

# **TULARE COUNTY AMATEUR RADIO EMERGENCY SERVICE™ EMERGENCY COMMUNICATIONS PLAN**



This document is written in coordination and cooperation with the ARRL Amateur Radio Emergency Service™, Radio Amateur Civil Emergency Services and the State of California Office of Emergency Services.

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Jim Purvis  
WA7HRG

*/s/ Jim Purvis May 9, 2009*

## PURPOSE

The purpose of this document is to provide authority for the participation of Amateur Radio operations in providing essential communications during periods of local disasters and communications emergencies in the Tulare County Operational Area.

This document provides direction and guidance to local Amateur Radio operators and emergency officials in the effective and efficient use of Amateur Radio during times when additional emergency communications services are required.

This document acts as a guideline for the roles and responsibilities of the Tulare County Amateur Radio Operators while participating in an emergency situation.

## ELIGIBILITY

**The Amateur Radio Emergency Service<sub>m</sub> (ARES<sub>m</sub>)** consists of 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<sub>m</sub>. Currently, the only qualification, other than possession of an Amateur Radio license, is a sincere desire to serve. Because ARES<sub>m</sub> 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.

### **Radio Amateur Civil Emergency Service (RACES)**

As defined in the rules, RACES is a radio communication service, conducted by volunteer licensed amateurs, designed to provide emergency communications to local or state civil-preparedness agencies.

*It is important to note* that RACES operation is authorized by emergency management officials only, and this operation is strictly limited to official civil-preparedness activity in the event of an emergency-communications situation.

## AUTHORITY

Amateur Radio participation during times of disaster to provide emergency communications is authorized by the FCC Rules and Regulations, Part 97.

### **§97.403 Safety of life and protection of property.**

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

This document is produced by and for the **Tulare County Amateur Radio Emergency Services and all Amateur radio operators in the Tulare Operating area** in cooperation with the San Joaquin Valley Section ARES<sub>m</sub> and the Tulare County RACES organizations. Written by Jim Purvis – WA7HRG [edited by Hal Clover – KC5LUB]



# **TULARE COUNTY ARES<sup>tm</sup> EMERGENCY PLAN**

## **EXECUTIVE SUMMARY**

In the early hours of an emergency turning into a major disaster, it takes precious time to overcome the obstacles to place fully activated mutual aid resources into operation. Communication is one of those vital resources.

The greatest concentration of relief efforts is generally found in the incorporated cities served by agencies with paid professionals--assuming their equipment, facilities and personnel remain operable. While urban areas experience more concentrated damage, suburbs and isolated areas of a county suffer do to remoteness from fire departments, public works, law enforcement and the services of all other agencies. All organizations scramble to respond to an unprecedented demand for service within their authorized jurisdiction.

The dispersed location of Amateurs in this area is an advantage. ARES<sup>tm</sup> can and will become the communications link for the County officials and the rural communities of the County.

At the first indication that a disaster is imminent, such as an earthquake, major storm or other indicator, all radio amateurs should first see to his or her own safety and the safety of their family. Then, at the first opportunity, volunteer their services and resources to the local ARES<sup>tm</sup> organization.

The Tulare County Operational Area is under the direction of the San Joaquin Valley ARES<sup>tm</sup> Section Emergency Coordinator (SEC) through the Tulare County ARES<sup>tm</sup> Emergency Coordinator (EC) and his/her Assistant Emergency Coordinators (AEC). Served agencies will contact either the SEC or the EC/AEC to request ARES<sup>tm</sup> communications support.

Radio operators will be operating under the direction of the EC/AEC or his/her designated official. The ARES<sup>tm</sup> field organization is designed to provide support as fully as possible, upon request, to any and all emergency response and disaster relief organizations. However, ARES<sup>tm</sup> retains its own identity and organizational structure, personnel and physical infrastructure while providing communications support for its served agencies.

### **Activation**

Emergency net activation and initial operation – See Appendix A

### **Operation**

See Radio Nets and Net Operations – Page 9

### **Expectations**

See The First 72 Hours – Appendix D



## **Radio Amateur Civil Emergency Service (RACES)**

The federal government created RACES after World War II. The RACES rules addressed the need for Amateur Radio operators to function as an integral part of a state, county, or local Civil Defense (CD) agency in time of national emergency or war. The RACES authorization provides the means to continue to serve the public even if the President or the FCC suspends regular Amateur operations. In this situation, the RACES rules provide for use of regular Amateur frequencies, but place strict limits on the types of communications made, and with whom.

Over the years, both "Civil Defense" (known as "Emergency Management" in most states) and the way it utilizes Amateur radio operators have changed dramatically. There are fewer RACES only operators today. Increasingly, RACES registered operators also belong to ARES<sup>tm</sup>, and can "switch hats" when the need arises. Emergency management officials like this arrangement since it provides more flexibility, and gives them more direct control over their ham radio volunteers.

RACES has its own set of rules and regulations and during a RACES activation those rules will be enacted and ARES<sup>tm</sup> operation will cease. The Tulare County RACES Communications Plan has been in affect for some time and can be found on line at;

<http://www.kc6yru.net/kc6yru/wc6aai/freq.html>

The Tulare Amateur Radio Club and the Areas ARES<sup>tm</sup> and RACES members will fully support both ARES<sup>tm</sup> and RACES operations. It encourages its members to become members of both organizations so that seamless communications will continue should an event started under ARES<sup>tm</sup> be superseded by RACES activation.

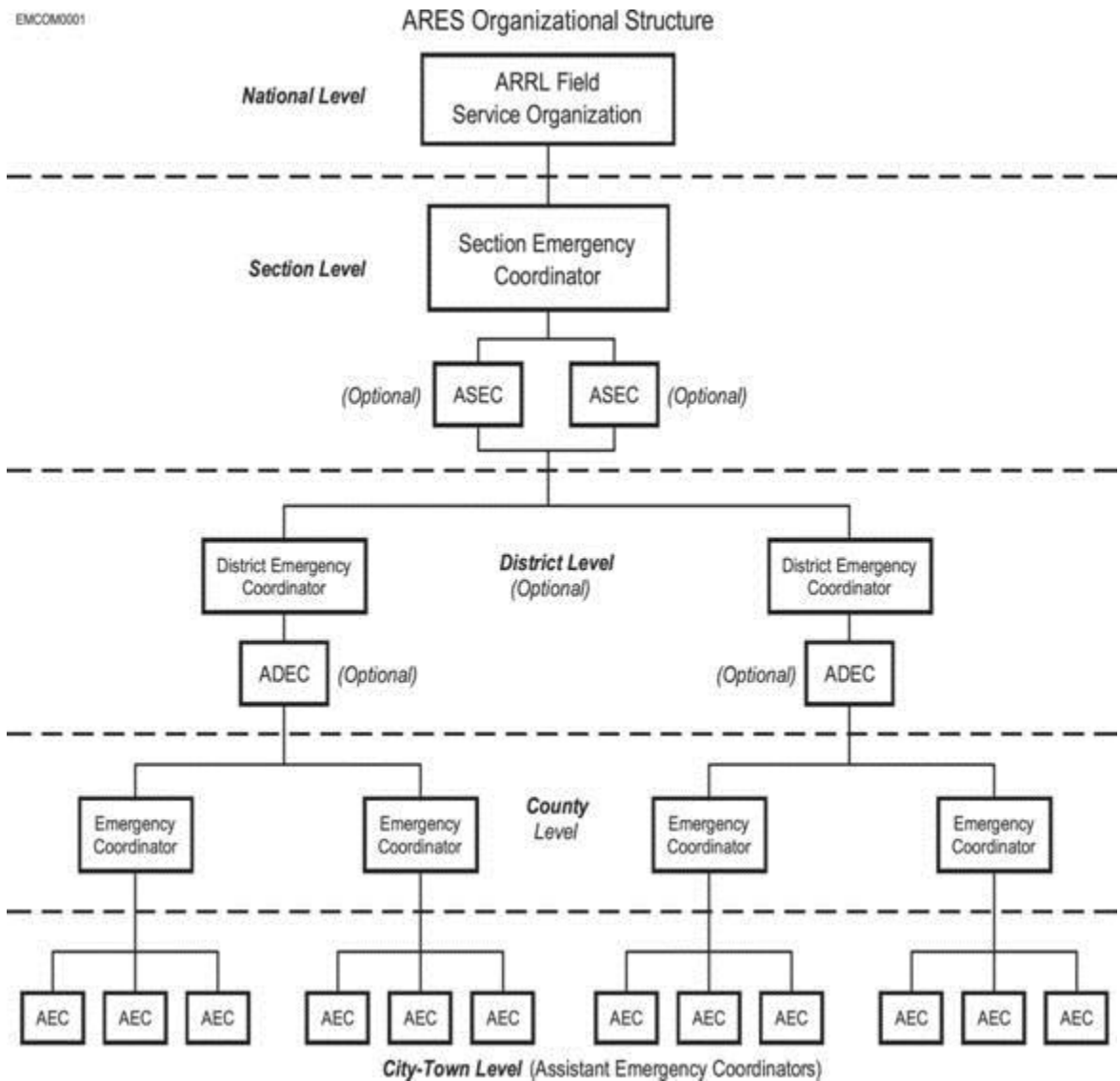
The general guidelines and operating practices in this document apply to both ARES<sup>tm</sup> and RACES operators. Training, preparedness, personal safety, survival and health considerations, traffic handling and net operations all have common links to both RACES and ARES<sup>tm</sup>.

**However**, the specific methods, served agencies, frequencies, and organizational structure differ greatly.

The remainder of this document will be directed towards ARES<sup>tm</sup> operation. For RACES specific operations and plans see the web site above or contact the local County RACES Radio Officer.



## NATIONAL ARES™ ORGINAZATIONAL STRUCTURE



This document will address the practices of the Amateur Radio Operator as they apply to the County and City-Town levels.

The Tulare County Operational Area is under the direction of the San Joaquin Valley Section Emergency Coordinator (SEC) through the Tulare County Emergency Coordinator (EC) and his/her Assistant Emergency Coordinators (AEC).

Radio operators at these levels will be operating under the direction of the EC/AEC or his/her designated official. Emergencies vary and so will the radio operator assignments. Assignments will be made as the requirements arise.

## **OPERATIONS**

***EmComm Plan.*** *Know and understand what to expect, what is expected of you and how to conduct yourself during an emergency.*

The ARRL and the American Red Cross define a disaster as;

*“A disaster is an occurrence such as a hurricane, tornado, storm, flood, high water, wind-driven water, tidal wave, earthquake, volcanic eruption, drought, blizzard, pestilence, famine, fire, explosion, building collapse, transportation accident, or other situation that causes human suffering or creates human needs that the victims cannot alleviate without assistance.”*

### **The ARES<sub>tm</sub> Full-Service Organization**

The ARES<sub>tm</sub> field organization is designed to support as fully as possible, upon request, any and all emergency response and disaster relief organizations. However, ARES<sub>tm</sub> retains its own identity and organizational structure, personnel and physical infrastructure while providing communications support.

When dealing with served agencies we must remind the agencies that ARES<sub>tm</sub> is a self-contained emergency organization, and retains its own identity. When an ARES<sub>tm</sub> operator is assigned to a duty post anywhere, he/she remains an ARES<sub>tm</sub> operator with a state tracking number for the full length of the ARES<sub>tm</sub> assignment. That operator is responsible directly to the EC (and designated assistants) and to no one outside the ARES<sub>tm</sub> organization.

The ARES<sub>tm</sub> infrastructure includes privately-owned radios, antennas, ARES<sub>tm</sub> -dedicated and cooperating repeaters, and accessory equipment. Even more important than the equipment, the organizational structure includes numerous nets, training exercises, and cooperative planning with the agencies to learn their needs.

When an agency asks the county or state EOC for ARES<sub>tm</sub> communications assistance, it gets the full benefit of the ARES<sub>tm</sub> group's entire organization including its nets, repeaters, mobiles and emergency power sources. When dealing with served agencies we must remember – and remind the agencies – that ARES<sub>tm</sub> is a self-contained emergency organization, and retains its own identity.

Communication assignments might include staffing a shelter to handle calls for information, supplies, and personnel, "shadowing" an official to be their communication link, gathering weather information, or collecting and transmitting damage reports. Some nets might pass health and welfare inquiries to refugee centers, or pass messages from refugees to family members outside the disaster area. Other nets might handle logistical needs for the served agency, such as those regarding supplies, equipment, and personnel.



In general, you should be prepared to perform jobs for a served agency that include the need to communicate. Here are a few of the many possible job descriptions:

- Radio operator, using Amateur or served agency radio systems.
- Dispatcher, organizing the flow of personnel, vehicles, and supplies.
- Resource coordinator, organizing the assignments of disaster relief volunteers.
- Field observer, watching and reporting weather or other conditions.
- Damage assessor, evaluating and reporting damage conditions.
- Van driver, moving people or supplies from location to location.
- Searcher, also providing communication for a search and rescue team.

To perform these jobs, you may need to complete task-specific training courses, and take part in exercises and drills in addition to those required for emergency communication beyond traditional Amateur Radio. In the ever-changing world of emergency response, this flexibility will become increasingly important if we are to continue our contribution to public safety as Amateur Radio operators.

Nets will be set up, re-arranged, and dismantled as needs change. Volunteers will need to remain flexible in order to meet the changing needs of the served agency. Over time, the need for emergency communication networks will diminish and some nets will be closed or reduced in size. Operators will be released to go home one by one, in small groups, or all at once as the needs dictate.

## **TRAINING**

### **Tulare County ARES<sub>tm</sub> Members**

ARES<sub>tm</sub> member training is a multi-level structure based on an individual's desire to participate and their placement within the organization.

Training is an essential element of emergency preparedness. All ARES<sub>tm</sub> members are required, to the extent possible, to maintain the basic level training.

**Basic level** training consists of;

- Weekly nets held every Monday night at 7:30 PM on the 145.310 repeater.
- Public Service Events where ARES<sub>tm</sub> provides support communications for a served agency.
- Occasional subject matter presentations offered by the local radio clubs and other EmComm organizations.

**Level One** training consists of;

- Basic Level training
- Successful completion of the ARRL Emergency Communications course level one.
- Participation in ARES<sub>tm</sub> events and call outs.

**Level Two** training consists of;

- Basic and Level One training
- Successful completion of the ARRL Advanced Emergency Communications course.
- Successful completion of the on-line FEMA ICS training courses IS100a, IS200a, IS300a and IS700.

## **RADIO NETS AND NET OPERATION**

*Formal net operations. Most hams are used to casual conversational exchanges over the radio. Emergency operations require a different type of communications.*

### **A. Emergency nets**

The purpose of any net is to provide a means for orderly communication within a group of stations. An "emergency" net is a group of stations who provide communication to one or more served agencies, or to the general public, in a communications emergency. An emergency net may be formal or informal, depending on the number of participants and volume of messages.

Emergency nets may have different purposes, and a given emergency may require one or more of each type of net. During a small operation, all functions may be combined into one net.

An Emergency Net provides a structure and organization to allow an orderly flow of messages. It is a Directed Net and under full control of the NCS.

### **B. Open nets**

In an open net, the NCS is optional. Stations may call each other directly. When a NCS is used at all, he usually exerts minimal control over the net. The NCS may step in when the message volume increases for short periods, or to solve problems and keep the net operating smoothly. Open nets are most often used when there are only a few stations and little traffic.

Depending on the circumstances an open net could be a tactical or resource net, usually on a local level, and used for informal communications between EmComm units.

Any kind of traffic can be passed on an open net so it is not limited to informal. The distinction between Open and Directed nets is the level of control the NCS is providing over the net.

### **C. Tactical nets**

Used for real time coordination and quick or informal traffic. May or may not have an NCS. More than one Tac Net may be needed for each served agency, Red Cross shelters, State and Local LE, EMS, etc. Breaking communications into smaller mission specific nets increases the speed and accuracy of communications.

### **D. Resource nets**

Resource/logistics – A directed net. Takes EmComm check-ins and directs them to other appropriate nets such as Tactical Nets. Handles requests for supplies and logistics and over all coordination activities. **Usually the first net in operation.**

## E. Traffic nets

A traffic net handles formal written messages in a specified (i.e. ARRL) format. The nets operated by the National Traffic System (NTS) are an excellent example of traffic nets. ARES<sup>tm</sup> or RACES traffic nets may be directed or open depending on their size.

### TULARE COUNTY ARES<sup>tm</sup> NETS

In a major disaster several radio nets will need to be activated to increase the speed and accuracy of communications. Outlined here are the nets that will be maintained in this Operational Area for use during an emergency.

#### NETS

##### Functions

- Resource/logistics            General information and check in.
- Medical.                        Hospitals and clinics. Emergency medical or triage locations (remote).
- Welfare                         Red Cross, Salvation Army, Faith Based organizations, etc.
- Law Enforcement            State and Local
- Fire and rescue (EMS)      State and Local
- Federal, State and Local    State OES and FEMA
- Traffic                         NTS and other Gateway stations to adjacent ARES<sup>tm</sup> areas.

Nets supporting these functions will have two frequencies assigned. One or the other, or in some cases both, may be activated. The first net to activate will be the Logistics Net. This could be the only net depending on the size of the event. Additional nets will be activated as the situation escalates.

FM Rpt One	Local check in and Logistics – All stations monitor this net.
FM Rpt Two	Med Net
FM Rpt Three	Welfare Net
FM Rpt Four	EMS Net
FM Simplex One	Med Net
FM Simple Two	Welfare Net
FM Simplex Three	EMS Net
FM Simplex Four	General Communications
Digipeater One	All activities
Digipeater Two	Portable. Deployed and utilized as needed
FM Repeater Linking system	Portable and deployable as needed. (Increase range into distant areas or repeaters outside the disaster area.)
Amateur TV (ATV) Repeater and Remote Broadcast stations	
National Traffic System (NTS) and WinLink hubs	
Ad-hoc and assigned HF nets	

## ASSIGNED NET RADIO FREQUENCIES

	Owner/Operator	Frequency	Offset	CTCSS
FM RPTR One	TCARC	146.880	-	103.5
FM RPTR Two	PARA	146.970	-	100.0
FM RPRT Three	PARA	146.655	-	100.0
FM RPTR Four	PARA	145.310	-	100.0
FM Simplex One	ARES <sup>tm</sup> /RACES	147.560		
FM Simplex Two	ARES <sup>tm</sup> /RACES	147.540		
FM Simplex Three	ARES <sup>tm</sup> /RACES	145.770		
FM Simplex Four	ARES <sup>tm</sup> /RACES	146.430		
Digipeater One	TCARC	145.030		
Digipeater Two	TCARC	145.910		
Digipeater State OES	WA6NWE-1	145.090		
APRS Tracking	NATIONAL	144.390		
Repeater Linking	TCARC	As required		As required
ATV RPTR	N6BYH	425.250		
Gateway Repeaters	Fresno ARES <sup>tm</sup>	147.150	+	141.3
	Kern ARES <sup>tm</sup>	145.150	-	100.0
	Kings ARES <sup>tm</sup>	147.080	-	103.5
	N6BYH	146.730	-	141.3
WinLink Hub	KI6HFZ-10	145.030		
Tulare Co HF Nets	RACES	3.997		
	RACES	7.345		
	ARES <sup>tm</sup>	3.825		
	ARES <sup>tm</sup>	7.175		
	ARES <sup>tm</sup>	14.290		
Additional Resources	ARES <sup>tm</sup>	21.310		
	TCARC	440.400	+	103.5
	TCARC	440.450	+	141.3
	N6VYT	223.880	-	
	N6VYT	1286.3	-	103.5
N6VYT D-Star	TBA			
PARA	443.050	+	100.0	

In the case of ALL repeaters, should the repeater fail the default frequency will be the repeater out put frequency as simplex. In most cases, and to be on the safe side, also transmit the PL on simplex.

ARES<sup>tm</sup> Net operation on PACKET will use the software program OUTPOST Packet Message Manager.

<http://www.outpostpm.org/>

ARES<sup>tm</sup> operation and WinLink 2000 will use the software program PACLINK.

<http://www.winlink.org/ClientSoftware> It is recommended to review the operation of WinLink.  
<http://www.winlink.org/node/23>

## California Section Traffic Nets

Northern California Net (NCN)	Nightly 7:00 PM	3.533 MHz
Daytime Region 6 Traffic Net	Daily 3:30 PM	7.275 MHz
California Traffic Net (CTN)	Daily 6:30 PM	3.906 MHz
Noon Time Net	Daily 12:00 PM	7.268 MHz
Golden Bear Amateur Radio Net	Nightly 7:00 PM	3.975 MHz
Mission Trail Net	Nightly 8:00 PM	3.856 MHz

The served agency and type of communications or message will determine what method of communications to use. It is often the case that a non-ham radio communications media is preferred. Keep in mind that ARES<sup>tm</sup> personnel are utilized to move information from one source to another location. Amateur Radio may not be the best method for that communications. Use all available means at your disposal. This includes other EmComm Groups that may be involved in the same operation and land based communications systems.

### SUGGESTED MODES OF AMATEUR COMMUNICATIONS

Message Type	Served Agency	Mode of Communications - HAM	Mode of Communications – Non HAM	Ham Control Closed Net
Logistics, Ham staffing and assignments, Check in, Alert messages, general traffic	Medical Welfare EMS Fed	FM repeater one	Land or Cell based phone service	Controlled net. Depending on size and complexity of the event this MIGHT be the only Net required.
Casualty reports	Medical	Packet Digipeater one. Direct	Fax, internet email	Digipeater – Open Net
General requests for food, water or medical supplies	Medical	Packet Digipeater one. Direct. FM repeater Two. FM Simplex one.	Land or cell based phone service. Fax Email	Repeaters – Controlled Net Simplex – Could be open or Controlled Digipeater – Open Net
Patient and/or personnel transport coordination.	Medical Welfare (to and from hospitals and shelters) (cross over from med to welfare)	FM Repeater two. FM repeater three. FM simplex one. FM simplex two.	Land and Cell based phone service.  Local EMS frequencies.	Repeaters – Controlled Net Simplex – Could be open or Controlled

Shelter to shelter communications - General	Welfare	FM repeater three. FM simplex three.	Land and cell based phone service	Repeater – Controlled Net Simplex – Could be open or Controlled
Lists of survivors or refugees	Welfare	Packet Digipeater one. Direct or BBS.	Fax Land or Cell based phone services. Email.	Digipeater – Open Net
Health and Welfare messages into and out of the effected area.	Welfare	NTS WinLink HF Nets	email Land and cell based phone services	Usually controlled nets. Could be a Gateway station.
Health and Welfare messages within the effected area and surrounding local areas	Welfare	FM repeater three. FM simplex three. Packet Digipeater one. WinLink 2000. Direct or BBS.	Land and cell based phone services	Repeater – Controlled Net Digipeater – Open Net
General coordination and requests.	LE and EMS	FM repeater four. FM simplex four.	Land and Cell based phone service. email Local LE/EMS frequencies.	Repeater – Controlled Net Simplex – Could be open or Controlled

Site assessment and condition reports	LE/EMS	FM repeater four. FM simplex four. ATV remote station.	Local LE/EMS frequencies. Land and cell based phone service	Repeater – Controlled Net Simplex – Could be open or Controlled
Requests for additional resources	LE/EMS	FM repeater four. FM simplex four.	Local LE/EMS frequencies. Land and cell based phone service	Repeater – Controlled Net Simplex – Could be open or Controlled
Event size up and extent of damage assessments.  Request for additional resources.  All coordination with State and Fed organizations	State OES and FEMA	Digipeater two. Direct or BBS  FM repeater linking system.  Ad-hoc HF and assigned HF nets	Land and cell based phone services.  email	Repeater – Controlled Net

Not all of these nets will be used at the same time. It is highly likely that only one or two nets would need to be activated for any small to medium event. But all nets and frequencies will be held in reserve should a very large or complex emergency arise.



## **TYPES OF DESASTER MOST LIKELY TO AFFECT THIS AREA**

It is very fortunate that the Tulare County Area of Operation does not have a rich history in disasters or the frequent need for emergency communications.

### **Large Scale Fire**

This area is not a large scale urban area and a massive urban fire is not likely. Being largely rural and forested large scale wildland fires are likely. But unlike Southern Calif. there is not a dense population in wildland areas. Nor are there high prevailing winds to push a fire into fire storm conditions (on a large scale anyway.)

None the less, fires are the most common emergency in the area and there for the chances of one becoming a wide spread disaster is more likely.

- ✓ Evacuations
- ✓ Assessment
- ✓ Survivor supplies. Food and water, etc
- ✓ Health and Welfare
- ✓ Shelters
- ✓ Hospitals
- ✓ Fire and EMS
- ✓ Fire camp operations

### **Railway Disaster**

Both, major rail carriers and regional railway operators often carry highly toxic or flammable substances through urban and rural areas. A major spill would create immediate threat to life and property. The numbers of daily trains make this the second most likely disaster to occur.

- ✓ Evacuations
- ✓ Assessment
- ✓ Survivor supplies. Food and water, etc
- ✓ Health and Welfare
- ✓ Shelters
- ✓ Hospitals
- ✓ Utility companies
- ✓ Fire and EMS

### **Earthquake**

We all know its coming, sooner or later. Although no major fault lines are in the immediate area, the surrounding areas are crisscrossed with them. Large quakes in any of the near by faults would still effect this area. There are few large buildings or large bridges in the area that would pose a large scale centralized threat. The major conflict with quakes in this area will be disruption of utilities and roadway damage

causing massive survivor isolation issues in rural areas. The occurrence of large earthquakes is infrequent but when it happens it will cause the greatest EmComm concerns.

- ✓ Evacuations
- ✓ Assessment
- ✓ Survivor supplies. Food and water, etc
- ✓ Health and Welfare
- ✓ Shelters
- ✓ Hospitals
- ✓ Utility companies
- ✓ Fire and EMS

## **National Traffic System, NTS**

The National Traffic System plan is a means for systematizing amateur traffic handling facilities by making a structure available for an integrated traffic facility designed to achieve the utmost in two principal objectives: rapid movement of traffic from origin to destination, and training amateur operators to handle written traffic and participate in directed nets. These two objectives, which sometimes conflict with each other, are the underlying foundations of the National Traffic System.

NTS operates daily, even continuously with the advent of the advanced digital links of today.

### **NTS Operation during Disasters**

The National Traffic System is dedicated to communications during disasters on behalf of ARES<sup>tm</sup>, as well as the daily handling of third-party traffic. When a disaster situation arises, NTS is capable of expanding its cyclic operation into complete or partial disaster operation depending entirely on the extent of the disaster situation and the extent of its effect. The normal cycles may be expanded as required by the situation, so that more traffic can be handled and so that it can be handled more rapidly. In the extreme case, the cycles can operate continuously, with required representation present in all nets continuously, with stations designed for this function replacing each other as others are dispatched to the higher or lower nets with which they make liaison.

In a situation like this, who alerts or activates NTS nets in a disaster and who determines which net or nets should be activated? ARRL Emergency Coordinators in disaster areas determine the communications needs and make decisions regarding the disposition of local communications facilities, in accordance with the need and in coordination with agencies to be served. The Section Emergency Coordinator, after conferring with the affected DECs and ECs, makes his recommendations to the Section Traffic Manager and/or NTS managers at section and/or region levels. The decision and resulting action to alert the NTS region management may be performed by any combination of these officials, depending upon the urgency of the situation.

***Traffic Management.*** *Radiogram form and structure is essential to efficient message handling.*

The Tulare County ARES<sup>tm</sup> organization will use the Standard ARRL Radiogram message form for all formal traffic. This includes local Welfare messages, official requests for supplies of services, and situation reports.

See Appendix B and C for forms and proper formatting.

## **ICS. The Incident Command System**

*ICS is widely used in California. Why it is used, how it supports effective management, and where and how Amateurs fit into the system?*

The Incident Command System is a management tool designed to bring multiple responding agencies, including those from different jurisdictions, together under a single overall command structure. Before the use of the ICS became commonplace, various agencies responding to a disaster often fought for control, duplicated efforts, missed critical needs, and generally reduced the potential effectiveness of the response. Under ICS, each agency recognizes one "lead" coordinating agency and person will handle one or more tasks that are part of a single over-all plan, and interact with other agencies in defined ways.

The Incident Command System is based upon simple and proven business management principles. In a business or government agency, managers and leaders perform the basic daily tasks of planning, directing, organizing, coordinating, communicating, delegating, and evaluating. The same is true for the Incident Command System, but the responsibilities are often shared between several agencies. These tasks, or *functional areas* as they are known in the ICS, are performed under the overall direction of a single Incident Commander (IC) in a coordinated manner, even with multiple agencies and across jurisdictional lines.

### ***Organizational structure:***

The ICS supports the creation of a flexible organizational structure that can be modified to meet changing conditions. Under the ICS, the one person in charge is always called the "Incident Commander" (IC). In large responses, the IC may have a "General Staff" consisting of the Information, Safety, and Liaison Officers. In a smaller incident, the IC may also handle one, two, or all three of these positions, if they are needed at all.

Various other tasks within the ICS are subdivided into four major operating sections: Planning, Operations, Logistics, and Finance/Administration. Each operating section has its own "chief," and may have various "task forces" working on specific goals. The Logistics section handles the coordination of all interagency communication infrastructures involved in the response, including Amateur Radio when it is used in that capacity.

### **How does an EmComm group "fit in" to the ICS**

Involvement in any incident where ICS is used is by "invitation only" – there is no role for off-the-street volunteers. The relationship of an EmComm group to the ICS structure will vary with the specific situation. If your group is providing internal communication support to only one responding agency, and has no need to communicate with other agencies that are part of the ICS, you may not have any part in the ICS structure itself except through your served agency. If your group is tasked with handling inter-agency communications, or serves more than one agency's internal communication needs, it is likely your group will have a representative on the Logistics Section's "communication task force."

**Personal Safety.** *A volunteer is of no use if he/she becomes one of the victims. Jump kits and appropriate personal gear are key to quick, safe responses.*

### **Information:**

Disaster relief volunteers sometimes become so involved with helping others that they forget to take care of their own families and themselves. The needs of disaster victims seem so large when compared with their own that volunteers can feel guilty taking even a moment for their own basic personal needs. However, if you are to continue to assist others, you need to keep yourself in good condition. If you do not, you risk becoming part of the problem. If your family is not safe and all their needs are not taken care of, worrying about them may prevent you from concentrating on your job.

### **Home and Family First**

Before leaving on an assignment, be sure you have made all necessary arrangements for the security, safety, and general well being of your home and family. Family members, and perhaps friends or neighbors, should know where you are going, when you plan to return, and a way to get a message to you in an emergency.

If you live in the disaster area or in the potential path of a storm, consider moving your family to a safe location before beginning your volunteer duties. Take whatever steps you can to protect your own property from damage or looting, and let a neighbor or even local police know where you are going, when you plan to return, and how to reach you or your family members in an emergency.

In addition to your EmComm deployment checklists, you might want to create a home and family checklist. It should cover all their needs while you are gone. Here are some ideas to get you started:

#### **House**

- Board up windows if you are in a storm's path
- Put lawn furniture and loose objects indoors if high winds are likely
- Move valuables to upper levels if flooding is possible
- Heating fuel tanks should be filled
- Drain pipes if below freezing temperatures and power loss are possible
- Shut off power and gas if practical and if structural damage is possible

#### **Family**

- Designate a safe place to stay if needed, preferably with friends or relatives
- Reliable transportation, with fuel tank filled
- Adequate cash money for regular needs and emergencies (not ATM or credit cards)
- House, auto, life, and health insurance information to take along if evacuated
- Access to important legal documents such as wills, property deeds, etc.

- Emergency food and water supply.
- AM/FM radio and extra batteries
- Flashlight and extra batteries, bulbs
- Generator, fuel and safe operating knowledge
- Adequate supply of prescription medications on hand
- List of emergency phone numbers
- Pet supplies and arrangements (shelters will not take pets)
- List of people to call for assistance
- Maps and emergency escape routes
- A way to contact each other
- A plan for reuniting later

### **Should you leave at all?**

There are times when your family may need you as much or more than your EmComm group. Obviously, this is a decision that only you and your family can make. If a family member is ill, your spouse is unsure of their ability to cope without you, if evacuation will be difficult, or any similar concern arises, staying with them may be a better choice. If there is ever any doubt, your decision must be to stay with your family. This is also something you should discuss, and come to an agreement with your spouse about well before any disaster, in order to avoid any last minute problems.

### **You First -- The Mission Second**

Once you are working with your EmComm group, you will need to continue to take care of yourself. If you become over-tired, ill, or weak, you cannot do your job properly. If you do not take care of personal cleanliness, you could become unpleasant to be around. Whenever possible, each station should have at least two operators on duty so that one can take a break for sleep, food and personal hygiene. If that is not possible, work out a schedule with the EmComm managers or your NCS to take periodic "off-duty" breaks.

### **Food**

Most people need at least 2000 calories a day to function well. In a stressful situation or one with a great deal of physical activity you may need even more. Experienced EmComm managers and served agency personnel will usually be aware of this issue and take steps to see that their volunteer's needs are met. If you are at a regular shelter, at least some of your food needs may be taken care of. In other situations, you may be on your own, at least for a while. High calorie and high protein snacks will help keep you going, but you will also need food that is more substantial. You may need to bring along some freeze-dried camping food, a small pot, and a camp stove with fuel, or some self-heating military style "Meal, Ready to Eat" (MRE) packages.

## **Water**

Safe water supplies can be difficult to find during and after many disasters. You will need at least three to five gallons of water each day, just for drinking, cooking and sanitation. In extremely hot or cold conditions, or with increased physical activity, your needs will increase significantly. Most disaster preparedness checklists suggest at least one gallon per person, per day.

Many camping supply stores offer a range of water filters and purification tablets that can help make local water supplies safer. However, they all have limitations you should be aware of. Filters may or may not remove all potentially harmful organisms or discoloration, depending on the type. Those with smaller filter pores (.3 microns is a very tight filter) will remove more foreign matter, but will also clog more quickly. Iodine-saturated filters will kill or remove most harmful germs and bacteria, but are more expensive and impart a faint taste of iodine to the water. Most filters will remove Giardia cysts. All water filters require care in their use to avoid cross-contamination of purified water with dirty water.

Purification tablets, such as Halazone, have a limited shelf life that varies with the type, and give the water an unpleasant taste. Tablets will do nothing for particulate (dirt) or discoloration in the water. Be sure to read and understand the information that comes with any water purification device or tablet before purchasing or using it.

The CDC says you can use plain, unscented household chlorine bleach. After filtering out any particulate by pouring it through several layers of densely woven cloth, put 1/8 teaspoon of chlorine bleach in a gallon of water, mix well, and allow it to sit for thirty minutes. If it still smells slightly of chlorine, you can use it. It will not taste great, nor will the chlorine bleach kill cysts like Giardia, but it may be enough.

If you have no other means, boiling for at least five minutes will kill any bacteria and other organisms, but will not remove any particulate matter or discoloration. Boiling will leave water with a "flat" taste that can be improved by pouring it back and forth between two containers several times to reintroduce some oxygen.

For more information on disinfecting water go to:  
<http://www.bt.cdc.gov/disasters/earthquakes/food.asp>

## **Sleep**

Try to get at least six continuous hours of sleep in every twenty-four hour period, or four continuous hours and several shorter naps. Bring fresh soft foam earplugs and a black eye mask to ensure that light and noise around you are not a problem. An appropriate sleeping bag, closed-cell foam pad or air mattress, and your own pillow will help give you the best chance of getting adequate rest. If caffeine keeps you awake, try to stop drinking coffee, tea, or other beverages containing caffeine at least four hours before going to bed. Allowing yourself to become over-tired can also make falling asleep difficult.

## **Personal Hygiene**

If you pack only a few personal items, be sure they include toothpaste and toothbrush, a comb, and deodorant. If possible, bring a bar of soap or waterless hand cleaner, a small towel and washcloth, and a few extra shirts. Waterless shampoo is available from many camping stores. After two or three days without bathing, you can become rather unpleasant to be around -- think of others and make an attempt to stay as clean and well-groomed as you can under the circumstances.

## **Safety in an Unsafe Situation**

Many disaster assignments are in unsafe places. Natural disasters can bring flying or falling debris, high or fast moving water, fire, explosions, building collapse, polluted water, disease, toxic chemicals, and a variety of other dangers. You should always be aware of your surroundings and the dangers they hold. Never place yourself in a position where you might be trapped, injured, or killed. Try to anticipate what might happen and plan ahead. Always have an escape plan ready in the event that conditions suddenly become dangerous. Do not allow yourself to become "cornered" -- always have more than one escape route from buildings and hazardous areas.

Wear appropriate clothing. Depending on the weather, your gear might include a hard hat, rain gear, warm non-cotton layers, work gloves, and waterproof boots. Always bring several pairs of non-cotton socks and change them often to keep your feet clean and dry. Create seasonal clothing lists suitable for your climate and the types of disasters you might encounter. As a volunteer communicator, you will not generally be expected to enter environments that require specialized protective clothing or equipment. Do not worry about purchasing these items unless required by your served agency.

Avoid potentially dangerous areas. Industrial buildings or facilities may contain toxic chemicals, which can be released in a disaster. Dams can break, bridges can wash out, and buildings can collapse. Areas can become inaccessible due to flooding, landslides, collapsed structures, advancing fires, or storm surges. If you can avoid being in harm's way, you can also prevent yourself from becoming part of the problem rather than part of the solution.

Be prepared to help others find or rescue you should you become trapped or isolated. Carry a police or signal whistle and a chemical light stick or small flashlight in your pocket. Let others know where you are going if you must travel anywhere, even within a "safe" building. Try not to travel alone in dangerous conditions-- bring a "buddy."

## **Shelter**

In most cases, you will not need your own shelter for operating or sleeping. You may be able to stay or work in the emergency operations center, evacuation shelter, or even your own vehicle. However, in some cases a tent, camp trailer, motor home, or other suitable shelter may be necessary. Your choice will depend on your needs and resources.



Tents should be rated for high winds, and should be designed to be waterproof in heavy weather. Most inexpensive family camping tents will not survive difficult conditions. Dome tents will shed wind well, but look for published "wind survival" ratings since not all dome designs are equal. Your tent should have a full-coverage rain fly rather than a single waterproof fabric. The tent's bottom should be waterproof, extending up the sidewalls at least six inches in a "bath-tub" design, but bring an extra sheet of plastic to line the *inside* just in case. (Placing a plastic ground cloth under a tent will allow rain to quickly run under and through a leaky tent floor.) Bring extra nylon cord and long ground stakes to help secure the tent in windy conditions. If you are not an experienced foul weather camper, consider consulting a reputable local outfitter or camping club for advice on selecting and using a tent.

### **Medical Considerations**

If you have a medical condition that could potentially interfere with your ability to do your job, it is a good idea to discuss this with your physician ahead of time. For instance, if you are a diabetic, you will need to avoid going for long periods without proper food or medication, and stress may affect your blood sugar level. Persons with heart problems may need to avoid stressful situations. Even if your doctor says you can participate safely, be sure you have an adequate supply of appropriate medications on hand, and a copy of any prescriptions. Let your EmComm manager and any work partners know of your condition so that they can take appropriate actions if something goes wrong. Wear any medical ID jewelry you have. Keep a copy of any special medical information and emergency phone numbers in your wallet at all times.

### **Protect Your Eyes and Sight**

If you wear eyeglasses or contact lenses, bring at least one spare pair. If you use disposable contact lenses, bring more than enough changes to avoid running out. Some contact lens wearers may want to switch to glasses to avoid having to deal with lens removal and cleaning under field conditions. If you have any doubts, consult your eye doctor ahead of time. Bringing a copy of your lens prescription along may also be a good idea, especially if you are likely to be some distance from home for a while.

Sunglasses may be a necessity in some situations. Working without them in bright sun can cause fatigue, and possibly eye damage. If you are in an area with large expanses of snow or white sand, prolonged periods of exposure can cause the retina to be burned, a very painful condition commonly known as "snow blindness." Since no painkiller will help with retinal burns, it is best to use good quality UV blocking sunglasses at all times, and avoid prolonged exposure.

If you do not normally wear eyeglasses, consider a pair of industrial safety glasses or goggles to protect your eyes from wind-blown water, dust, and debris. Keep all spare eyeglasses or safety glasses/goggles in a felt-lined hard-shell storage case to prevent scratching and breakage.

**Sample Personal Survival and Comfort Needs Checklist** (Modify according to your own situation)

- Suitable size backpack or duffel bag for clothing and personal gear
- Plastic storage tub for food, cooking gear
- Toilet kit -- soap, comb, deodorant, shampoo, toothbrush, toothpaste
- Toilet paper in zipper-lock freezer bag
- Small towel and washcloth
- Lip balm
- Facial tissues
- Sunscreen
- Insect repellent
- Prescription medications (1 week supply)
- Copies of medication and eyeglass/contact lens prescriptions
- Spare eyeglasses or contact lenses and supplies
- Hand lotion for dry skin
- Small first aid kit
- Non-prescription medications, including painkiller, antacids, anti-diarrheal, etc.
- Extra basic clothing -- shirts, socks, underwear
- Gloves, for protection or warmth
- Pocket flashlight
- Folding pocket knife
- Sleeping bag, closed-cell foam pad or air mattress, pillow
- Ear plugs (soft foam type in sealed package)
- Outer clothing for season and conditions (rain gear, parka, hat, face mask, etc)
- Hard hat
- Reflective vest, hat
- Travel alarm clock
- Chemical light sticks
- Dust masks
- Phone/email/address list for family, friends, neighbors, physician, pharmacy
- Emergency contact/medical information card in your wallet
- Spare car and house keys
- High energy or high protein snacks
- Food -- Freeze-dried or MREs
- Coffee, tea, drink mixes
- Plate or bowl, knife, fork and spoon, insulated mug
- Camp stove, small pot, fuel and matches
- Battery or other lantern
- Water, in heavy plastic jugs
- Water purification filter or tablets
- Magnetic compass, maps
- Duct tape, parachute cord

Consider packing individual items or kits in zipper-lock freezer bags to keep the contents dry, clean, and neat.

## Appendix A

### Emergency Net Activation

The 145.31 (- offset, 100.0 PL) repeater will be the primary repeater upon activation.

The Emergency Coordinator or Acting Emergency Coordinator will declare an emergency and officially open the net. In the absence of the EC or AEC the first operator to monitor will become the acting Net Control Station (NCS).

NCS is to take control of the situation and the net operations. Keep the traffic flowing, gather situation reports, maintain order. Provide what information he/she has.

#### Net activation preamble

QST QST QST. All amateur stations in the Tulare County Operations Area.

This is <Call Sign> Net Control.

The Tulare County ARES<sub>tm</sub> Emergency Net has been activated. Normal operation of this repeater is here by preempted.

This is a directed net. All communications will be directed to and by the Net Control Station.

<break>

[Brief description of the emergency] (*Such as "An earthquake has just occurred in the area of Tulare County. <any specific info – magnitude, epicenter, etc).*

The scope of this emergency has not yet been determined. It is expected communications assignments will be forth coming.

<Break>

Is there any emergency traffic at this time?

<Break>

Roll call will follow: <roll call by city >

<Break>

Are there any stations with emergency traffic at this time?

<Break>

Are there late or additional check-ins?

<Break>

<Repeat the preamble.>

All amateur stations in the Tulare County Operations Area.

This is <Call Sign> Net Control.

The Tulare County ARES<sub>tm</sub> Emergency Net has been activated. Normal operation of this repeater is here by preempted.

This is a directed net. All communications will be directed to and by the Net Control Station.

<Break>

[Brief description of the emergency] (*Such as "An earthquake has just occurred in the area of Tulare County. <any specific info – magnitude, epicenter, etc).*

The scope of this emergency has not yet been determined. It is expected communications assignments will be forth coming.

<Break>

Are there stations with emergency traffic or reports of damage?

From here on the net will need to be handled as the situation would dictate. Different disasters may require different information or styles of operation.

As the situation grows keep providing updated information. Communications assignments will be required. By this time NCS will have additional ARES<sup>tm</sup> officials that will help in accessing checked in member qualifications and make the communications assignments.

Remember to identify yourself using your callsign at the end of your contact and/or every 10 minutes of your continuous contact. Roll call should be taken at least once an hour, if possible every thirty minutes.

At lulls in net activity, repeat the preamble and ask for additional check-ins.

**Resource/logistics Net Control Station (NCS) will keep an accurate log of stations on the net.**

- The capabilities of those stations and the assignment.
- When stations were passed off to different nets and when they returned.
- Traffic being passed
- Type of traffic
- Who had it and who it was passed to
- Log informal communications as pertinent.
- Additional nets or frequencies in use.
- Open and close other nets and assign NCS to them as required.
- Keep a list of operational frequencies and what they are being used for.

## APPENDIX B FORMAL TRAFIC - RADIOGRAM

# FSD-218

Relief Emergency • Routine Messages  
Recommended Precedence

Every formal radiogram message originated and handled should contain the following component parts in the order given

### I. Preamble

- a. Number (begin with 1 each month or year)
- b. Precedence ({in order of importance} EMERGENCY, P [priority], W [welfare], or R [routine])
- c. Handling Instructions (optional, see text)
- d. Station of Origin (first amateur handler)
- e. Check (number of words/groups in text only)
- f. Place of Origin (not necessarily location of station of origin.)
- g. Time filed (optional with originating station)
- h. Date (must agree with date of time filed)

### II. Address

(As complete as possible, include zip code and telephone number)

### III. Text

(Limit to 25 words or less, if possible)

### IV. Signature

**CW:** The prosign  separates the parts of the address.  separates the address from the text and the text from the signature.  marks end of message; this is followed by B if there is another message to follow, by N if this is the only or last message. It is customary to copy the preamble, parts of the address, text and signature on separate lines.

**RTTY:** Same as CW procedure above, except (1) use extra space between parts of address, instead of ; (2) omit cw procedure sign  to separate text from address and signature, using line spaces instead; (3) add a CFM line under the signature, consisting of all names, numerals and unusual works in the message in the order transmitted.

**PACKET/AMTOR BBS:** Same format as shown in the cw message example above, except that the  and  prosigns may be omitted. Most amtor and packet BBS software in use today allows formal message traffic to be sent with the “ST” command. Always avoid the use of spectrum-wasting multiple line feeds and indentations.

**PHONE:** Use *prowords* instead of prosigns, but it is not necessary to name each part of the message as you send it. For example, the above message would be sent on phone as follows:  
“Number one routine HX Golf W1AW eight Newington Connecticut one eight three zero zulu July one Donald Smith Figures one six four East Sixth Avenue North River City Missouri zero zero seven eight nine Telephone seven three three four nine six eight Break

Happy birthday X-ray see you soon X-ray love Break Diana End of Message Over. “End of Message” is followed by “More” if there is another message to follow, “No More” if it is the only or last message. Speak clearly using VOX (or pause frequently on push-to-talk) so that the receiving station can get fills. Spell phonetically all difficult or unusual words--do not spell out common words. Do not use cw abbreviations or Q-signals in phone traffic handling.

### Precedence

The precedence will follow the message number. For example, on cw 207R or 207 EMERGENCY. On phone, “Two Zero Seven, Routine (or Emergency).”

**EMERGENCY**--Any message having life and death urgency to any person or group of persons, which is transmitted by Amateur Radio in the absence of regular commercial facilities. This includes official messages of welfare agencies during emergencies requesting supplies, materials or instructions vital to relief of stricken populace in emergency areas. During normal times, it will be *very rare*. On cw, RTTY and other digital modes this designation will always be spelled out. When in doubt, *do not* use it.

**PRIORITY**--Important messages having a specific time limit. Official messages not covered in the Emergency category. Press dispatches and other emergency-related traffic not of the utmost urgency. Notifications of death or injury in a disaster area, personal or official. Use the abbreviation P on cw.

**WELFARE**--A message that is either a) an inquiry as to the health and welfare of an individual in the disaster area b) an advisory or reply from the disaster area that indicates all is well should carry this precedence, which is abbreviated W on cw. These messages are handled *after* Emergency and Priority traffic but before Routine.

**ROUTINE**--Most traffic normal times will bear this designation. In disaster situations, traffic labeled Routine (R on cw) should be handled *last*, or not at all when circuits are busy with Emergency, Priority or Welfare traffic.

### Handling Instructions (Optional)

**HXA**--(Followed by number) Collect landline delivery authorized by addressee within....miles. (If no number, authorization is unlimited.)

**HXB**--(Followed by number) Cancel message if not delivered within....hours of filing time; service originating station.

**HXC**--Report date and time of delivery (TOD) to originating station.

**HXD**--Report to originating station the identity of station from which received, plus date and time. Report identity of station to which relayed, plus date and time, or if delivered report date, time and method of delivery.

**HXE**--Delivering station get reply from addresses, originate message back.

**HXF**--(Followed by number) Hold delivery until.... (date).

**HXG**--Delivery by mail or landline toll call not required. If toll or other expense involved, cancel message and service originating station.

For further information on traffic handling, consult the Public Service Communications Manual or the ARRL Operating Manual, both published by ARRL.

# THE AMERICAN RADIO RELAY LEAGUE

## RADIOGRAM

### VIA AMATEUR RADIO

Number	Precedence	HX	Station of Origin	Check	Place of Origin	Time Filed	Date
--------	------------	----	-------------------	-------	-----------------	------------	------

TO

This Radio Message Was Received At	
Amateur Station _____	Phone _____
Name _____	
Street Address _____	
City and State _____	

Telephone Number


Time	From	Date	<b>SENT</b>	To	Date	Time
<b>REC'D</b>						
<p>This message was handled free of charge by a licensed Amateur Radio Operator whose address is shown in the box at right above. As such messages are handled solely for the pleasure of operating. No compensation can be accepted by a "Ham" operator. A return message may be filed with the "Ham" delivering this message to you. Further information on Amateur Radio may be obtained from A.R.R.L. Headquarters 225 Main Street, Newington, CT 06111</p>			<p>The American Radio Relay League, Inc., is the national membership society of licensed radio amateurs and the publishers of QST Magazine. One of its functions is promotion of the public service communications among amateur operators to that end. The League has organized the National Traffic System for daily nationwide message handling.</p>			

APPENDIX C  
TRAFFIC – ARL MESSAGES

## FSD-3

### Relief Emergency • Routine Messages Recommended Precedences

The letters ARL are inserted in the preamble in the check and in the text before spelled out numbers, which represent texts from this list. Note that some ARL texts include insertion of numerals and text. Example: NR 1 R W1AW ARL 5 NEWINGTON CONN. DEC 25 DONALD R. SMITH  164 EAST SIXTH AVE  NORTH RIVER CITY MO  PHONE 73-3968  ARL FIFTY ARL SIXTY ONE BT DIANA . For additional information about traffic handling, consult *The ARRL Operating Manual*, published by ARRL, or the *NTS Methods and Practices Guidelines*, [www.arrl.org/FandES/field/nts-mpg/](http://www.arrl.org/FandES/field/nts-mpg/).

#### Group One—For Possible “Relief Emergency” Use

ONE	Everyone safe here. Please don't worry.
TWO	Coming home as soon as possible.
THREE	Am in _____ hospital. Receiving excellent care and recovering fine.
FOUR	Only slight property damage here. Do not be concerned about disaster reports.
FIVE	Am moving to new location. Send no further mail or communication. Will inform you of new address when relocated.
SIX	Will contact you as soon as possible.
SEVEN	Please reply by Amateur Radio through the amateur delivering this message. This is a free public service.
EIGHT	Need additional _____ mobile or portable equipment for immediate emergency use.
NINE	Additional _____ radio operators needed to assist with emergency at this location.
TEN	Please contact _____. Advise to standby and provide further emergency information, instructions or assistance.
ELEVEN	Establish Amateur Radio emergency communications with _____ on _____ MHz.
TWELVE	Anxious to hear from you. No word in some time. Please contact me as soon as possible.
THIRTEEN	Medical emergency situation exists here.
FOURTEEN	Situation here becoming critical. Losses and damage from _____ increasing.
FIFTEEN	Please advise your condition and what help is needed.
SIXTEEN	Property damage very severe in this area.
SEVENTEEN	REACT communications services also available. Establish REACT communication with _____ on channel _____.
EIGHTEEN	Please contact me as soon as possible at _____.
NINETEEN	Request health and welfare report on _____. (State name, address and telephone number.)
TWENTY	Temporarily stranded. Will need some assistance. Please contact me at _____.



TWENTY ONE Search and Rescue assistance is needed by local authorities here. Advise availability.

TWENTY TWO Need accurate information on the extent and type of conditions now existing at your location. Please furnish this information and reply without delay.

TWENTY THREE Report at once the accessibility and best way to reach your location.

TWENTY FOUR Evacuation of residents from this area urgently needed. Advise plans for help.

TWENTY FIVE Furnish as soon as possible the weather conditions at your location.

TWENTY SIX Help and care for evacuation of sick and injured from this location needed at once.

Emergency/priority messages originating from official sources must carry the signature of the originating official.

### Group Two—Routine Messages

FORTY SIX Greetings on your birthday and best wishes for many more to come.

FORTY SEVEN Reference your message number \_\_\_\_\_ to \_\_\_\_\_ delivered on \_\_\_\_\_ at \_\_\_\_\_ UTC.

FIFTY Greetings by Amateur Radio.

FIFTY ONE Greetings by Amateur Radio. This message is sent as a free public service by ham radio operators at \_\_\_\_\_. Am having a wonderful time.

FIFTY TWO Really enjoyed being with you. Looking forward to getting together again.

FIFTY THREE Received your \_\_\_\_\_. It's appreciated; many thanks.

FIFTY FOUR Many thanks for your good wishes.

FIFTY FIVE Good news is always welcome. Very delighted to hear about yours.

FIFTY SIX Congratulations on your \_\_\_\_\_, a most worthy and deserved achievement.

FIFTY SEVEN Wish we could be together.

FIFTY EIGHT Have a wonderful time. Let us know when you return.

FIFTY NINE Congratulations on the new arrival. Hope mother and child are well.

\*SIXTY Wishing you the best of everything on \_\_\_\_\_.

SIXTY ONE Wishing you a very Merry Christmas and a Happy New Year.

\*SIXTY TWO Greetings and best wishes to you for a pleasant \_\_\_\_\_ holiday season.

SIXTY THREE Victory or defeat, our best wishes are with you. Hope you win.

SIXTY FOUR Arrived safely at \_\_\_\_\_.

SIXTY FIVE Arriving \_\_\_\_\_ on \_\_\_\_\_. Please arrange to meet me there.

SIXTY SIX DX QSLs are on hand for you at the \_\_\_\_\_ QSL Bureau. Send \_\_\_\_\_ self addressed envelopes.

SIXTY SEVEN Your message number \_\_\_\_\_ undeliverable because of \_\_\_\_\_. Please advise.

SIXTY EIGHT Sorry to hear you are ill. Best wishes for a speedy recovery.

SIXTY NINE Welcome to the \_\_\_\_\_. We are glad to have you with us and hope you will enjoy the fun and fellowship of the organization.

\* Can be used for all holidays.

## **APPENDIX D - THE FIRST 72 HOURS**

*This is based in part on observations by Bob Dyruff, W6POU, noted California authority on disaster communications. Dyruff assisted governmental and volunteer agencies in disaster planning for years and was the ARRL Assistant Director for Emergency Communications in the Southwestern Division among other posts in the ARRL Field Organization.*

### **Onset: Critical Communication Requirements in a Disaster**

What happens to critical communication assets during the onset of disaster conditions? First, there is a huge increase in the volume of traffic on public-safety radio channels, accompanied by prolonged waiting periods to gain access. As the disaster widens, equipment outages occur at key locations. Messages are not handled in order of priority, and urgent messages are often lost.

As agencies respond, the need arises for agencies to communicate with one another. Meeting that need is an up-hill battle as these agencies have incompatible radio systems, and use unfamiliar or unattainable frequencies, names, terms, and procedures. Exacerbating the situation is the fact that most agencies are reluctant to use another agency's system, or to allow theirs to be used by others.

In a large-scale situation, a need arises to contact locations at distances beyond the range of a given radio or system (50 to 350 miles or more).

Message reply delays are experienced, leading to deferred decisions on crucial matters, message duplication and confusion. A need arises to generate and decipher handwritten messages sent through relaying stations.

Different modes of communication are required in addition to voice:

- Volume data in printed form data modes, high-speed packet, and facsimile.
- Morse code or PSK31 under difficult reception conditions.
- Encoded data for extreme privacy.
- Television--mobile, portable, aeronautical, and marine.
- Telephone interconnections from/to radio systems.

Simultaneously with a high volume of message traffic, stations must cope with messages having widely differing priorities. Also, priority and precedence designations differ among agencies if any are used at all.

Operational problems arise such as:

1. High-volume traffic circuits with no supply of message forms;

2. Using the only printed forms available that were designed for a different, unrelated agency or function;
3. Attempting to decipher scribbling from untrained message writers; using scribes who cannot understand radio parlance or read through QRM; and
4. Becoming inundated with traffic volume so heavy it results in confusion over which messages are to be sent, which were sent, which have been received for delivery, and which have been received to be filed for ready reference.

### **What Happens in the First 72 Hours?**

In the early hours of an emergency turning into a major disaster, it takes precious time to overcome the obstacles to placing fully activated mutual aid resources into operation. Communication is one of those vital resources.

The greatest concentration of relief efforts is generally found in the incorporated cities served by agencies with paid professionals--assuming their equipment, facilities and personnel remain operable. While urban areas experience more concentrated damage, suburbs and isolated areas of a county suffer from remoteness from fire departments, public works, law enforcement and the services of all other agencies. All organizations scramble to respond to an unprecedented demand for service within their authorized jurisdiction.

In these circumstances the public is often isolated, unable to call for help or determine the nature and extent of the disaster so that they can make plans to:

- "Wait it out."
- Prepare to evacuate.
- Actually evacuate with some possessions to a safe place.
- Obtain physical aid for an impending catastrophe.
- Offer aid to a relative, friend or neighbor.

Lack of information results in further attempted use of the telephone when the system is already saturated, if indeed it is still operating at all. Calls can often be received from out-of-town but not made across town.

The opportunity to call for help is often unavailable to most citizens during the first 72 hours. Occasionally, a passing public safety vehicle or one equipped with an operational commercial, utility, Amateur or CB radio can be "flagged down" to make a call assuming it can contact a person who can help.

Too little information is gathered about the public's immediate needs, and ways to meet them. Distorted public perceptions develop through misinformation. At the same time, essential damage-assessment report data is needed by state and federal agencies to initiate relief aid from outside the disaster area.

Broadcast stations (those still on the air) initially disseminate rumors in the absence of factual information. Those few people who possess an operating battery-powered broadcast band

radio can tune until they find a local station that can provide helpful information. Others receive such information second hand, if at all.

Everywhere, people walk aimlessly seeking a route to family and friends. Many, fearful of looting, remain in hazardous buildings, or return, as do shopkeepers, to salvage valuables. As darkness falls, rumors of looting are generated, some true.

Word circulates about shelter locations. Some displaced persons stay at homes of friends, relatives or strangers. Others are housed at public shelters into the fourth day, still searching for family members elsewhere, and without communication. The opportunity to notify concerned distant relatives is not afforded except via Amateur Radio and the American Red Cross.

Later, often too late, information trickles in about problem areas or cases that have been overlooked due to the lack of communication. Some potential evacuees are overlooked.

Once the immediate threat to life has passed, survival instincts prevail. Printed "What to Do" instructions are located and followed, and people operate essentially on their own for an indefinite period while public agencies respond to the most urgent problems of which their communications make them aware.

After-shocks, flare-up of fires, weakening or breaking of dams and new flood crests, build-up of winds, etc., result in some relief work being undone and the posing of new threats.

Inter-agency communication is poor to non-existent. At the end of 72 hours, the disaster area remains in virtual isolation except for helicopter service for known critical cases and official use.

Little centralized information is available. Amateur Radio operators from neighboring counties and states offer to help but are often unable to cross the roadblocks established to limit access by sightseers and potential looters. Disorganized local volunteers often lack essential skills and orientation. Costly mistakes are made and systems bog down.

The dead pose a serious health problem. Stress rises among the citizenry. Little overall assessment emerges in the first 72 hours about available emergency resources and relief supplies. Shortages are apparent and growing.

Travel continues to be difficult and slow. Relief supplies trickle in to uncertain storage locations. Some supplies are useless.

Restaurants remaining open are unable to cook without gas or to serve the masses that flood them. Food and water shortages have become critical. Normal water sources may have been cut off or contaminated.

Eventually, essential functional communication networks evolve as priorities are asserted and clusters of traffic emerge. Relief efforts are mounted when someone takes charge, makes a

decision, and directs the efforts of others. The command and control process of directing others requires communication - the ingredient in short supply in all disasters.

At critiques following a disaster, as always, the cry is heard: "Next time we must be better prepared!"

It is the goal of the Tulare County ARES<sup>tm</sup> to better provide that communications in the first 72 hours after a disaster.

## **APPENDIX E - EMERGENCY GO KITS**

**--- EXAMPLE ---**

### **EMERGENCY PREPAREDNESS 72-HOUR KITS (Go Kits)**

**Individual 72-Hour Kits** *(Note: Each item maintained in bag year-round)*

#### **FOOD:**

- Plastic Bag 1 (large):
  - ✓ MREs – three
- Plastic Bag 2 (small):
  - ✓ Jerky – small amount
- Plastic Bag 3 (small):
  - ✓ Snack Bag – small amount
- Plastic Bag 4 (small):
  - ✓ Utensils – fork, spook, knife, bowl, cup & small can opener

#### **WATER:**

- Plastic Bottle 1 & 2 (liter):
  - ✓ Drinking Water x2
  - ✓ Water filter

#### **WARMTH:**

- Plastic Bag 1 (large):
  - ✓ one change of clothes (garments/underwear, socks, shirt, pants)
- Plastic Bag 2 (small):
  - ✓ one emergency space blanket & hand warmers

#### **SHELTER:**

- Small Tent
- Thick Plastic Sheet – 10x10ft
- Rope / Cord – two 10 ft sections

#### **SANITATION:**

- Plastic Bag 1 (small):
  - ✓ Diaper Wipes – as many as fit in bag
- Plastic Bag 2 (small):
  - ✓ Toilet Paper – one roll
- Plastic Bag 3 (small):
  - ✓ Toothbrush & Toothpaste – one small tube and Hand Sanitizer – one small bottle

#### **MISCELLANEOUS:**

- Plastic Bag 1 (size):

- ✓ Matches – one small box
- Plastic Bag 2 (size):
  - ✓ Money -- \$20 (2x \$5, 9x \$1, 4x Quarters)
- Plastic Bag 3 (size):
  - ✓ First-aid Kit – one small bag
- Flashlight w/ extra batteries
- Radio w/ extra batteries
- Identification:
  - ✓ Identifications Cards
  - ✓ Social Security Card
  - ✓ Contact Information: home address w/ phone numbers for self and relatives

### **Radio Equipment (EmComm)**

HT Ham Radios, FRS/ GRMS, MURs,

Batteries, Chargers AC / Solar

Mobile VHF/UHF Ham Radio Unit 30watt min

Antenna equipment. Portable antennas, Cables, Connectors

Packet TNC equipment. Laptop computer, TNC, Radio, power supplies

HF Radio – Ready Box

Power supply, 12V battery system, Solar Charger.

Antenna equipment. Portable antenna, Cables, Connectors

Radio Tool kit, Adapters

Portable Table and Chairs

Contact Information for ARES<sup>tm</sup>, RACES and Personal Emergency numbers.

**Contact List**  
**Emergency Contact List**

Name	Tel number	Cell Number	City
<b>Personal Information</b>			
<b>Modify as Necessary</b>			
<b>TCARES</b>	Area Code 559		
Hal Clover, ARES <sup>tm</sup> KC5LUB			Porterville
Jim Reeves, RACES KC6YRU			Visalia
Ray Quinn, AEC W6RAY			Visalia
Jim Purvis, AEC WA7HRG			Exeter
Eric Ott, Net Manager N6VYT			Visalia
Paul Reagan, Pres TCARC KI6KGT			Tulare
Greg Coulter, Pres PARA W6NRA			Porterville
<b>Additional contact information as needed</b>			