

EPA DISTRICT 2



REFERENCE MANUAL

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Ready-Kits

Basic One Day Ready-Kit

- ARES ID Card
- Copy of FCC License
- 2-Meter HT and Extra Batteries
- 2-Meter Gain Antenna and Coax
- Headphones
- Flashlight and Extra Batteries
- Paper and Pencils
- Message Forms
- Appropriate Clothing
- Food and Water and Snacks
- First Aid Kit
- Cell Phone and Charger

Extended 72 hour Ready-Kit

- Additional Radios, Packet Gear
- Power Supplies, Chargers
- SWR Meter (VHF and HF)
- Extra Coax
- RF Connectors
- Patch Cords
- Spare Fuses
- VOM - Multimeter
- Basic Tools
- Soldering Iron and Solder
- Electrical and Duct Tape
- Electrical Connectors (Anderson PowerPole)
- Personal Toiletry/Hygiene Items
- Personal Prescriptions
- Aspirin, Lozenges, etc.
- Additional Snacks and Drinks
- 3 Day Supply of Non-Perishable Food
- 3 Day Supply of Drinking Water
- 3 Day Change of Clothes
- Foul Weather Gear
- Portable Stove (Sterno)
- Mess Kit and Utensils
- Shelter (Tent and Sleeping bag)
- Candles and Waterproof Matches

Additional Ready-Kit Notes

Power -- Your 72-hour kit should have several sources of power in it, with extra battery packs and an alkaline battery pack for your HT. For mobile VHF and UHF radios, larger batteries are needed. Gel-cell or deep cycle marine batteries would be good sources of battery power, and you must keep them charged and ready to go.

It is also wise to have alternate means available to charge your batteries during the emergency. You can charge smaller batteries from other larger batteries. You can build a solar charging device. And, if you're lucky, you may have access to a power generator that can be used in place of the normal electrical lines. Have more battery capacity than you think you might need. Have several methods available to connect your radios to different power sources.

Gain Antennas -- You can expect to need some kind of gain antenna for your HT, as well as an additional gain antenna that can be used on either your HT or your mobile rig. The extra antenna might be needed by someone else, or your first antenna might break.

For VHF and UHF, you can build a J-pole from a TV twinlead, for an inexpensive and very compact antenna. Have several lengths of coax in your kit, totaling at least 50 feet and with barrel connectors to connect them together.

Personal -- This include staples: water, or a reliable water filtration and purification system; enough food for three days; eating utensils, a drinking cup and, if needed, a means of cooking your food.

Shelter is also important. Here, you are only limited by the size of your kit and the thickness of your wallet. Some hams plan to use their RVs as shelter, conditions permitting. Other disaster conditions may make the use of an RV impossible, so you should have several different plans for shelter.

Light -- This is important psychologically during an emergency. Make sure that you have several light sources available. Various battery-powered lights are available, and propane or gasoline-fueled lanterns are also good possibilities.

ARES/RACES Nets

HF Nets:

Net Type	Freq.	Mode	Day/Time	Description
Eastern Area Net (EAN)	7.24300	LSB	1430 ET	NTS Traffic Net
3rd Region Net (3RN)	7.24300	LSB	1600 ET	NTS Traffic Net
Eastern PA Phone and Traffic Net (EPAEPTN)	3.91700	LSB	1800 ET	NTS Traffic Net
Pennsylvania Phone Net (PFN)	3.95800	LSB	1730 ET	
Eastern PA. Section Net (EPA)	3.61000	CW	1900 ET/ 2200 ET	NTS CW Traffic Net
Penna. Traffic Training Net (PTTN)	3.61000	CW	1830 ET	CW training net for NTS (slow speed Morse)
Western PA Phone and Traffic Net (WPAEPTN)	3.9830 Backup on 7.243 & 1.897	LSB	1800 ET	NTS Traffic Net
Western PA. Section Net (WPA)	3.5850	CW	1900 ET	NTS CW Traffic Net



VHF Nets:

Location	Freq.	PL	Day/Time	Name
Berks County	147.180	110.9	2000 ET Mon.	Berks Ares/Races
Berks County	146.180	110.9	2000 ET Thur.	SkyWarn
Carbon County	147.255 224.260	131.8 ..	2100 ET Wed.	CARC Ares/Races
Lehigh/Northampton Counties	146.700	151.4	1900 ET Wed.	DLARC Ares/Races
Lehigh/Northampton Counties	146.940	71.9	1930 ET Mon.	LVARC Ares/Races
Monroe County	146.865	100.0	2030 ET Sun.	EPARA Ares/Races
Monroe County	147.045	131.8	2030 ET Fri.	EPARA Tech Net
Schuylkill County	145.370	131.8	2000 ET Tue.	Schuylkill County Emergency Service Net

Other Nets:

PEMA/Races	3.9875	LSB	0900 ET Sun.	Eastern PA RACES
PEMA/Races	3.9935	LSB	0830 ET Sun.	Central PA RACES
PEMA/Races	3.9905	LSB	0800 ET Sun.	Western PA RACES
PEMA/RACES	3.9935	LSB	0800 ET 1 st Sun.	Statewide PA ARES
ARES	3.9830 7.2720	LSB		Western PA ARES NET
PEMA/Races	3.9845	LSB		Backup
PEMA/Races	3.9995	LSB		Backup
PEMA/Races	7.2540	LSB		Backup
PEMA/Races	7.2505	LSB		Backup

Radiogram

	THE AMERICAN RADIO RELAY LEAGUE RADIOGRAM VIA AMATEUR RADIO								
NUMBER	PRECEDENCE	HX	STATION OF ORIGIN	CHECK	PLACE OF ORIGIN	TIME FILED	DATE		
To: TELEPHONE NUMBER: _____ _____ _____ _____ _____				THIS RADIO MESSAGE WAS RECEIVED AT: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">AMATEUR STATION: NAME: STREET ADDRESS: CITY, STATE, ZIP:</td> <td style="width: 50%;">DATE:</td> </tr> </table>				AMATEUR STATION: NAME: STREET ADDRESS: CITY, STATE, ZIP:	DATE:
AMATEUR STATION: NAME: STREET ADDRESS: CITY, STATE, ZIP:	DATE:								
SIG:									
REC'D	FROM	DATE	TIME	SENT	TO	DATE	TIME		
A licensed Amateur Radio Operator, whose address is shown above, handled this message free of charge. As such messages are handled solely for the pleasure of operating, a "Ham" Operator can accept no compensation. A return message may be filed with the Ham delivering this message to you. Further information on Amateur Radio may be obtained from ARRL Headquarters, 225, Main Street, Newington, CT 06111.				The American Radio Relay League, Inc. is the National Membership Society of licensed radio amateurs and the publisher of QST Magazine. One of its functions is promotion of public service communication among Amateur Operators. To that end, The League has organized the National Traffic System for daily nationwide message handling.					

Number: This is the station of origins message serial number. Usually starts with "1" for a new Year or Month.

Precedence: This is a code letter that tells how critical a message is and how fast it must be handled: (Routine, Health & Welfare, Priority or Emergency)

Handling Instruction(s): These are optional instructions to the operators regarding special needs in handling the message, using standardized "HX" codes.

Originating Station: Call of the Amateur Radio station that originally creates or writes the original message.

Check: A count of the words and number groups in the message text only. The signature is not counted,

Place of Origin: This is the actual place where the message started from, not necessarily the location of the station of origin. For example, if you send a message for a person in a town that is not your own, you use the person's own town

Time Filed: In 24 hour ZULU time, but is rarely used anymore, except in Emergency Traffic.

Date: Date Message was written – usually just Month and Day, and must be consistent with UTC if UTC used as the time format

Amateur Radiograms should be limited to 25 words or less. They must be noncommercial in nature and thus acceptable from ham radio transmission.

Filling Out The Radiogram

The ARRL Radiogram is used to pass a "Formal" message. The word "Formal" means that the message follows a pre-established form or convention. A formal message contains all the necessary "Recordkeeping" elements that are required to keep a history of the message as it is sent through the NTS., and also to assure that a sender-to-receiver trace can always be done on the message., and consists of four parts:

The **PREAMBLE**: --- This part of the message is the record-keeping part. It is read on the air first from left to right and always in this order. Only the handling instructions and time of the file blocks are optional and may, if not needed, be eliminated by the originating station only.

The **ADDRESS**: --- This part of the message is information about the party to whom the message is being sent. The address consists of the standard three-line postal address, with Zip Code, and a fourth line listing the Addressee's complete phone number. The Zip Code is important if the message will go via Packet at any point, and a complete phone number will save the delivering station time and effort. For messages going to foreign countries, make absolutely sure that the USA has a third-party agreement with the country to which the message is going or can be routed from the USA to a country that does have a third-party agreement with the county of destination.

The **TEXT**: --- The text is what the sender of the message wants to tell the addressee. Good amateur radio texts sound like telegraph messages, are clear and succinct and written in such a way that their meaning cannot be misconstrued or interpreted in more than one way. Good amateur message writing takes practice

Putting a letter-like greeting or closing (Dear Dad, You Son, etc.) into the text is bad form, but if you must, it belongs in the text and is part of the check Spell words that could be misspelled by the receiving station. Don't assume that others know how to spell a particular word. Also spell words that can have more than one spelling.

Use no punctuation in messages, even apostrophes; just spell it out. And separators (periods and dashes) are written as **X's**, and read as "initial X-RAY". But, this is only during transmission on the air – They are not read as "X-Ray" to the final addressee. All Phone numbers in the text are broken up like so: **910 535 5512** and have a check count of three.

Groups of numbers or letters count as one word (e.g. "4683" or "USA" each count as 1 word). ARL numbered texts are spelled out (i.e., ARL FORTY SIX), and if the letter "X" is used to designate periods, then each "X" is counted as a word

The **SIGNATURE**: --- like the address, should be as comprehensive as needed to completely identify the sender to the Addressee. Family members may use single name signatures. For other messages, it is best to use first name and surname both. Closings, like Love, Regards, etc. are ALWAYS a part of the text and not the signature.

A Typical message might read as follows:

NR 12 R W1XDY CK 14 HOMETOWN PA JUL 12

**JOHNNY DIAMOND
1725 PENNYWISE RD
ANYTOWN ME 18951
PHONE 273-555-1212**

**JOHNNY IVE ARRIVED SAFELY
AFTER LONG DRIVE FROM BANGOR
CALL ME 676 888 5151**

LOIS

ARRL Recommended Precedences

Please observe the following ARRL provisions for PRECEDENCES in connection with written message traffic. These provisions are designed to increase the efficiency of our service both in normal times and in 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, this designation will *always* be spelled out. When in doubt, do not use it.

PRIORITY--Use abbreviation P on CW/RTTY. This classification is for a) important messages having a specific time limit b) official messages not covered in the emergency category c) press dispatches and emergency-related traffic not of the *utmost* urgency d) notice of death or injury in a disaster area, personal or official.

WELFARE--This classification, abbreviated as W on CW/RTTY, refers to either an inquiry as to the health and welfare of an individual in the disaster area or an advisory from the disaster area that indicates all is well. Welfare traffic is handled only after all emergency and priority traffic is cleared. The Red Cross equivalent to an incoming Welfare message is DWI (Disaster Welfare Inquiry).

ROUTINE--Most traffic in normal times will bear this designation. In disaster situations, traffic labeled Routine (R on CW/RTTY) should be handled last, or not at all when circuits are busy with higher precedence traffic.

Note--the precedence always follows the message number. For example, a message number may be 207R on CW and "Two Zero Seven Routine" on phone.

Handling Instructions

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

HXB--(Followed by number) Cancel message if not delivered within..X..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.X..(date).

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

ARL Text Abbreviations

These are used to speed up transmission of messages by assigning numbers to commonly used text in the Radiogram, but these numbers are spelled out in the text.

If ARL Text is included in the message, then the "Check" in the Preamble should be preceded by the letters ARL. The letters ARL are also inserted in the text before the spelled out numbers.

Example:

NR 1 R W1AW ARL 5 NEWINGTON CT DEC 25

**DONALD R. SMITH
164 EAST SIXTH AVE
NORTH RIVER CITY MO**

PHONE 273-507-3968

ARL FIFTY ARL SIXTY ONE

DIANA

Group One—For “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 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.

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.

NIMS ICS FORMS

ICS-213 General Message Form

GENERAL MESSAGE		
TO:	POSITION:	
FROM:	POSITION:	
SUBJECT:	DATE:	TIME:
MESSAGE:		
SIGNATURE:	POSITION:	
REPLY:		
DATE:	TIME:	SIGNATURE/POSITION:

ICS 213

ICS-204 Assignment List

1. Incident Name		2. Operational Period (Date/Time) From: _____ To: _____			Assignment List ICS 204-OS	
3. Branch			4. Division/Group			
5. Operations Personnel						
		Name	Affiliation	Contact # (s)		
Operations Section Chief: _____						
Branch Director: _____						
Division/Group Supervisor: _____						
6. Resources Assigned This Period					"X" indicates 204a attachment with special instructions	
Strike Team/Task Force/Resource Identifier	Leader	Contact Info. #	# of Persons	Notes/Remarks		↓
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
7. Assignments						
8. Special Instructions for Division/Group						
9. Communications (radio and/or phone contact numbers needed for this assignment)						
Name/Function		Radio: Freq./System/Channel		Phone	Pager	
_____		_____		_____	_____	
_____		_____		_____	_____	
_____		_____		_____	_____	
Emergency Communications						
Medical _____		Evacuation _____		Other _____		
10. Prepared By (Resource Unit Leader)			Date/Time		11. Approved By (Planning Section Chief)	
ASSIGNMENT LIST			June 2000		ICS 204-OS	

Your Initial Priorities

What to do First in case of an Emergency

Check to make sure that you and your family are safe and secure before you respond as an ARES volunteer.

Check to make sure that your Property is Safe and Secure before you respond as an ARES volunteer.

Monitor your local Repeater Frequency _____

Follow any instructions you receive from ARES officials on the above frequency

Contact your local Emergency Coordinator or His/Her Designee for further Instructions.

If deployed, Notify your Family as to the location you are being assigned to

Initial Check List

The net control station and/or ARES officials on the designated emergency net will provide additional instructions, including information on frequencies used for other resource and tactical nets. Normally, a resource net will enroll volunteers and provide information on how you can assist.

Be prepared to operate. Check all equipment and connections.

Check-in with your assigned contact. Deploy to assignment with "Ready" kit.

Obtain tactical call sign for your location/assignment.

Initiate personal event log.

Enter assigned frequency(s) on log sheet and on emergency/frequency plan.

Use log form to record messages handled.

Use a formal message form when a precise record is required.

Use tactical call sign for your location, while observing FCC's ten-minute ID rule.

Monitor your assigned frequency AT ALL TIMES. Notify NCS if you have to leave.

Types of Emergency Nets

Tactical Net -- The Tactical Net is the front line net employed during an incident, usually used by a 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 operations 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 assignments.

Command Net -- As the size of an incident increases and more jurisdictions become involved in the incident, 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 transmissions must be directed by the NCS.

Principles of Disaster Communications

- 1. Keep the QRM level down.** In a disaster, crucial stations may be weak. All other stations should remain silent unless they are called upon. If you're not sure you should transmit, don't.
- 2. Monitor established disaster frequencies.** Many ARES localities and some geographical areas have established disaster frequencies where someone is always (or nearly always) monitoring for possible calls.
- 3. Avoid spreading rumors.** During and after a disaster situation, especially on the phone bands, you may hear almost anything. Unfortunately, much misinformation is transmitted. Rumors are started by expansion, deletion, amplification or modification of words, exaggeration or interpretation. All addressed transmissions should be officially authenticated as to their source. These transmissions should be repeated word for word, if at all, and only when specifically authorized.
- 4. Authenticate all messages.** Every message which purports to be of an official nature should be written and signed. Whenever possible, amateurs should avoid initiating disaster or emergency traffic themselves. We do the communicating; the agency officials we serve supply the content of the communications.
- 5. Strive for efficiency.** Whatever happens in an emergency, you will find hysteria and some amateurs who are activated by the thought that they must be sleepless heroes. Instead of operating your own station full time at the expense of your health and efficiency, it is much better to serve a shift at one of the best-located and best-equipped stations, suitable for the work at hand, manned by relief shifts of the best-qualified operators. This reduces interference and secures well-operated stations.
- 6. Select the mode and band to suit the need.** It is a characteristic of all amateurs to believe that their favorite mode and band is superior to all others. However, the merits of a particular band or mode in a communications emergency should be evaluated impartially with a view to the appropriate use of bands and modes. There is, of course, no alternative to using what happens to be available, but there are ways to optimize available communications.
- 7. Use all communications channels intelligently.** While the prime object of emergency communications is to save lives and property (anything else is incidental), Amateur Radio is a secondary communications means; normal channels are primary and should be used if available. Emergency channels other than amateur which are available in the absence of amateur channels should be utilized without fear of favoritism in the interest of getting the message through.
- 8. Don't "broadcast."** Some stations in an emergency situation have a tendency to emulate "broadcast" techniques. While it is true that the general public may be listening, our transmissions are not and should not be made for that purpose.
- 9. NTS and ARES leadership coordination.** Within the disaster area itself, the ARES is primarily responsible for emergency communications support. The first priority of those NTS operators who live in or near the disaster area is to make their expertise available to their Emergency Coordinator (EC) where and when needed. For timely and effective response, this means that NTS operators should talk to their ECs before the time of need so that they will know how to best respond.

Understanding ARES® and RACES

ARES® - The Amateur Radio Emergency Service consists of licensed amateurs who have volunteered their qualifications and equipment for communications duty in the public interest when disaster strikes. Every licensed amateur is eligible for membership. The additional requirement of a sincere desire to serve is understood.

There are three levels of the ARES® organization-Section, District and Local. It is at the local level, headed by the Local Emergency Coordinator (E.C.), where most of the organization and operation is affected, because this is the level at which most emergencies occur and the level which ARES leadership makes direct contact with member volunteers and with officials of the agencies to be served.

Special interest groups are headed by Assistant Emergency Coordinators (A.E.C.s) designated by the E.C. to supervise those groups and their local activities.

RACES - Administered by local, county, state Emergency Management Agencies (EMA), with guidance from the Federal Emergency Management Agency (FEMA), it is part of the Amateur Radio Service that provides 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.

Amateurs operating in a local RACES organization must be officially enrolled in the local civil-preparedness group. All of the authorized frequencies and emissions allocated to the Amateur Radio Service are also available to RACES on a shared basis. In the event that the President invokes his War Emergency Powers, amateurs involved in RACES could be limited to specific frequencies while all other amateurs would be silenced.

ARES® and RACES - Although ARES® and RACES are separate entities, the ARRL advocates dual membership and cooperative efforts whenever possible. An ARES® group whose members are all enrolled and certified in RACES can operate in an emergency with greater flexibility. Using the same operators and same frequencies, ARES members, also enrolled in RACES, can "switch hats" from ARES to RACES and back as a situation develops and can do more good for the agencies they serve with a seamless transition. No loss of time or manpower.

FCC Rules: Subpart E--Providing Emergency Communications

§97.401 Operation during a disaster.

(a) When normal communication systems are overloaded, damaged or disrupted because a disaster has occurred, or is likely to occur, in an area where the amateur service is regulated by the FCC, an amateur station may make transmissions necessary to meet essential communication needs and facilitate relief actions.

(b) When normal communication systems are overloaded, damaged or disrupted because a natural disaster has occurred, or is likely to occur, in an area where the amateur service is not regulated by the FCC, a station assisting in meeting essential communication needs and facilitating relief actions may do so only in accord with ITU Resolution No. 640 (Geneva, 1979). The 80 m, 75 m, 40 m, 30 m, 20 m, 17 m, 15 m, 12 m, and 2 m bands may be used for these purposes.

(c) When a disaster disrupts normal communication systems in a particular area, the FCC may declare a temporary state of communication emergency. The declaration will set forth any special conditions and special rules to be observed by stations during the communication emergency. A request for a declaration of a temporary state of emergency should be directed to the EIC in the area concerned.

(d) A station in, or within 92.6 km of, Alaska may transmit emissions J3E and R3E on the channel at 5.1675 MHz for emergency communications. The channel must be shared with stations licensed in the Alaska-private fixed service. The transmitter power must not exceed 150 W.

§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 radiocommunication at its disposal to provide essential communication needs in connection with the immediate safety of human life and immediate protection of property when normal communication systems are not available.

§97.405 Station in distress.

(a) No provision of these rules prevents the use by an amateur station in distress of any means at its disposal to attract attention, make known its condition and location, and obtain assistance. (b) No provision of these rules prevents the use by a station, in the exceptional circumstances described in paragraph (a), of any means of radiocommunications at its disposal to assist a station in distress.

§97.407 Radio amateur civil emergency service.

(a) No station may transmit in RACES unless it is an FCC-licensed primary, club, or military recreation station and it is certified by a civil defense organization as registered with that organization, or it is an FCC-licensed RACES station. No person may be the control operator of a RACES station, or may be the control operator of an amateur station transmitting in RACES unless that person holds a FCC-issued amateur operator license and is certified by a civil defense organization as enrolled in that organization. (b) The frequency bands and segments and emissions authorized to the control operator are available to stations transmitting communications in RACES on a shared basis with the amateur service. In the event of an emergency which necessitates the invoking of the President's War Emergency Powers under the provisions of §706 of the Communications Act of 1934, as amended, 47 U.S.C. §606, RACES stations and amateur stations participating in RACES may only transmit on the following frequencies:

(1) The 1800-1825 kHz, 1975-2000 kHz, 3.50-3.55 MHz, 3.93-3.98 MHz, 3.984-4.000 MHz, 7.079-7.125 MHz, 7.245-7.255 MHz, 10.10-10.15 MHz, 14.047-14.053 MHz, 14.22-14.23 MHz, 14.331-14.350 MHz, 21.047-21.053 MHz, 21.228-21.267 MHz, 28.55-28.75 MHz, 29.237-29.273 MHz, 29.45-29.65 MHz, 50.35-50.75 MHz, 52-54 MHz, 144.50-145.71 MHz, 146-148 MHz, 2390-2450 MHz segments; (2) The 1.25 m, 70 cm and 23 cm bands; and (3) The channels at 3.997 MHz and 53.30 MHz may be used in emergency areas when required to make initial contact with a military unit and for communications with military stations on matters requiring coordination.

- (c) A RACES station may only communicate with:
 - (1) Another RACES station;
 - (2) An amateur station registered with a civil defense organization;
 - (3) A United States Government station authorized by the responsible agency to communicate with RACES stations;
 - (4) A station in a service regulated by the FCC whenever such communication is authorized by the FCC.
- (d) An amateur station registered with a civil defense organization may only communicate with:
 - (1) A RACES station licensed to the civil defense organization with which the amateur station is registered;
 - (2) The following stations upon authorization of the responsible civil defense official for the organization with which the amateur station is registered:
 - (i) A RACES station licensed to another civil defense organization;
 - (ii) An amateur station registered with the same or another civil defense organization;
 - (iii) A United States Government station authorized by the responsible agency to communicate with RACES stations; and
 - (iv) A station in a service regulated by the FCC whenever such communication is authorized by the FCC.
- (e) All communications transmitted in RACES must be specifically authorized by the civil defense organization for the area served. Only civil defense communications of the following types may be transmitted:
 - (1) Messages concerning impending or actual conditions jeopardizing the public safety, or affecting the national defense or security during periods of local, regional, or national civil emergencies;
 - (2) Messages directly concerning the immediate safety of life of individuals, the immediate protection of property, maintenance of law and order, alleviation of human suffering and need, and the combating of armed attack or sabotage;
 - (3) Messages directly concerning the accumulation and dissemination of public information or instructions to the civilian population essential to the activities of the civil defense organization or other authorized governmental or relief agencies; and
 - (4) Communications for RACES training drills and tests necessary to ensure the establishment and maintenance of orderly and efficient operation of the RACES as ordered by the responsible civil defense organizations served. Such drills and tests may not exceed a total time of 1 hour per week. With the approval of the chief officer for emergency planning in the applicable State, Commonwealth, District or territory, however, such tests and drills may be conducted for a period not to exceed 72 hours no more than twice in any calendar year.