repetitions, until he/she has copied the whole message. If he/she asks you to repeat something, repeat it exactly the same as you first said it; do not paraphrase. The receiver is trying to copy your words; if you use different words, you are a moving target (however, if the receiver heard your words but did not understand, then explain something, or ask what you should explain).

The receiver should then read it back to you, while you compare what you hear with the message you just sent.

Once any disagreements are resolved, the other person acknowledges receipt of the message (for instance, "OK, -- got it," or "copied."). The receiver may omit the read-back step, if confident he has the message correct and simply acknowledge receipt.

On completion of this exchange, the sender can mention there is another message, if there is one. For example, "more traffic."

Passing very short simple messages may go a bit differently. You send the entire text, and the receiver may simply say "copied." Or the receiver may say the text back to you, and you say "affirmative." However, don't say "affirmative" then say parts of the message again. Doing this gives the other station mixed signals: are you agreeing with the read-back or not?

11 Equipment Preparedness

11.1 Basic Deployment Equipment Checklist

Reference: ARES Field Resources Manual, ARRL, page 8, December 1995

When responding to an emergency event or a training exercise, there is a minimum set of equipment and personal gear you should bring with you to get the job done. The ARRL recommends these items be kept in a "Ready Kit"

- 2 meter HandiTalkie (HT)
- External antenna (ie: Magmount) and coax
- Ear-phone
- Paper and Pencil
- Emergency Responder Card, FCC License
- Extra Batteries or battery pack
- Appropriate clothing
- Food and water

11.2 Extended (72 hr) Deployment Equipment List

Reference: ARES Field Resources Manual, ARRL, page 9, December 1995

In the event you are responding for an extended deployment, the ARRL suggests the following additional equipment and personal gear should be included:

- Snacks
- Throat lozenges
- Prescriptions
- First aid kit
- Log books
- 3 days change of clothes
- 3 day supply of water and food
- Flashlight
- Candles
- Alarm clock
- Electrical and Duct tape
- Safety glasses
- Additional radios, packet gear
- Headphones
- RD Connectors
- Patch Cords
- Extra coax
- Liquid refreshments
- Aspirin
- Toilet articles
- Message forms
- Shelter (tent, sleeping bag)
- Foul weather gear
- Portable stove, mess kit with cleaning kit
- Batteries
- Water-proof matches
- Toolbox
- Soldering iron and solder
- Volt/Ohm Meter
- Microphones
- Power supplies, chargers
- Antennas with mounts
- SWR bridge (VHF and HF)
- ARRL standardized power connectors
- Map

11.3 Ready Kit Considerations

Reference: ARES Field Resources Manual, ARRL, page 10, December 1995

11.3.1 Power

Your radio 72-hour kit should have several sources of power in it, with extra battery packs and an alkaline battery pack for your HT. For mobile VHF and UHF radios, larger batteries are needed. Gel-cells or deep-cycle marine batteries are a good sources of battery power, and you must keep them charged and ready to go. It is also wise to have alternate means available to charge your batteries during an emergency. You can charge smaller batteries from other larger batteries. You can build a solar charging device. It you're lucky, you may have access to a power generator that can be used in place of the normal electrical lines. Have more battery capacity than you think you might need. Have several methods to connect your radios to different power sources.

11.3.2 Gain Antennas

You can expect to need some kind of gain antenna for your HT, as well as an additional gain antenna that can be used on either your HT or your mobile rig. Someone else might need the extra antenna, or your first antenna might break. For VHF and UHF, you can build a J-pole from a TV twinlead, for an inexpensive and very compact antenna. Have several lengths of coax in your kit, totaling at least 50ft with barrel connectors to connect them together.

11.3.3 Personal

Include staples: water, or a reliable water filtration or purification system; enough food for three days, eating utensils, a drinking cup and, if needed, a means of cooking your food. Shelter is also important. Here, you are only limited by the size of your kit and the thickness of your wallet. Some hams plan to use their RVs as shelter, conditions permitting. Other disaster conditions may make the use of a RV impossible so you should have several different plans for shelter. Light is important psychologically during an emergency. Make sure that you have several light sources available. Various battery-powered lights are available, and propane or gasoline-fueled lanterns are also good possibilities.

11.4 Emergency Power Connections

11.4.1 Anderson PowerPole Connector Standard

Cupertino ARES has adopted the Anderson PowerPole as the power connector of choice. This standard supports our ability to share power sources for our handheld radios and mobile emergency equipment.

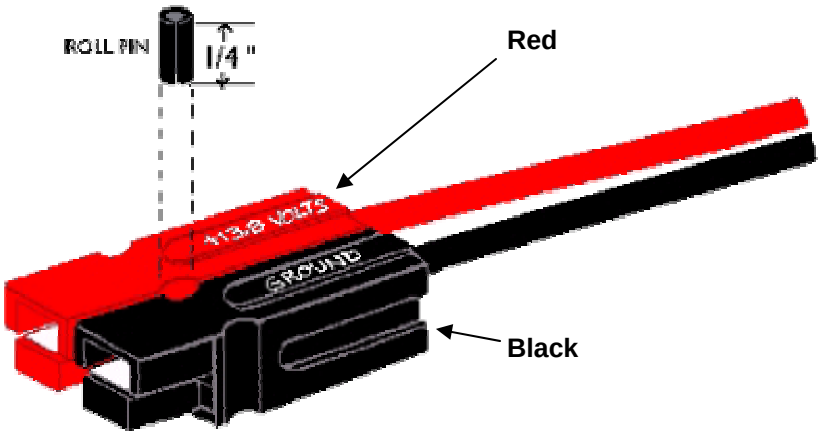

Figure 1: Anderson Power Pole Power Connectors

Cupertino ARES follows the PowerWerx recommended assembly standard where the housings should be mated according to the diagram above, viewing from the contact side (opposite the wire side), tongue down, hood up, RED on the LEFT, BLACK on the RIGHT. The connector kit comes with a 3/32-inch-diameter roll pin, 1/4 inch long, to keep the housings from sliding apart. These connectors are available from www.powerwerx.com.

11.4.2 Backward Compatibility to Molex Connectors

Prior to using the above connector, the ARRL recommended the following connector as a standard connector scheme.

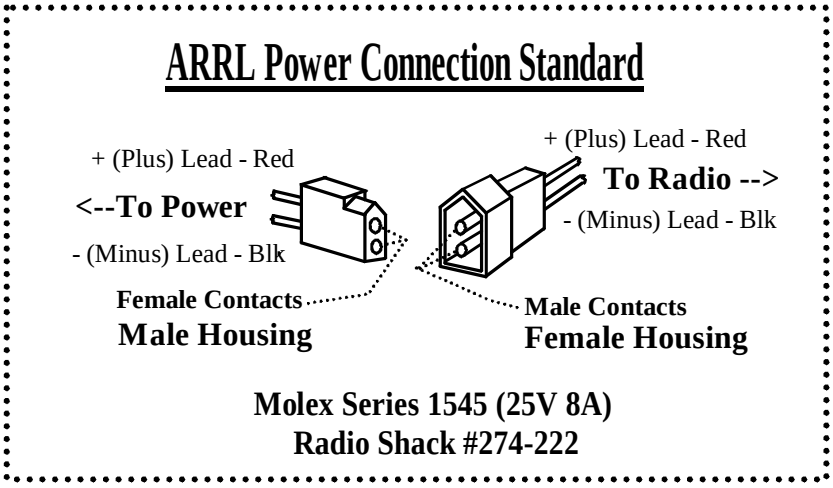

Figure 2: ARRL Power Connection Standard

This connector is still is use throughout Santa Clara County. CARES members are encouraged to develop compatibility cables with this older standard in the event you respond to another city during a mutual aid.

11.4.3 Testing

If you need to connect to someone else's connector, and its polarity isn't convincingly marked, you should first test it with a multi-meter, or some other piece of test equipment.

11.5 EOC Equipment

Refer to SOP PART 5 for a list of the EOC equipment and their operating checklists.

11.6 Antenna Drops

In the event you are deployed, or need access to an antenna, the following are the locations of various antenna drops installed by CARES.

Table 1: Cupertino Amateur Radio Antenna Drops

Site	Location	Antenna Type	Information
City Hall	10300 Tore Ave, Office of Bob Cowan, Director of Planning & Development. This office is located in the basement, northwest corner.	Police	Look for a plate in the wall marked as "xxx". The cable is terminated with a BNC connector.
City Hall	10300 Tore Ave, Office of County Fire, located in the basement, northeast corner, next to Bob Cowin's office.	Fire	Look for a plate in the wall marked as "xxx". The cable is terminated with a BNC connector
Cupertino High School	Finch Avenue, Administration building, outside, east end of the building.	2 meters	There is a box mounted on the wall. The cable is terminated with a BNC connector.
Quinlan Community Center	Stelling Ave and Alves Dr, Volunteer Coordination Center	2 meters	The antenna drop is located in the computer room, about 6 ft above the floor on the west wall to the left as you enter the room. Plan to add a 10 ft cable with BNCs and a plate with label.
Cupertino Medical Center	20289 Stevens Creek Blvd, Office of Dr Mark Congress	2 meters	The antenna drop is in the office, along side the window. It is terminated with a BNC connector.
Monta Vista Fire Station	Stevens Creek Blvd, outside the office entrance.	2 meters	There is a recessed box on the wall outside the public office entrance, right side. A cable is terminated with a BNC connector.
Alt EOC	10555 Mary Ave (details pending)	2 meters	Site contains one radio with antenna for 2 meters, 220, and 440, plus one additional 2-meter connection.

12 Mutual Aid

12.1 Introduction

In the event Cupertino ARES is directed to stand down or is deactivated, CARES members are encouraged to check into the SVECS Resource Net to offer their services there.

The SVECS Resource Net may recruit and dispatch amateurs to any assignment including, but not limited to, the following:

- Amateur radio positions at hospitals
- The amateur position at County Office of Emergency Services (OES)
- A Scene Coordinator who will report to the Command Post at the scene
- On-scene support, reporting to the Staging Area
- The Red Cross disaster office activated by County OES

The Resource net operates on 146.115+ PL=100 (however, PL may not be turned on in the event of an emergency). Check in to the net and state your availability for a County-wide assignment.

12.2 County Emergency Frequencies

This list of acknowledged user frequencies was published by SVECS in September 1998 and is subject to change.

Table 2: Santa Clara County Emergency Frequencies

Municipality	Channel Name	Resource	Frequency	Offset	PL	Notes
County	Command 1	WB6OQS	146.760	-	151.4	A
County	Command 1 Alt 1	K6FB	145.450	-	100.0	
County	Link	WB6OQS	224.260	?	100.0	
County	Command 2	K1YJ	440.100	+	100.0	B
County	Command 2 Alt 1	WB6ZVW	442.500	+	100.0	
County	Command 2 Alt 2	WB6RNH	444.300	+	162.2	C
County	Resource	WB6ADZ	146.115	+	100.0	D
County	Resource Alt 1	W6ASH	145.270	-	100.0	E
County	Packet 220	Simplex	223.660			
County	Packet 2M	Simplex	144.910			
County	Packet 440	Simplex	441.500			
Red Cross SJ	Command	WB6OQS	146.760	-	151.4	A
Red Cross SJ	link	WB6OQS	224.260	-		
Red Cross SJ	Command Alt	WB6OQS	444.600	+	141.3	
Red Cross SJ	Talk Around	WB6RNH	444.300	+	162.2	C
Hospital Net	Command	N6NFI	145.230	-	100.0	F
Cupertino	Tactical-1	Simplex	147.570			N
Cupertino	Tactical-2	Simplex	146.460			
Cupertino	ATV EOC Feed	Simplex	427.250			
Gilroy	Tactical	Simplex	144.450			
Los Altos	Command	W6ASH	145.270	-	100.0	E
Los Altos	Command Alt	W6ASH	440.800	+	100.0	

Municipality	Channel Name	Resource	Frequency	Offset	PL	Notes
Los Altos	Tactical	Simplex	145.570			
Los Altos	Tactical Alt	KH6N	440.875	+	100.0	
Los Gatos	Command	W6PIY	147.390	+	151.4	
Los Gatos	Tactical	Simplex	147.480			
Milpitas	Command	KA6S	224.720	-	100.0	
Milpitas	Tactical	Simplex	144.135			G
Morgan Hill	Tactical	Simplex	144.345			
Mountain View	Command	W6ASH	145.270	-	100.0	E
Mountain View	Command Alt	W6ASH	440.800	+	100.0	
Mountain View	Tactical	Simplex	145.870			H
Mtn View/BRAG	Command	N6SGI	1284.250	-	141.3	
Mtn View/BRAG	Tactical	Simplex	146.415			
NASA-Ames	Tactical	Simplex	145.585			
NASA-Ames	Tactical Alt 1	Simplex	145.710			
NASA-Ames	Tactical Alt 2	Simplex	147.585			J
NASA-Ames	Event 1	Simplex	146.185			
NASA-Ames	Event 2	Simplex	144.985			
Palo Alto	Command	W6ASH	145.270	-	100.0	E
Palo Alto	Command Alt	N6NFI	145.230	-	100.0	F
Palo Alto	Tactical	Simplex	147.540			
Palo Alto	Tactical	Simplex	147.480			K
Palo Alto	Tactical	Simplex	147.555			L
San Jose	Command	W6UU	146.385	+	114.8	
San Jose	Tactical-1	Simplex	146.475		100.0	
San Jose	Tactical-2	Simplex	146.430		100.0	
Santa Clara	Tactical	Simplex	147.510			
Santa Clara	Tactical Alt 1	Simplex	147.470			
Santa Clara	Tactical Alt 2	Simplex	145.555			
Santa Clara	ATV Broadcast	ATV	434.000			
Saratoga	Command	K6SA	146.655	-	114.8	
Saratoga	Tactical Alt	Simplex	146.505			
Saratoga	Tactical HF	USB	28.400			
South County	Command	WB6ZVW	442.500	+	100.0	
South County	Resource	K6THR	147.825	-		
South County	Tactical	Simplex	144.345			
Stanford U	Primary	N6BDE	440.200	+	123.0	
Stanford U	Tactical	Simplex	144.325			
Stanford U	Tactical	W6YX	1282.500	-	88.5	O
Stanford U	Tactical	WA6ITV	1292.550	-	88.5	P
Stanford U	Packet tcp/ip 1200	W6YX-9	145.750			
Stanford U	Packet tcp/ip 9600	W6YX-10	433.430			
Sunnyvale	Tactical	???	145.170	-	94.8	
Sunnyvale	Resource Coord	Simplex	147.405			
Sunnyvale	Alternate	Simplex	147.495			
Sunnyvale/TRW	Tactical	Simplex	147.585			J

Notes

A. County designates Command 1 for Intercity/Interagency tactical traffic. Red Cross uses the frequency as Command. County and Red Cross have an agreement to share OQS with Net Control and final authority on usage resting with County.

B. County designates Command 2 as an intercom for County Staff and EC's.

C. County designates RNH as an alternate repeater for Command 2. Red Cross uses RNH as a talk around/intercom among Communications staff.

D. Resource is used as a holding repeater for radio volunteers who have not been given a specific assignment somewhere in the County. This is also the repeater volunteers need to check in on until given an assignment.

E. Mountain View uses W6ASH 2-meters as a Command repeater if it is not needed as a resource alternate. Palo Alto also uses the repeater.

F. Palo Alto uses the W6APZ repeater unless the repeater is needed by the hospital net.

G. The Milpitas simplex frequency is in the EME & Weak SSB area of the band. Milpitas is looking for an alternative. Also, Milpitas links its Command and Tactical channels during weekly check-in.

H. The Mountain View tactical frequency is bled over by 9600 baud packet. Mountain View is looking for an alternative.

I. The BRAG area is an industrial area of Mountain View east of US101 and north of Moffett Federal Airfield.

J. NASA-Ames alternate 2 is shared with Sunnyvale TRW.

K. Used in Stanford Industrial Park.

L. Used by some of the other corporations.

M. South County - resources shared by Morgan Hill, Gilroy, and the unincorporated areas of southern Santa Clara County.

N. Cupertino shares this frequency with San Carlos and Foster City.

13 Personal Preparedness

The next time disaster strikes, you may not have much time to act. You are encouraged to prepare now for a sudden emergency.

This checklist will help you get started. Discuss these ideas with your family, then prepare an emergency plan. Post the plan where everyone can see it – on the refrigerator or bulletin board.

This information is from the "Emergency Preparedness Checklist" published by the American Red Cross.

13.1 Create an Emergency Plan

- Meet with household members. Discuss with children the dangers of fire, severe weather, earthquakes, and other emergencies.
- Discuss how to respond to each disaster that could occur.

13.2 Emergency Checklist

- Discuss what to do about power outages and personal injuries.
- Draw a floor plan of your home. Mark two escape routes from each room.
- Learn how to turn off the water, gas, and electricity at main switches.
- Post emergency telephone numbers near phones.
- Teach children how and when to local 911, police and fire.
- Instruct household members to turn on the radio for emergency information
- Pick one out-of-state and one local friend or relative for family members to call if separated by disaster (it is often easier to call out-of-state than within affected areas).
- Teach children how to make long distance calls.
- Pick two meeting places:
    1. a place near your home in case of fire
    2. a place outside the neighborhood in case you cannot return after a disaster
- Take a basic first aid and CPR class.
- Keep family records in a water and fireproof container.
- Check if you have adequate insurance coverage.

13.3 Prepare a Disaster Supplies Kit

There are six basics you should stock in your home: water, food, first aid supplies, clothing and bedding, tools and emergency supplies, and special items. Assemble supplies you might need in an evacuation. Store them in an easy-to-carry container such as a backpack or duffle bag. Include such items as:

13.3.1 Water

Store water in plastic containers such as soft drink bottles. Avoid using containers that will decompose or break, such as milk cartons or glass bottles. A normally active person needs to drink at least two quarts of water each day. Hot environments and intense physical activity can double that amount. Children, nursing mothers, and ill people need more.

- Store one gallon per person per day (two quarts for drinking, two quarts for food preparation and sanitation)
- Keep at least a three-day supply of water for each person in your household.

13.3.2 Food

Store at least a three-day supply of non-perishable food. Select food that require no refrigeration, preparation, or cooking and little or no water. If you must heat food, pack a can of sterno. Select food items that are compact and lightweight. Include a selection of the following foods in your disaster supplies kit:

- Ready-to-eat canned meats, fruits, and vegetables
- Canned juices, milk, soup (if powdered, store extra water)
- Staples – sugar, salt, pepper
- High energy foods – peanut butter, jelly, crackers, granola bars, trail mix
- Vitamins
- Foods for infants, elderly persons, or person on special diets
- Comfort/stress foods – cookies, hard candy, sweetened cereals, lollipops, instant coffee, tea bags

13.3.3 First Aid Kit

It is recommended you assemble or purchase a first aid kit for your home and your car. A first aid kit should include:

- Sterile adhesive bandages in assorted sizes
- 2-inch sterile gauze pads (4-6)
- 4-inch sterile gauze pads (4-6)
- Hypoallergenic adhesive tape
- Triangular bandages (3)
- 2-inch sterile roller bandages (3 rolls)
- 3-inch sterile roller bandages (3 rolls)
- Scissors
- Tweezers
- Needle
- Moistened towelettes
- Antiseptic
- Thermometer
- Tongue blades (2)
- Tube of petroleum jelly or other lubricant
- Assorted sizes of safety pins
- Cleansing agent/soap
- Latex Gloves (2 pair)
- Sunscreen

Non-Prescription drugs

- Aspirin or non-aspirin pain reliever
- Anti-diarrhea medication
- Antacid (for stomach upset)
- Syrup of Ipecac (used to induce vomiting if advised by the Poison Control Center)
- Laxative
- Activated charcoal (used if advised by the Poison Control Center)

13.3.4 Tools and Supplies

- Mess kits, or paper cups, plates, and plastic utensils
- Emergency prep manual
- Battery operated radio, extra batteries
- Flashlight, extra batteries.
- Credit cards, cash.
- Non-electric can opener, utility knife
- Fire extinguisher (5 lb, A-B-C- type)
- Tube Tent
- Pliers
- Tape
- Compass
- Matches in a waterproof container
- Aluminum foil
- Plastic storage containers
- Sun glasses
- Signal flare
- Paper, pencil
- Needles, thread
- Medicine dropper
- Shut-off wrench (gas and water)
- Whistle
- Plastic sheeting
- Map of the area (for locating shelters)

Sanitation

- Toilet paper, towelettes
- Soap, liquid detergent
- Feminine supplies
- Personal hygiene items
- Plastic garbage bags, ties (for personal sanitation uses)
- Plastic bucket with tight lid
- Disinfectant
- Household chlorine bleach

13.3.5 Clothing and Bedding

Include at least one complete change of clothing and footwear per person.

- Sturdy shoes or work boots
- Raingear
- Blankets or sleeping bags.
- Hat and gloves
- Thermal underwear

13.3.6 Special Items

For Baby

- Formula
- Diapers
- Bottles
- Powdered milk
- Medication

For Adults

- Heart and high blood pressure medication
- Insulin
- Prescript'n drugs
- Denture needs
- Contact lenses and supplies
- Extra pair of glasses.

Entertainment

- Games and books

Important Family Documents

Keep these records in a waterproof, portable container.

- Will, insurance policies, contracts, deeds, stocks and bonds
- Passports, social security cards, immunization records
- Bank account numbers
- Credit card account numbers and companies
- Inventory of valuable household goods
- Important phone numbers
- Family records (birth, marriage, death certificates)

13.4 If you need to evacuate

Listen to a battery powered radio for the location of emergency shelters. Follow instructions of local officials.

- Wear protective clothing and sturdy shoes.
- Take your Disaster Supplies Kit.
- Lock your house.
- Use travel routes specified by local officials.

If you are sure you have time…

- Shut off water, gas, and electricity if instructed to do so.
- Let others know when you left and where you are going.
- Make arrangement for pets. Animals may not be allowed in public shelters.

13.5 Prepare an Emergency Car Kit

- Battery powered radio and extra batteries
- Flashlight and extra batteries
- Blanket
- Booster cables
- Fire extinguisher (5 lb, A-B-C- type)
- Bottled water and non-perishable high energy foods such as granola bars, raisins, and peanut butter
- Maps
- Shovel
- Tire repair kit and pump
- Flares

13.6 Fire Safety

- Plan two escape routes out of each room
- Teach family members never to open doors that are hot. In a fire, feel the bottom of the door with the palm of your hand. If it is hot, do not open the door. Find another way out.
- Install smoke detectors., Clean and test smoke detectors once a month. Change batteries once a year.
- Keep a whistle in each bedroom to awaken household members in case of fire.
- Check electrical outlets. Do not overload circuits.
- Purchase a fire extinguisher (5 lb, A-B-C- type)
- Have a collapsible ladder on each upper floor of your house.
- Consider installing home sprinklers.

14 Glossary

Agency Liaison Coordinator (ALC): Persons appointed by the EC who shall operate under the EC during emergency periods to coordinate an agency's actions for providing effective relief and assistance in accordance with this plan.

ARES: The Amateur Radio Emergency Services (ARES) is a field service of the American Radio Relay League (ARRL). Its members are licensed amateurs who have voluntarily registered their qualifications and equipment for communications duty in the public service when disaster strikes. Every licensed amateur, regardless of membership in ARRL or any other local or national organization is eligible for membership in the ARES. The only qualification, other than possession of an Amateur Radio license, is a sincere desire to serve,

Because ARES is an amateur service, only amateurs are eligible for membership. The possession of emergency-powered equipment is desirable, but is not a requirement for membership.

ARRL: American Radio Relay League. The 170,000+ members of the American Radio Relay League (ARRL) are among the most active and enthusiastic amateurs in the country. Headquartered in Newington, CT, ARRL speaks for its members in Washington and internationally as well as providing direct member benefits.

Directed Net: The Net Control Station may exercise strict control, requiring every other station to get his permission before using the net.

Disaster: A dangerous event that causes significant human and economic loss and demands a crisis response beyond the scope of any single agency or service, such as the fire or police department. Disasters are distinguished from emergencies by the greater level of response required. Disaster requires resources beyond those available locally.

Emergency: While an emergency may have been devastating, it is a dangerous event that does not result in a request for State or Federal Assistance.

Emergency Operations Center (EOC): A centralized facility to be utilized by the government for direction, control, and coordination.

Emergency Period: The period of time immediately before, and/or immediately following the impact of a catastrophe when severe threats exist to human life, animals, or other private and public property and/or the environment.

ICS: The Incident Command System is a management tool that that provides a coordinated system of command, communications, organization, and accountability in managing emergency events. Due to the widespread use of ICS, Amateur Radio operators should be familiar with the system, as well as how they interface with agencies employing ICS.

Integral to ICS is the concept of Unified command. There is only one boss, the Incident Commander, who is responsible for the overall operation. For any incident, there are a number of functions that must be performed ranging from planning and logistics to handling the press. The functional requirements of planning, logistics, operations, and finance are always present despite the size of the incident. They may be handled by a single individual for a small incident, or a Command Staff for a large incident. Another characteristic of ICS is “span of control” In simple terms, any manager should only directly manage a small number of people. ICS uses the number of five for organizational purposes. The number five isn’t hard and fast, but provides a useful organizational guideline.

Amateur radio volunteers are expected to be communicators, and within the ICS, this would place us in the Communications Unit of the Logistics Section. The communications unit provides all communications services for the operation.

Local Mass Care Center: A place selected locally by the private volunteer groups to provide care for individuals dislocated during the emergency period. Services provided are lodging, feeding, registration, first aid, and other social services.

Major Disaster: Any hurricane, tornado, storm flood, high water, wind-driven water, earthquake, volcanic eruption, landslide, snow storm, explosion, or other catastrophe in any part of the United States which, in the determination of the United States, causes damage of sufficient severity and magnitude as to warrant major disaster assistance under Public Law 93-288 above and beyond emergency services by the Federal Government, to supplement the efforts and available resources of the state, local governments, and disaster relief organizations in alleviation of the damage, loss, hardship, or suffering caused thereby.

Open Net: NCS relaxes the control exercised during a Directed Net. For example, although the channel is limited to net traffic, net stations may be permitted to call one another with the NCS intervening only to straighten out confusions. Or, the NCS may allow casual calls and conversations on the channel, speaking up only when there is net traffic to pass.

RACES: The Radio Amateur Civil Emergency Services (RACES) is an emergency service function defined under Part 97 of the Federal Communication Commission (FCC) Rules. Both the Federal Emergency Management Agency (FEMA) and the State of California Governor's Office of Emergency Services (OES) sponsor RACES as an official volunteer organization.

RACES is a special phase of amateur radio operation that provides radio communication for civil preparedness purposes only, during period of local, regional, or national civil emergencies. These emergencies are not limited to war-related activities, but can include natural disasters such as fires, floods, and earthquakes.

Recovery Period: The period of time subsequent to an emergency when economic recovery from disaster damage takes place, including the use of any available local, state, federal government, and private resources.

SEMS: Standardized Emergency Management System. A structure of emergency procedures used almost universally by cities and counties in California to cope with disasters that can affect many communities simultaneously.

Tactical Call Sign: Tactical call signs allow the net to operate without regard to what operator is at the radio of a particular place. Different individuals may operate the radio at various times. Changes result from a new work shift, relieving an operator for meals or other errands, moving operators among assignments, or other reasons. For all of the above, it is awkward and error-prone to use each operator's FCC Call.

Volunteer Service Organization: Any organization which is non-government, non-profit whose primary mission is to provide humanitarian support in times of need using public donated funds and volunteer personal resources with or without a formal declaration of an emergency (ie: American Red Cross, Salvation Army, etc.).

Watch Period: A period of time when meteorological conditions indicate a probability of severe weather phenomena.

Warning Period: A period of time when severe weather phenomena are actual occurring