

SACRAMENTO VALLEY SECTION OPERATIONS PLAN



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Background

The Amateur Radio Service is authorized under Part 97 of the Federal Communications Commission's rules as a "voluntary non-commercial communication service, particularly with respect to providing emergency communications". ARRL: The national association for Amateur Radio facilitates emergency communications through its Field Organization in general and the Amateur Radio Emergency Service™, ARES™, in particular.

The ARES is the emergency branch of the ARRL Field Organization. It operates under the direction of the Section Manager, an elected position within the Field Organization. There are 71 sections in the United States and its possessions. Sacramento Valley is one of these sections.

The ARES operates to serve both governmental and non-governmental agencies through "Memoranda of Understanding" (MOU). These MOUs are non-binding letters explaining the participating parties' roles and responsibilities and are initiated at both the national and section levels. Written MOUs need not be in place on a section or local level if they exist on a national level. Local MOUs do not require district or section level signatures and are limited to their respective local ARES organizations. Section-level MOUs transfer in-kind as new Section Managers are elected unless specifically cancelled by the incoming Section Manager. Agencies signatory to MOUs are referred to as "Served Agencies".

With regard to the events of September 11, 2001 and our newly created Department of Homeland Security, the need for trained and prepared communicators has greatly increased. The recent affiliation of the ARRL and the Citizen Corps opens new opportunities for service by ARES. Part of that affiliation is the Community Emergency Response Team (CERT) program. CERT provides teams of trained volunteers that provide emergency services during emergencies in residential and business neighborhoods. ARES is committed to provide training and operators for the CERT program as it is developed in areas throughout Sacramento Valley.

PURPOSE

It is the intention of this plan to provide guidelines for training and usage of amateur radio volunteer communicators. The Sacramento Valley Section ARES organizations recognize the role of the Radio Amateur Civil Emergency Service (RACES) to government agencies as auxiliary communications links during times of emergency. It is also the intention of this plan to recommend a standard for training and preparation of ARES operators to assist with the needs of the state and local government communications as required.

This plan has been written by the Sacramento Valley Section leadership to provide assistance, guidance, direction and standards for ARES units within the section. The contents of this plan are intended to be a compilation of best practices, guidelines and suggested standard operating procedures rather than a specific blueprint. This manual is a resource, not a regulation. The County and Geographical EC is given great latitude to determine the actual needs and programs to implement support for county emergency managers and clients. There is no way a single plan will be able to anticipate and provide for all contingencies. Every unit, at the County or District level faces somewhat different situation and issues. Specificity should increase as each subordinate plan approaches the most local level.

MISSION STATEMENT

It shall be the mission of the Sacramento Valley Section Amateur Radio Emergency Service to provide its served agencies with reliable, responsible, effective and accurate communications support. That support will be provided in times of emergency or disaster when requested by the agencies and organizations we serve.

To accomplish this mission, members of Sacramento Valley Section ARES will maintain a state of readiness personally and technically. They shall maintain their equipment and training at a level consistent with the needs of the service. Member conduct shall at all times be in a manner that reflects favorably on the Amateur Radio Service and the clients we serve.

ARES/RACES

While ARES and RACES are separate entities, the American Radio Relay League (ARRL) has long advocated dual membership and cooperative efforts between both groups. This is one possible approach for the Sacramento Valley Section. A good solution has been found in combining both the leadership and membership of both units. If the ARES Emergency Coordinator and the RACES Radio Officer is the same individual, and all of the members are enrolled in both ARES and RACES, all the group need do is 'change hats' and go on as before.

The Amateur Radio Emergency Service (ARES) is part of the Field Services Division of the ARRL and is designed to support as fully as possible selected emergency response and disaster relief organizations. The ARRL has established a number of Memorandums of Understanding (MOU's) between ARRL and other agencies. The current MOU's at the national level are as follows:

- American Red Cross
- National Weather Service
- Department of Homeland Security – Citizens Corps (FEMA)
- Association of Public-Safety Communications Officials – International
- National Communications System
- National Association of Radio and Telecommunications Engineers, Inc.
- Salvation Army
- Society of Broadcast Engineers
- Quarter Century Wireless Association, Inc.
- Radio Emergency Associated Communications teams (REACT)
- Civil Air Patrol

However, ARES does retain its own identity and organizational structure, personnel and physical infrastructure while providing communications support.

When dealing with served agencies, including county emergency managers; remember that ARES is itself a self-contained emergency organization that works with the served agency, not for it; that is, in partnership. The ARES infrastructure includes privately owned radios, antennas, ARES dedicated and cooperating repeaters and accessory equipment. Even more important than the equipment, the organizational structure includes numerous nets, training exercises, community support and cooperative planning with the agencies. When officials request ARES support they get the full benefit of all this, as well as the personal services of many volunteer operators, many of whom are not visible in the emergency or disaster area. At the same time, be mindful that ARES operators working in a served agency will be perceived as part of their organization, and should be governed by their dress, grooming, and behavior standards, and should be prepared to do anything within reason to assist them.

What became the Radio Amateur Civil Emergency Service (RACES) grew out of a World War II civil defense organization of amateur operators that had been organized by the then War Department. By 1952, as the 'cold war' developed, it became clear that increased attention to communications was needed in a variety of civil defense applications and RACES, as it is known today, was born. Today it is recognized as one of the frameworks through which amateur radio operators would assist Department of Homeland Security (DHS) and Federal Emergency Management Agency (FEMA) requirements for back-up or emergency communications as part of the National Communications System (NCS). Other frameworks utilizing amateur radio operators include the Military Affiliate Radio Service (MARS) and the NCS Shared Resources program (SHARES).

RACES Units are created and administered by local, county and state civil defense-emergency management agencies. Each unit is a separate entity, and there is no hierarchy or structure of command and control between units. In short, each RACES Unit 'belongs' to a specific civil preparedness governmental entity. As Part 97.407 rules make clear, RACES is intended to provide radio communications for civil-preparedness purposes only, during periods 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. It is important to note that only emergency management officials can authorize RACES Units, and appoint RACES Radio Officers (RO's), and that this operation is strictly limited to official civil-preparedness activity in the event of an emergency communications situation.

Amateurs operating in a local RACES organization must be officially enrolled in the local civil-preparedness agency having jurisdiction prior to an emergency. This requirement is met when the County Emergency Manager conducts a background check and further recommends that an individual be issued a RACES identification card. Though not in force, it is recommended that a statewide ARES/RACES ID card be issued for all primary ARES/RACES unit members.

When the president invokes the War Powers Act, the regular Amateur Radio Service would be required to shut down and RACES stations would be allocated frequencies based on the recently revised provisions of 97.214.

During a 'non-declared emergency', a training session, or area exercise the unit can operate as an ARES unit. When local, State, or Federal authorities officially declare an emergency or disaster, the unit becomes a RACES unit if required, with no change in leadership, membership, or operating practices.

It is the recommendation of this plan that all ARES operators register with their local government emergency management agencies. This fulfills the mandatory registration requirements of Part 97 for RACES operators. It will also provide a larger contingency of qualified operators that may be utilized during emergencies regardless of affiliation with ARES or RACES. ARES operators should be prepared to assist any agency whether government or private sector as dictated by the needs of any given situation. **However, the EC may activate the ARES unit at the request of any individual served agency that has or anticipates a communications emergency.**

The Section Emergency Coordinator shall establish the training standards for new ARES volunteers and encourage all new ARES operators to complete a basic curriculum for EMCOMM training and that regular exercises are held so that the section maintains a high degree of readiness.

ARES/RACES units are NOT ‘self-activating’

One of the reasons for this is that in a number of counties arrangements have been made to provide injury, Workman’s Comp and liability insurance to properly accredited volunteers, of which **activated** ARES/RACES Units are one example.

Nevertheless, there are a number of situations in which common sense should prevail. For example, should ARES/RACES members, especially EC’s, AEC’s and other appointees, become aware of an emergent emergency or disaster situation there are some logical and reasonable steps that could, and should be taken. A proactive EC might want to initiate contact with their County Emergency Manager to make sure that they are aware of the event; begin a local or county net in preparation for assignment; and ensure that their gear and equipment is ready for activation.

In the Sacramento Valley Section report any activation immediately to the appropriate DEC and SEC.

Activation and mobilizing the ARES does not require a section official's endorsement. If a member station determines that a true emergency situation exists, every effort should be made to notify the appropriate EC so that information concerning an incident may be relayed through the ARES structure and net operations established. If the appropriate EC is unavailable, the chain of command should be followed. This does not preclude operators from contacting an emergency dispatch center or requesting assistance for smaller incidents, such as initial fire, medical or traffic accident calls. EC's are to provide members with their personal contact information as well as the DEC and SEC.

ARES member stations should then monitor the assigned Amateur frequency used in the affected area. This would include appropriate repeater output frequencies and predetermined high frequency net frequencies. If electrical service to a repeater is interrupted and backup power is not available, stations should monitor the repeater output frequency or other pre-determined simplex frequency, as directed by the local leadership. Appointed OES stations shall establish HF, VHF and/or digital nets on assigned frequencies if a declaration of emergency is imminent. Do not wait for an official declaration before going on the air. The earlier in an emergency you can be operating, the sooner the need for assistance can be communicated.

It is important that stations not interrupt existing emergency communications, but instead listen and only transmit if specific assistance is requested from that station or if a clear relay can be given in times of difficult copy. Stations should conform to establish net protocol at all times. Deviating from established net procedure slows and confuses operations.

Calls for assistance from served agencies should be routed to the appropriate EC. This will result in the most efficient and appropriate response.

The Sacramento Valley Section Emergency Coordinator shall notify the Section Traffic Manager whenever an incident is expected to require the movement of formal traffic outside the local area. Available ARES OES stations appointed as an NTS liaison station should activate and check in on the ARES frequencies to handle any traffic that may be needed. NTS stations are listed in the appendices of this plan.

An annual test of the Sacramento Valley Section ARES will be conducted during the month of October in conjunction with the National Simulated Emergency Test (SET). This test will be conducted at various levels throughout the section. It is also recommended that district or local exercises be held as appropriate and coordinated with district or local agency participation whenever possible.

The ARRL has provided a course for Emergency Communications training and certification. The course is presented in two levels. The Level-1 course is highly recommended as the basic training standard for new ARES members. New ARES members are encouraged to complete Level-1 training within one year of registration with their local ARES group. Information on Level-1 certification can be found at <http://www.arrl.org/online-course-catalog#EC-001>. EC's are also encouraged to complete EC-001. DEC's and SEC's are encouraged to complete EC-016. It is further recommended that ICS-100, 200, 700 and 800 be taken as an introduction to the Incident Command System.

Additional tests, drills, nets, and training will be carried out as directed by the individual EC's and DEC's. These sessions allow tailoring of training requirements to the specific needs of the area and served agencies. Consideration should be given to the needs of adjacent areas for maintaining a high state of readiness for mutual assistance support. It is recommended that neighboring sections be invited to participate in any exercise held on a district or section-wide basis.

Directed nets are the backbone of the ARES traffic handling operation. Directed nets operate with a Net Control Station (NCS) which maintains order on the net. Stations not directly involved with the operation of a directed net should standby until the net is clear. At no time will a station transmit on a directed net except when called upon by the NCS, when checking in during a non-roll call period or when a station has bona fide emergency or priority traffic.

Most net operations relating to emergencies are "tactical" in nature. They are generally directed nets and messages sent are defined as any exchange that does not utilize an established message format or form. The NTS message format should be used whenever practical. Its use has a long history of reliable and accurate message exchange. ARES members shall be proficient in the handling of ARRL NTS messages. In any case, it is the served agency's needs that will determine what format is to be used for messages in any given situation. Where traffic is classified as 'emergency' it may be passed as a 'tactical' message and without formatting into a radiogram for transmission. A message that is intended for broadcast to all stations with an 'emergency' precedence may be sent as a formal message depending upon the timeliness of the message. An example would be an evacuation order that is sent to all stations, including by packet, to warn of floodwaters rising.

However, the same message should be sent as an all stations 'voice' message if it were for a wildfire, the wind direction had changed and the order is considered for an immediate threat to life and property. When in doubt as to whether a message should be 'priority' or 'emergency', choose the higher precedence. It would be far better to receive a message more quickly than to have it delivered too late.

Without exception, all ARES stations will keep a running log account of their operations. Your log becomes a legal document should an emergency require an after-incident investigation, and it may be considered evidence in court. An operator's log file of an incident should be kept in a safe place for a period of five years. A sample log is included in Appendix E with basic instructions.

Packet stations should retain hard copies of all messages sent and received. The date and time of the message shall serve as their log entries.

All EC's shall file an After Action Report (AAR), with their DEC and SEC, within 72 hours of demobilization from an incident. Each ARES unit involved with an incident should arrange for an operational critique within 48 hours after stand-down from an incident. Bring your log files and notes for discussion. The critique meetings are not for placing blame for problems or singling out anyone for criticism. They serve as a means of discovering what worked and what didn't and to discuss how problems can be avoided in the future. Those who performed their jobs well will also be recognized. At no time is a critique session to be used for disciplinary action of an individual. Personnel problems are the responsibility of the EC and DEC and will be handled directly by them.

It is also recommended that operators become familiar with the MARS (Military Affiliate Radio System) message format so that inbound traffic from a MARS station can be translated in NTS format should that become necessary. MARS messages may be delivered as received by ARES operators. A sample MARS message form is included in Appendix .

Due to the complete rejection of an increased training requirement in Sacramento Valley Section, we will now conform to the basic requirements for Emergency Coordinators as spelled out by ARRL: "Emergency Coordinators are encouraged to earn certification in Level 1 of the ARRL Emergency Communications Course." We will continue to encourage, but not require, ARECC-1 for Emergency Coordinators. There will be no distinction of full or associate membership in ARES based simply on completion of ARECC-1.

Available Courses

ARRL EC-001 – Introduction to Amateur Radio Emergency Communications

ARRL EC-016 - Public Service and Emergency Communications Management for Radio Amateurs

FEMA Courses

IS-100 – Introduction to the Incident Command System

IS-200 – ICS for Single Resources and Initial Action Incidents

IS-700 – National Incident Management System – An introduction

IS-800 – National Response Plan – An introduction

Official Emergency Station

The Official Emergency Station (OES) appointment has been under-used for years. It is the intention of this plan to emphasize the importance of the OES position to the effectiveness of an ARES organization. The basic description for this position is available on the ARRL web site at the following link:

<http://www.arrl.org/fandes/field/org/oes.html>.

The basic requirements for this position are:

“The OES appointee must be an ARRL member and set high standards of emergency preparedness and operating. The OES appointee makes a deeper commitment to the ARES program in terms of functionality than the rank-and-file ARES registrant”.

Appointees for OES participate in the planning, preparation and execution of ARES operations and provide experience and expertise to local and area ARES groups. OES appointments typically associate an ARES member with an agency or task. These associations may include, but are not limited to:

- Area SKYWARN Coordinator
- Training Instructor
- Field Operations Manager
- Resource Management
- Traffic Net Liaison Station

All ARES members are strongly encouraged to provide emergency power capabilities for their stations. While the ability to operate under emergency power is not mandatory, OES stations are expected to set high operating standards for themselves and their stations as an example for other ARES members to follow.

Mutual Assistance/ARESMAT

ARESMAT in Sacramento Valley is comprised of mutual assistance agreements and/or operational plans between ARES groups throughout a District, Section or neighboring Sections. ARESMAT should not be confused with RACES mutual aid agreements, since these agreements must be between the State of California, Emergency Managers and other respective RACES officers.

A RRT (Rapid Response Team) or similar group deployed to another county or ARES group will follow the procedures and operational plans as specified by the host ARES organization. Deployed ARES groups will be governed by the host group's EC.

Deployments of assistance teams should coordinate on the local area repeater, simplex frequencies, or the calling frequency 146.550. The EC for any group that is activated by ARES should notify their respective DEC and/or SEC. Notification puts the Sacramento Valley Section or District on alert to plan for possible ARESMAT requests or communications relay points. In the event of normal communications failures, OES volunteers should be activated and be asked to monitor Sacramento Valley Section HF frequencies. Local plans should have a calling tree and alternate methods to notify ARES leaders and OES stations in the affected area.

Notification outside an area without normal communications or power should follow a pre-determined plan between ARES organization. Such a plan might include: using a mountain top repeater, contacting any available ham operator on HF or linked repeater system to landline Sacramento Valley Section leaders or establish a calling schedule on section HF frequencies. Such a schedule might be to request activation of a "special" Sacramento Valley Section ARES HF net at a predetermined time when there are known communications failures within the section. Normal "chain of command" would be from SEC to DEC to County/Geographical EC to AEC's and the rank-and-file membership.

Appendix A
Emergency Nets

Net Name	Time	Area	Repeaters/Frequencies/Modes
DAILY			
Jefferson Noon Net	1200L	Western US	7204 khz LSB alt 3911 khz

Golden Bear Amateur Radio Net (NTS affiliated)	1900L	Statewide	3975 khz LSB

NorCal Net (NSN)	1900L	Pacific Division	3533 khz CW

NorCal Net 2 (slow speed)	2100L	Pacific Division	3705 khz CW

California Traffic Net	18:30L	Regional	3906 khz LSB

MONDAY			
Shasta/Tehama Net	19:45L	SV Section	3987 khz LSB

TYPES OF EMERGENCY NETS

Tactical Net: The tactical net is the front line employed during an incident, usually used by single government agency to coordinate with Amateur Radio operations within their jurisdiction. There may be several tactical nets in operation for a single incident depending on the volume of traffic and number of agencies involved. Communications include traffic handling, and resource recruiting.

Resource Net: For larger scale incidents, a Resource Net is used to recruit operators and equipment in support of operation on the Tactical Nets. As an incident requires more operators or equipment, the Resource Net evolves as a check-in place for volunteers to register and receive assignment.

Command Net: As the size of an incident increases and more jurisdictions become involved, a Command Net may become necessary. This net allows the incident managers to communicate with each other to resolve inter or intra-agency problems, particularly between cities, or within larger jurisdictional areas. It is conceivable that this net could become cluttered with a high volume of traffic. It may also be necessary to create multiple command nets to promote efficiency.

Open and Closed Nets: A net may operate as an Open or “free form” net, or as a closed net where a net control station is used to control the flow of transmissions on the channel. Typically, when the amount of traffic is low or sporadic a net control isn’t required, and an Open net is used. Stations merely listen before they transmit, when a net is declared a “closed” net, then all transmission must be directed by NCS.

Appendix B

Frequency Plan

Simplex VHF

146.520	National Calling
146.550	Primary Calling
147.420	Red Cross Coordination
147.480	Tahoe Basin Primary
147.510	Tahoe Basin Secondary

VHF Repeater Frequencies

147.240 + pl 123	Tahoe Basin Repeater
146.850 -	Tahoe Basin Repeater

HF

3987 khz LSB	SV Section Primary	Night Time
3980 khz LSB	SV Section Alt	Night Time
3988 khz LSB	SV Section Alt	Night Time
7220 khz LSB	SV Section Primary	Daytime
7224 khz LSB	SV Section Alt	Daytime
14265 khz USB	SV Section Primary	Daytime

Appendix C

RELATED LINKS

www.arrl.org

www.svares.org

www2.arrl.org/sections/sv.html

www.sarcr.org

www.arrl.org/fandes/field/forms

www.arrl.org/fandes/field/nts-msg/pdf/index.html

www.ares-sc.org/nts_ares.html

www.ares-el-dorado-county.org

www.caares.org

www.st-ares.org

<http://w6bml.com>

www.dxzone.com/cgi-bin/dir/jump2/cgi?id=14776

<http://nv.arrl.org>

<http://k6sis.com>

www.emcomm.org

www.wrrl.org

www.qrz.com

www.ysarc.org/ares.html

Appendix D

Packet Radio

As already mentioned, voice modes are ideal for low-precision messages. Digital data modes, on the other hand, facilitate high-precision message transfer. Modes such as packet radio ensure near-perfect accuracy in transmission and reception. And like fax machines, packet has the ability to provide a relatively permanent record of the message for later reference.

The packet mode has another advantage when dealing with information that is in electronic form: there is no need for a conversion step before transmission. This is especially valuable when the information being sent is generated by machine (such as automated weather sensors, GPS receivers, or shelter management computers).

Packet stations are generally self-contained, and if located within line of sight, do not need a central switching system.

Unlike fax machines, packet radio systems are perfect for the distribution of high-precision information to a large number of destinations simultaneously. And the automated retry feature means that several connections can share a single frequency simultaneously, effectively increasing the capacity of the channel.

Among its disadvantages, real-time packet messages require the operator to use a keyboard. This makes the mode unacceptable for low-precision but lengthy messages, such as describing an injury or giving a status report, especially where the operator is not a fast typist. Due to its need for perfect transmission accuracy, it may not be reliable along marginal RF paths. And unlike fax machines, most of today's common packet protocols are inefficient when transferring precision graphics, drawings and all but the rudimentary maps.

Store-and-Forward Systems

Sometimes considered a subset of packet radio, store-and-forward systems (bulletin boards, messaging gateways, electronic mailboxes, etc) can handle non-time-critical messages and reference material, enabling communication in situation where sender and receiver cannot be available simultaneously. These systems also increase the effective capacity of a communication channel by serving as a buffer. When a destination is overloaded with incoming messages, the store-and-forward unit can hold the messages until the receiver is free.

It is important to remember that store-and-forward systems are not limited to digital modes. Voice-answering machines, and even an NTS-like arrangement of liaison stations can function as voice-based store-and-forward systems.

Appendix E

The American Radio Relay League -- National Traffic System Radiogram

Number	Precedence	Handling	Station of Origin	Check
Place of Origin			Time Filed	Date

Address

					5
					10
					15
					20
					25
					30
					35
					40

Signature

<i>Received From</i>	<i>Station</i>	<i>Time</i>	<i>Date</i>	<i>by Operator</i>
<i>Sent or Delivered</i>	<i>Station</i>	<i>Time</i>	<i>Date</i>	<i>by Operator</i>

by K7BFL 9/24/00

The American Radio Relay League -- National Traffic System Radiogram

Number	Precedence	Handling	Station of Origin	Check
Place of Origin			Time Filed	Date

Address

					5
					10
					15
					20
					25
					30
					35
					40

Signature

<i>Received From</i>	<i>Station</i>	<i>Time</i>	<i>Date</i>	<i>by Operator</i>
<i>Sent or Delivered</i>	<i>Station</i>	<i>Time</i>	<i>Date</i>	<i>by Operator</i>

by K7BFL 9/24/00

The American Radio Relay League – National Traffic System Radiogram

Number _____ Precedence _____ Handling _____ Station of Origin _____ Check _____

Place of Origin _____ Time Filed _____ Date _____

Name/Address _____

(Say: "BREAK")

_____	_____	_____	_____	_____	5
_____	_____	_____	_____	_____	10
_____	_____	_____	_____	_____	15
_____	_____	_____	_____	_____	20
_____	_____	_____	_____	_____	25
_____	_____	_____	_____	_____	30
_____	_____	_____	_____	_____	35
_____	_____	_____	_____	_____	40
_____	_____	_____	_____	_____	45
_____	_____	_____	_____	_____	50

(Say- "BREAK")

Signature _____

(Say " BREAK- END OF MESSAGE – REQUEST TIME OF RECEIPT OVER ")

Received From Station _____ Time _____ Date _____ By Operator _____

Sent/Delivered To Station _____ Time _____ Date _____ By Operator _____

By KA4VVA 01 January 2005

THE AMERICAN RADIO RELAY LEAGUE
RADIOGRAM

NUMBER	PRECEDENCE	HR.	STATION OF ORIGIN	CHECK	PLACE OF ORIGIN	TIME FILED	DATE
TO					THIS RADIO MESSAGE WAS RECEIVED AT AMATEUR STATION: _____ TIME: _____ NAME: _____ STREET ADDRESS: _____ CITY, STATE, ZIP: _____		
TELEPHONE NUMBER: _____							
_____ _____ _____ _____ _____							


RECD	FROM	DATE	TIME	SENT	TO	DATE	TIME
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, MESSAGE IS NOT ACCEPTED BY A "MAIL" OPERATOR. A RETURN MESSAGE MAY BE FILED WITH THE "MAIL" DELIVERING THIS MESSAGE TO YOU. FURTHER INFORMATION ON AMATEUR RADIO MAY BE OBTAINED FROM THE HEADQUARTERS, 225 MAIN STREET, NEWINGTON, CT 06111.				THE AMERICAN RADIO RELAY LEAGUE, INC. IS THE NATIONAL REPRESENTATIVE OF LICENSED RADIO AMATEURS AND THE PURPOSE OF OUR EXISTENCE IS TO PROMOTE THE INTERESTS OF THIS SERVICE COMMUNITY ON NATIONAL AND INTERNATIONAL LEVELS. TO THAT END, THE LEAGUE HAS ORGANIZED THE NATIONAL TRAFFIC SYSTEM FOR ONLY TWO DOLLAR ANNUAL MEMBER FEE.			

THE AMERICAN RADIO RELAY LEAGUE
RADIOGRAM

NUMBER	PRECEDENCE	HR.	STATION OF ORIGIN	CHECK	PLACE OF ORIGIN	TIME FILED	DATE
TO					THIS RADIO MESSAGE WAS RECEIVED AT AMATEUR STATION: _____ TIME: _____ NAME: _____ STREET ADDRESS: _____ CITY, STATE, ZIP: _____		
TELEPHONE NUMBER: _____							
_____ _____ _____ _____ _____							

RECD	FROM	DATE	TIME	SENT	TO	DATE	TIME
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, MESSAGE IS NOT ACCEPTED BY A "MAIL" OPERATOR. A RETURN MESSAGE MAY BE FILED WITH THE "MAIL" DELIVERING THIS MESSAGE TO YOU. FURTHER INFORMATION ON AMATEUR RADIO MAY BE OBTAINED FROM THE HEADQUARTERS, 225 MAIN STREET, NEWINGTON, CT 06111.				THE AMERICAN RADIO RELAY LEAGUE, INC. IS THE NATIONAL REPRESENTATIVE OF LICENSED RADIO AMATEURS AND THE PURPOSE OF OUR EXISTENCE IS TO PROMOTE THE INTERESTS OF THIS SERVICE COMMUNITY ON NATIONAL AND INTERNATIONAL LEVELS. TO THAT END, THE LEAGUE HAS ORGANIZED THE NATIONAL TRAFFIC SYSTEM FOR ONLY TWO DOLLAR ANNUAL MEMBER FEE.			

Volunteer Time Sheet

	Amateur Radio Emergency Service	
Volunteer Time Sheet		
Name	Call	Incident
Month/Year		

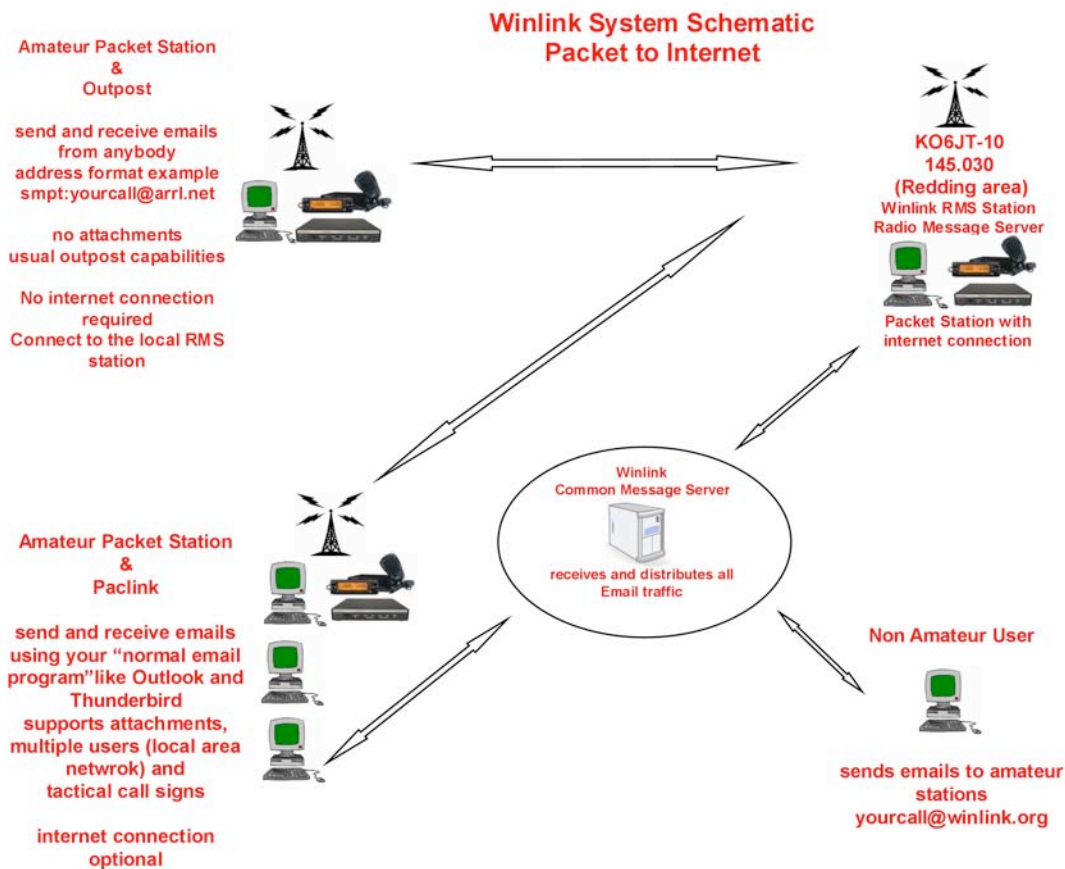
Date	Task/Assignment/Location	Hour START/STOP	Total Hours	Mileage	Expenses	Tactical Call
Totals						

Notes:

Appendix F

Winlink

In very basic terms the Winlink system allows ham radio operators to enter an internet email gateway via radio. The Winlink system can be entered through a variety of modes, frequencies and software. The Winlink system can be useful to ARES and can be setup from very basic cost effective solutions to more complicated but powerful and versatile applications. See vhf packet Winlink configuration below. For frequencies and information see the Winlink website at <http://www.winlink.org/> Winmor and RMS Express are now available to allow computer sound card operation at a lower cost than the expensive SCS Pactor modem.



IRLP

The **Internet Radio Linking Project**, links amateur radio stations around the world use Voice over IP (VoIP) on a network of dedicated servers and nodes offering very stable worldwide voice communications. The aim of this project is to reliably and inexpensively link amateur radio systems without the use of RF links, leased lines, or satellites. The end users communicate using a radio as opposed to a computer. Each gateway consists of dedicated computer running custom software connected to both a radio and the Internet forming what is known as an IRLP Node.

Amateur radio operators within range of a local node use **Dual-tone multi-frequency (DTMF)** to initiate a node-to-node connection with any other available node in the world. Each node has a unique 4 digit node number in the range of 1000-8999. There are currently over 1500 nodes across all 7 continents.

EchoLink

EchoLink is a computer program that runs under Microsoft Windows to allow radio amateurs using low power UHF radios to communicate with one another using Voice over IP (VoIP) technology on the internet for at least part of the path between them. The program allows reliable worldwide connections to be made between stations, from computer to station, or from computer to computer even when weather conditions are not favorable.

Before using the system it is necessary for a prospective user's callsign to be validated. The EchoLink system requires that each new user provide positive proof of license and identity before his or her call sign is added to the list of validated users. There are currently more than 200,000 validated users worldwide – in 162 of the world's 192 nations – with about 4,000 online at any given time.

Appendix G

Acknowledgements

Richard V. Cloyd WO6P for the original plan

Oregon Section ARES/RACES
Operations Manual and Statewide
Communications Plan

Baltimore Traffic Net

Shasta/Tehama Amateur Radio
Service Operations Manual

ARES Communications Guide

Wisconsin ARES/RACES Emergency
Plan

W6MAC

KA7AJQ

K6ME

N6SNO

KG6FFK

and many more

The ARRL Emergency Communication
Handbook

Nevada Section Emergency Plan

NTS Training manual

Red Cross Emergency Communications

Plumas County Emergency Operations
Guide

KJ6C

KQ6YW

WD6FXR

KS6Z

W6RWL