# CUMBERLAND COUNTY AMATEUR RADIO EMERGENCY SERVICE

# FIELD RESOURCES MANUAL

## A QUICK TRAINER AND FIELD RESOURCE GUIDE FOR THE EMERGENCY COMMUNICATOR

**Developed by Bryce Rumery, K1GAX, AEC for Operations**

**Introduction**

This manual is intended to be used in conjunction with the *Cumberland County ARES Emergency Communications Plan* and *Cumberland County ARES SOP* as a quick trainer and resource guide for the emergency communicator. It is not intended to be all inclusive. It should be used as a reference by the emergency communicator while deployed. Portions of this manual are taken from the ARRL *ARES Field Resources Manual* (with permission).

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# WHAT TO DO *FIRST* IN AN EMERGENCY

- ☐ **CHECK THAT YOU AND YOUR FAMILY ARE SAFE AND SECURE BEFORE YOU RESPOND AS AN ARES VOLUNTEER.**

- ☐ **CHECK THAT YOUR PROPERTY IS SAFE AND SECURE BEFORE YOU RESPOND AS AN ARES VOLUNTEER.**

- ☐ **MONITOR 147.09 (+) (100.0 Hz) OR IN CASE OF REPEATER FAILURE, 146.415 SIMPLEX.**

- ☐ **FOLLOW THE INSTRUCTIONS YOU RECEIVE FROM THE ARES OFFICIALS IN CHARGE ON THE ABOVE FREQUENCIES.**

- ☐ **CONTACT YOUR LOCAL EMERGENCY COORDINATOR, OR HIS/HER DESIGNEE, FOR FURTHER INSTRUCTIONS.**

# PRE-DEPLOYMENT CHECKLIST

- ☐ **CHECK ALL EQUIPMENT YOU PLAN TO USE, AT LEAST QUARTERLY TO ENSURE OPERABILITY**

- ☐ **ENSURE YOUR "READY KIT" CONTAINS ALL PERSONAL ITEMS YOU WILL NEED**

- ☐ **ADVISE THE CUMBERLAND COUNTY ARES EMERGENCY COORDINATOR OR APPROPRIATE AEC OF ANY CHANGES IN EQUIPMENT OR PERSONAL STATUS (LICENSE UPGRADES, INJURIES, DISABILITIES, ETC.) , AS NECESSARY.**

# INITIAL ACTION CHECKLIST

- ☐ **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 (ICS-214a).**
- ☐ **Enter assigned frequency(s) on log sheet and on emergency/frequency plan.**
- ☐ **Use log form (ICS-309 or 309a) 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 i-d rule.**
- ☐ **Monitor your assigned frequency *at all times*. Notify NCS if you have to leave.**

# BASIC EQUIPMENT FOR DEPLOYMENT

When responding to an emergency event, or even a training exercise, there is a minimum set of equipment and personal gear you should bring with you to get the job done. Basic items include:

**2-METER HT**
**SPARE BATTERIES**
**2-METER MAGMOUNT**
**ANTENNA AND COAX**
**EAR-PHONE**
**CCEMA ARES ID BADGE**
**STATE RESPONDER ID BADGE**
**APPROPRIATE CLOTHING**
**APPROPRIATE FORMS**
**PEN ANDPENCIL**
**FOOD AND WATER**

The majority of these items should be kept in a “Ready Kit.” Just pick it up on your way out the door for deployment. You might also consider the items on the following list for inclusion in this ready kit, designed to allow you to stay in the field for up to 72 hours.

# EXTENDED (72-HOUR) DEPLOYMENT EQUIPMENT CHECKLIST

- Snacks
- Throat lozenges
- Prescriptions
- First aid kit
- Log books
- 3 day change of clothes
- 3 day supply of water and food
- Flashlight
- Candles
- Alarm clock
- Electrical and Duct tape
- Safety glasses
- Additional Radios
- Headphones
- RF Connectors
- Patch cords
- Extra coax
- Liquid refreshments
- Aspirin
- Toilet articles
- Message forms
- Shelter (tent and sleeping bag)
- Foul weather gear
- Portable stove; Mess kit with cleaning kit
- Batteries
- Water proof matches
- Toolbox
- Soldering iron and solder
- VOM
- Microphones
- Power supplies, chargers
- Antennas with mounts
- SWR bridge (VHF and HF).
- ARES Standardized Connectors (Anderson Power Poles)

# ABOUT YOUR "READY" KIT

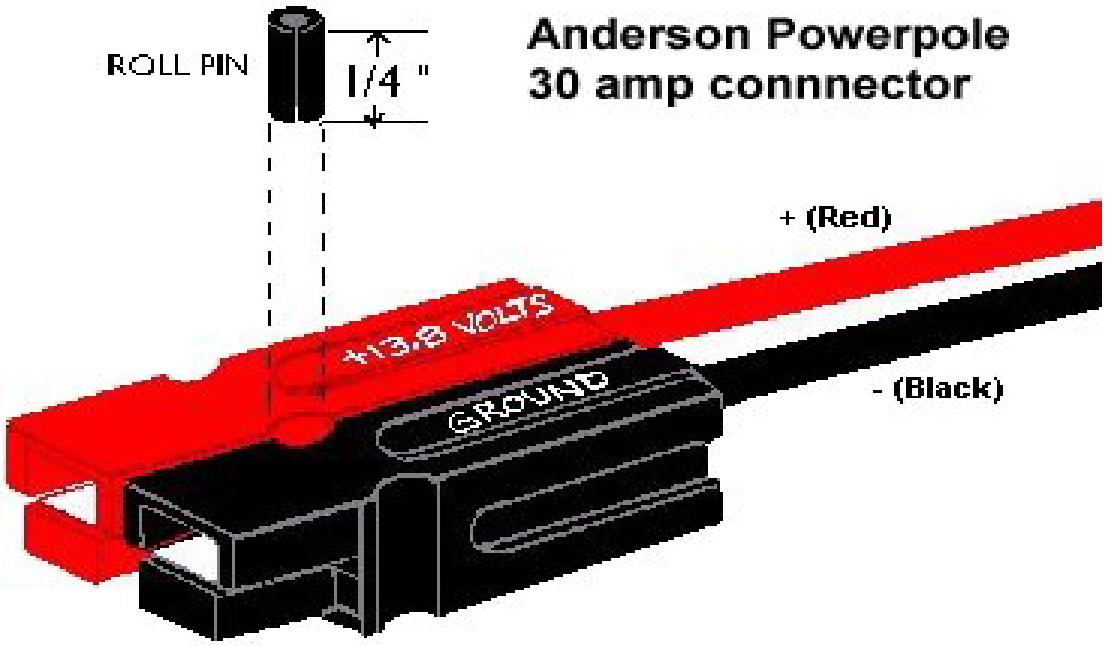
**Power** – Your radio 72-hour kit should have several sources of power in it, with extra battery packs and an alkaline battery pack for your HT. For mobile VHF and UHF radios, larger batteries are needed. Gel-cell or deep cycle marine batteries would be good sources of battery power, and you must keep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

# THE ARES POWER CONNECTOR

It is important that your equipment be easy to use and versatile. At times, you may have to hook your power source to another person's equipment. It is highly recommended that all ARES members use the Anderson Powerpole connector for all sources of DC power. This not only makes hooking your equipment to any ARES power source easy, but also minimizes the possibility of equipment damage. The illustration below shows the Anderson Powerpole connector and their hookup.



# EQUIPMENT MANUALS

**It is highly important that you understand the operations of your equipment! At the same time, you may, at times, loan your equipment to others during emergency and public service events. It is important that those you loan equipment to understand the operation of your equipment. Modern Amateur Radio equipment tends to be a bit more complex than it used to be. Many times, we have our equipment programmed a certain way and we have forgotten how to program a piece of equipment. During an emergency or a public service event is not the time to discover that you've forgotten how to program your equipment. You may not have time to return to your home to get the manual (You do know where your manuals are located, right?). It is highly recommended that you carry a copy of every manual for every piece of equipment that you would use in an emergency or public service event. Notice the word 'copy'. It is not recommended you carry the original manuals with you as they may be lost. The bottom line is *know your equipment!***

# LOCAL EMERGENCY NET INFORMATION

## ARES NET

**SUNDAY 1930L CUMBERLAND COUNTY EMERGENCY NET 147.09 (+) (100.0 Hz)**

## NTS/EMERGENCY SECTION NETS

**SUNDAY 0900L MAINE PUBLIC SERVICE NET 3940 kHz**

**SUNDAY 0945L 12 COUNTY NET 146.88 (-) (100.0 Hz)**

**SUNDAY 1630L MAINE EMERGENCY COMMUNICATIONS NET 3940 kHz**

## NTS LOCAL NET

**SUNDAY 1930L CUMBERLAND COUNTY EMERGENCY NET 147.09 (+) (100.0 Hz)**

# ARRL SECTION/DISTRICT/COUNTY ARES EMERGENCY COORDINATORS

## CUMBERLAND COUNTY EMERGENCY COORDINATOR

**Ron Brown, WA1RB**
**31 Beech Ridge Rd**
**Scarborough, ME 04074**
**(207) 450-2249 (h)**
**(207) 662-6630 (w)**
**(207) 450-2249 (Cell)**
**Email: wa1rb@rfburn.org**

## CUMBERLAND COUNTY ASSISTANT EMERGENCY COORDINATOR FOR OPERATIONS

**(Fills in for WA1RB when he is not available)**

**Bryce Rumery, K1GAX**
**75 Ocean House Rd**
**Cape Elizabeth, ME 04107**
**(207) 799-1116 (H)**
**(207) 632-1284 (Cell)**
**Email: k1gax@juno.com**

## MAINE DISTRICT 1 DISTRICT EMERGENCY COORDINATOR

**John Goran K1JJS**
**74 Webster Rd**
**Freeport, ME 04032-6228**
**(207) 865-0554 (H)**
**(207) 725-0614 (W)**
**(207) 232-4892 (Cell)**
**Email: johnmgoran1@suscom-maine.net**

## MAINE ARES SECTION EMERGENCY COORDINATOR

**Bryce Rumery, K1GAX**
**75 Ocean House Rd**
**Cape Elizabeth, ME 04107**
**(207) 799-1116 (H)**
**(207) 632-1284 (Cell)**
**Email: k1gax@juno.com**

# CUMBERLAND COUNTY ARES FREQUENCIES

| CHANNEL | FUNCTION | FREQUENCY | ASSIGNMENT | REMARKS |
|---|---|---|---|---|
| AH01 | STATEWIDE COORDINATION | 3940 kHz | COMMUNICATIONS CENTER | STATEWIDE HF (NIGHT) PRIMARY |
| AH02 | STATEWIDE COORDATION | 7262 kHz | COMMUNICATIONS CENTER | STATEWIDE HF (DAY) SECONDARY |
| AH03 | LOCAL COORDINATION | 28.450 MHz | TACTICAL NET | LOCAL COORD./TACTICAL NET (USB) |
| AH04 | LOCAL COORDINATION | 29.650 MHz | TACTICAL NET | LOCAL COORD./TACTICAL NET (FM SIMPLEX) |
| AV01 | STATEWIDE COORDINATION | 52.525 MHz | STATEWIDE COORDINATION | 6 METER (FM SIMPLEX) |
| AV02 | LOCAL COORDINATION | 52.565 MHz | TACTICAL NET | LOCAL COORD./TACTICAL NET (FM SIMPLEX) |
| AV03 | LOCAL COORDINATION | 53.570 MHz | TACTICAL NET | (FM REPEATER) (-1 MHz), (103.5 Hz CTCSS) |
| AV04 | PRIMARY TACTICAL SIMPLEX | 146.415 MHz | TACTICAL NET | LOCAL PRIMARY SIMPLEX NET (FM SIMPLEX) |
| AV05 | INTER-COUNTY COORDINATION | 146.520 MHz | COMMUNICATIONS CENTER | (FM SIMPLEX) |
| AV06 | ADMINISTRATIVE / COMMAND | 146.535 MHz | ADMINISTRATIVE / COMMAND NET | (FM SIMPLEX) |
| AV07 | TACTICAL REPEATER | 146.730 MHz | TACTICAL NET | (FM REPEATER) (-600 KHz), (100.0 Hz CTCSS) |
| AV08 | STATEWIDE COORDINATION | 146.880 MHz | COMMUNICATIONS CENTER | (FM REPEATER) (-600 kHz), (100.0 Hz CTCSS) |
| AV09 | PRIMARY TACTICAL REPEATER | 147.090 MHz | PRIMARY TACTICAL NET | (FM REPEATER) (+600 kHz), (100.0 Hz CTCSS) |
| AV10 | ADMINISTRATIVE / COMMAND | 147.360 MHz | ADMINISTRATIVE / COMMAND | (FM REPEATER) (+600 kHz), (100.0 Hz CTCSS) |
| AV11 | ADMINISTRATIVE / COMMAND NET | 147.525 MHz | ADMINISTRATIVE / COMMAND NET | (FM SIMPLEX) |
| AV12 | PORTABLE REPEATER | 147.550 MHz | TACTICAL NET | (FM REPEATER) (-3 MHz), (100.0 Hz CTCSS) |
| AV13 | TACTICAL NET | 223.440 MHz | TACTICAL NET | (FM SIMPLEX) |

| CHANNEL | FUNCTION | FREQUENCY | ASSIGNMENT | REMARKS |
|---|---|---|---|---|
| AV14 | INTER-COUNTY COORDINATION | 223.500 MHz | COMMUNICATIONS CENTER | (FM SIMPLEX) |
| AV15 | TACTICAL REPEATER | 224.840 MHz | TACTICAL NET | (FM REPEATER) (-1.6 kHz), (103.5 Hz CTCSS) |
| AU01 | TACTICAL REPEATER | 444.100 MHz | TACTICAL NET | (FM REPEATER) (+5 MHz), (82.5 Hz CTCSS) |
| AU02 | TACTICAL REPEATER | 444.250 MHz | TACTICAL NET | (FM REPEATER) (+5 MHz), (82.5 CTCSS) |
| AU03 | INTER-COUNTY COORDINATION | 446.000 MHz | COMMUNICATIONS CENTER | (FM SIMPLEX) |
| AU04 | TACTICAL NET | 446.075 MHz | TACTICAL NET | (FM SIMPLEX) |
| AS01 | TACTICAL NET | 1294.525 MHz | TACTICAL NET | (FM SIMPLEX) |
| AA01 | LOCAL OPERATOR / CLIENT LIAISON | 27.065 MHz | COMMAND POST / LOCAL OPERATOR | CB CH. 9 EMERGENCY USE ONLY (AM) |
| AA02 | LOCAL OPERATOR / CLIENT LIAISON | 27.185 MHz | COMMAND POST / LOCAL OPERATOR | CB CH, 19 TRANSPORTATION (AM) |
| AA03 | LOCAL OPERATOR / CLIENT LIAISON | 154.600 MHz | COMMAND POST / LOCAL OPERATOR | MURS CHANNEL 5 (FM SIMPLEX) |
| AA04 | LOCAL OPERATOR / CLIENT LIAISON | 462.6125 MHz | COMMAND POST / LOCAL OPERATOR | FRS CHANNEL 5 (FM SIMPLEX) |
| AA05 | LOCAL OPERATOR / CLIENT LIAISON | 462.6625 MHz | COMMAND POST / LOCAL OPERATOR | FRS CHANNEL 5 (FM SIMPLEX) |
| AA06 | LOCAL OPERATOR / CLIENT LIAISON | 462.7125 MHz | COMMAND POST / LOCAL OPERATOR | FRS CHANNEL 7 (FM SIMPLEX) |

# CUMBERLAND COUNTY REPEATER DIRECTORY

| Frequency | Location | Offset | Tone | Link | Comments |
|---|---|---|---|---|---|
| 29.680 | Windham Hill | Minus | 173.8 | | |
| 53.570 | Portland | Minus | 136.5 | H | Currently Off Air |
| 146.730 | Windham | Minus | 100.0 | | Local Coverage |
| 146.940 | Yarmouth | Minus | | | Local Coverage |
| 147.045 | Gray | Plus | 107.2 | | |
| 147.090 | Falmouth | Plus | 100.0 | | |
| 147.135 | Brunswick | Plus | 103.5 | C | |
| 147.210 | Brunswick | Plus | 100.0 | | |
| 147.360 | Portland | Plus | 100.0 | | |
| 223.780 | Falmouth | Minus | 103.5 | | Closed Repeater |
| 444.100 | Scarborough | Plus | 82.5 | | Local Coverage |
| 444.250 | Westbrook | Plus | 82.5 | | Closed Repeater |
| 444.400 | Brunswick | Plus | 88.5 | | |
| 444.950 | Windham Hill | Plus | 146.2 | | |
| 447.575 | Brunswick | Minus | | | Analog and Dstar |
| 927.638 | Portland | Minus | 131.8 | | In 902.6375 |
| 1,284.000 | Brunswick | Minus | 88.5 | | |

# CUMBERLAND COUNTY TELEPHONE NUMBERS

| AGENCY/CITY/TOWN | FIRE | POLICE | EMS | EMA |
|---|---|---|---|---|
| Bridgton | 647-3663 | 647-8814 | 647-3663 | 647-2231 |
| Brunswick | 725-5521 | 725-5521 | 725-5521 | |
| Cape Elizabeth | 799-8581 | 799-8581 | 799-8581 | 799-7863 |
| Chebeague Island | 829-5211 | 829-3120 | 829-5211 | |
| Chicopee | 642-3059 | 642-3059 | 642-3059 | |
| Cumberland | 829-5211 | 829-3120 | 829-5211 | |
| East Baldwin | 787-2484 | 1-800-501-1111 | 625-8111 | |
| Falmouth | 781-4242 | 781-4242 | 781-4242 | |
| Freeport | 865-4211 | 865-4212 | 865-4211 | |
| Gorham | 839-5555 | 839-5555 | 839-5555 | |
| Gray | 657-3331 | 1-800-501-1111 | 657-3911 | |
| Harpswell | 729-8000 | 729-8000 | 729-8000 | |
| Limington | 637-1234 | 637-1234 | 637-1234 | |
| Long Island | 766-5551 | 774-1444 | 766-5551 | |
| New Gloucester | 926-4141 | 926-4463 | 926-4141 | |
| North Baldwin | 787-2674 | 1-800-501-1111 | 625-8111 | |
| North Yarmouth | 829-5212 | 774-1444 | 829-5212 | |
| Peaks Island | 766-4411 | 766-4411 | | |
| Portland | 874-8400 | 874-8300 | 874-8400 | |
| Pownal | 688-4411 | 774-1444 | 688-4411 | |
| Scarborough | 883-5116 | 883-5116 | 883-5116 | 883-6616 |
| Sebago | 787-3434 | 1-800-501-1111 | 787-3434 | |
| South Portland | 799-3311 | 799-3311 | 799-3311 | 799-3311 |
| Standish | 642-2232 | 1-800-501-1111 | 642-2232 | |
| Steep Falls | 642-2232 | 1-800-501-1111 | 642-2232 | |
| Westbrook | 854-2534 | 854-2531 | 854-1800 | 854-9105 |
| Windham | 892-1000 | 892-1000 | 892-1000 | |
| Yarmouth | 846-3333 | 846-3333 | 846-3333 | |

| AGENCY | EMERGENCY NUMBER |
|---|---|
| American Red Cross | 874-1192 |
| American Red Cross NNE Field Services | 874-1195 |
| Brighton Medical Center | 879-8111 |
| Chemtrec | 1-800-424-9300 |
| Coast Guard SAR Emergency | 799-1680 |
| Cumberland County EMA | 892-6785 |
| Cumberland County Sheriff | 774-1444 (1-800-501-1111) |
| FBI | 774-9322 |
| Maine Medical Center | 871-2381 |
| Maine Medical Center Poison Control Center | 871-4720 |
| Maine Turnpike Authority Road Conditions | 871-7740 |
| Mercy Hospital | 879-3266 |
| National Weather Service | 773-0352 (1-800-482-0913) |
| National Weather Service Recording | 775-7781 |
| Salvation Army | 774-6304 |
| State Police | 1-800-482-6305 (1-800-228-0857) |
| U.S. Marshals | 780-3355 |

# SAFETY

***SAFETY IS OF THE UTMOST IMPORTANCE AT ALL TIMES, IN ALL ACTIVITIES!***

**THE SAFETY PRIORITIES ARE:**

1. **YOURSELF**
2. **YOUR TEAM**
3. **YOUR MISSION**

**IF, AT ANY TIME, YOU FEEL THAT YOUR PERSONAL SAFETY IS JEOPARDIZED IN ANY WAY, LEAVE THE AREA, NOTIFY THE NET CONTROL STATION (NCS), ADVISE THEM OF YOUR ACTION AND EXPLAIN THE SITUATION.**

**IF YOU ARE ASKED BY A PUBLIC SAFETY AUTHORITY TO CEASE TRANSMITTING OR TO TURN OFF YOUR RADIO; DO SO IMMEDIATELY AND WITHOUT QUESTION.**

**BE SAFE IN ALL OF YOUR ACTIONS!**

**DO NOT TAKE CHANCES. AS A COMMUNICATOR, YOU ARE NOT "PAID" TO TAKE CHANCES!**

**ALWAYS ADVISE THE NCS OF ANY DANGEROUS SITUATION.**

**IF NECESSARY, ADVISE THE APPROPRIATE AUTHORITIES OF THE SITUATION.**

**IF DEPLOYED, ALWAYS EVALUATE THE SITUATION AROUND YOU. ALWAYS HAVE A WAY OUT. DON'T ALLOW YOURSELF TO BE TRAPPED. EVACUATE BEFORE THE SITUATION BECOMES DANGEROUS.**

**ALWAYS SEEK MEDICAL HELP WHEN YOU ARE INJURED IN ANY WAY. DO NOT 'SHAKE OFF' INJURIES.**

***THE BOTTOM LINE IS NEVER, AT ANY TIME, PUT YOURSELF OR OTHERS IN DANGER!***

# INCIDENT COMMAND SYSTEM (ICS)

The Incident Command System (ICS) is a management tool that is rapidly becoming adopted by professional emergency responders throughout the country. ICS provides a coordinated system of command, communications, organization, and accountability in managing emergency events. Due to the wide spread use of ICS, Amateur Radio operators should be familiar with the system, as well as how they will interface with agencies employing ICS.

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

How does the Amateur Radio volunteer fit into the Incident Command System? We are expected to be communicators, and within the ICS, this would place us in the Logistics Section in the Service Branch as part of the Communications Unit. The communications unit provides all communications services for the operation.

# HAZMAT INCIDENTS

The term “hazardous materials” (HAZMAT) refers to any substances or materials which, if released in an uncontrolled manner (e.g., spilled), can be harmful to people, animals, crops, water systems, or other elements of the environment. The list is long and includes explosives, gasses, flammable and combustible liquids, flammable solids or substances, oxidizing substances, poisonous and infectious substances, radioactive materials and corrosives.

One of the major problems is to determine what chemicals are where and in what quantities. Various organizations in the U.S. have established or defined classes or lists of hazardous materials for regulatory purposes or for the purpose of providing rapid indication of the hazards associated with individual substances. As the primary regulatory agency concerned with the safe transportation of such materials in interstate commerce, the U.S. Department of Transportation (DOT) has established definitions of various classes of hazardous materials, established placarding and marking requirements for containers and packages, and adopted an international cargo commodity numbering system.

The DOT requires that all freight containers, trucks and rail cars transporting these materials display placards identifying the hazard class or classes of the materials they are carrying. The placards are diamond shaped, 10 inches on a side, color coded and show an icon or graphic symbol depicting the hazard class. They are displayed on the ends and sides of transport vehicles. A four digit identification number may be displayed on the placard or on an adjacent rectangular orange panel. If you have spent time on the roads you have undoubtedly seen these placards displayed on trucks and railroad tank cars. You may recognize some of the more common ones, such as 1993, which covers a multitude of chemicals including road tar, cosmetics, diesel fuel and home heating oil. Or you may have seen tankers placarded 1203 filling the underground tanks at the local gasoline station.

In addition to the placards, warning labels must be displayed on most packages containing hazardous materials. The labels are smaller versions of the placards (4 inches on a side). In some cases, more than one label must be displayed, in which case the labels must be placed next to each other. In addition to labels for each

of the DOT hazard classes other labels with specific warning messages may be required. Individual containers also have to be accompanied by shipping papers (if you can safely get close enough!) which contain the proper shipping name, the four digit ID number and other important information about the hazards of the material.

Details of the placards and emergency response procedures can be found in the comprehensive DOT *Emergency Response Guidebook*, copies of which may be available for review at your local EMA, police, sheriff or fire department.

## HAZMAT INCIDENT GUIDELINES

**1. Approach the scene cautiously - from uphill and upwind. If you have binoculars, use them!**

**2. Try to identify the material by any *one* of the following:**

- **The four digit number on a placard or orange panel**
- **The four digit number (preceded by the initials "UN/NA") on a shipping paper or package**
- **The name of the material on the shipping paper, placard or package**

**3. Call for help immediately and let the experts handle the situation. Do not attempt to take action beyond your level of training. Know what you are capable of doing.**

# PRINCIPLES OF REPEATER OPERATION

**1. Use minimum power. Otherwise, especially in heavily populated areas, you may run the risk of keying more than one repeater, thus causing unnecessary QRM. Low power also conserves batteries.**

**2. Use simplex, whenever possible. ARRL recommends 146.52 MHz, but it's a good idea to have at least one other simplex channel available. Use a gain antenna at fixed locations for simplex operation.**

**3. Observe the "pause" procedure between exchanges. When it is your turn to transmit, after the transmitting station stands by, count to two or three before pressing your transmit switch.**

**4. Listen much, transmit little. Announce your presence on a repeater when you are certain of being able to assist in an emergency, and don't tie it up with idle chatter.**

**5. Monitor local ARES net frequency, when otherwise not busy.**

**6. Think before you talk. Anyone with an inexpensive public-service-band receiver can monitor. Stick to facts, control your emotions. Remember, during an emergency is the time when you are most apt to act and speak rashly.**

**7. Articulate, don't slur. Speak close to your mike, but talk across it, not into it. Keep your voice down. In an emergency situation one often gets excited and tends to shout. Talk slowly, calmly--this is the mark of an experienced communicator.**

# PRINCIPLES OF DISASTER COMMUNICATION

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.

## APPENDIX 1

# FCC RULES

### §97.119 Station identification.

(a) Each amateur station, except a space station or telecommand station, must transmit its assigned call sign on its transmitting channel at the end of each communication, and at least every ten minutes during a communication, for the purpose of clearly making the source of the transmissions from the station known to those receiving the transmissions. No station may transmit unidentified communications or signals, or transmit as the station call sign, any call sign not authorized to the station.

### §97.401 Operation during a disaster.

A station in, or within 92.6 km (50 nautical miles) of, Alaska may transmit emissions J3E and R3E on the channel at 5.1675 MHz (assigned frequency 5.1689 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 PEP. A station in, or within 92.6 km of, Alaska may transmit communications for tests and training drills necessary to ensure the establishment, operation, and maintenance of emergency communication systems.

### §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.

## Appendix 2

# FORMS

**The following pages contain the basic forms used by Cumberland County ARES for communications.**

| 1. Incident Name | 2. Operational Period (Date / Time)<br>From: To: | INDIVIDUAL LOG<br>ICS 214a-OS |
|---|---|---|

| 3. Individual Name | 4. ICS Section | 5. Assignment / Location |
|---|---|---|
| | | |

| 6. Activity Log | Page of |
|---|---|

| Time | Major Events |
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| 7. Prepared by: | Date / Time |
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**INDIVIDUAL LOG (ICS FORM 214a-OS)**

**Special Note.** This optional ICS form 214a-OS is a log for individual use, and ICS form 214-OS is designed to log activities for an entire unit.

**Purpose.** The Individual Log, while not required, records details of each individual's activities. These logs provide a basic reference from which to extract information for inclusion in any after-action report.

**Preparation.** An Individual Log can be initiated and maintained by each member of the ICS. Completed logs are forwarded to supervisors who provide copies to the Documentation Unit.

**Distribution.** The Documentation Unit maintains a file of all Individual Logs. The original of each log MUST be submitted to the Documentation Unit.

| Item # | Item Title | Instructions |
|---|---|---|
| 1. | Incident Name | Enter the name assigned to the incident. |
| 2. | Operational Period | Enter the time interval for which the form applies. Record the start and end date and time. |
| 3. | Individual Name | Enter the name of the individual. |
| 4. | ICS Section | Enter the ICS Section to which the individual is assigned. |
| 5. | Assignment/Location | Enter the assignment or location for the individual. |
| 6. | Activity Log | Enter the time and briefly describe each significant occurrence or event (e.g., task assignments, task completions, injuries, difficulties encountered, etc.) |
| 7. | Prepared By | Enter name and title of the person completing the log. Provide log to immediate supervisor, at the end of each operational period. |
| | Date/Time | Enter date (month, day, year) and time prepared (24-hour clock). |

| 1. Incident Name | 2. Operational Period (Date / Time)<br>From: To: | UNIT LOG<br>ICS 214-OS |
|---|---|---|

| 3. Unit Name / Designators | 4. Unit Leader (Name and ICS Position) |
|---|---|
| | |

**5. Personnel Assigned**

| NAME | ICS POSITION | HOME BASE |
|---|---|---|
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**6. Activity Log (Continue on Reverse)**

| TIME | MAJOR EVENTS |
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**7. Prepared by:** **Date / Time**



Electronic version: NOAA 1.0 June 1, 2000

| 1. Incident Name | 2. Operational Period (Date / Time)<br>From: To: | UNIT LOG (CONT.)<br>ICS 214-OS |
|---|---|---|

**6. Activity Log (Continuation Sheet)**

| TIME | MAJOR EVENTS |
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**7. Prepared by:** **Date / Time**

**UNIT LOG (ICS FORM 214-OS)**

**Special Note.** ICS Form 214-OS is used to log activities for an entire unit, whereas the ICS form 214a-OS is designed for individual use.

**Purpose.** The Unit Log records details of unit activity, including strike team activity. These logs provide the basic reference from which to extract information for inclusion in any after-action report.

**Preparation.** A Unit Log is initiated and maintained by Command Staff members, Division/Group Supervisors, Air Operations Groups, Strike Team/Task Force Leaders, and Unit Leaders. Completed logs are submitted to supervisors who forward them to the Documentation Unit.

**Distribution.** The Documentation Unit maintains a file of all Unit Logs. All completed original forms MUST be given to the Documentation Unit.

| Item # | Item Title | Instructions |
|---|---|---|
| 1. | Incident Name | Enter the name assigned to the incident. |
| 2. | Operational Period | Enter the time interval for which the form applies. Record the start and end date and time. |
| 3. | Unit Name/Designators | Enter the title of the organizational unit or resource designator (e.g., Facilities Unit, Safety Officer, Strike Team). |
| 4. | Unit Leader | Enter the name and ICS Position of the individual in charge of the Unit. |
| 5. | Personnel Assigned | List the name, position, and home base of each member assigned to the unit during the operational period. |
| 6. | Activity Log | Enter the time and briefly describe each significant occurrence or event (e.g., task assignments, task completions, injuries, difficulties encountered, etc.) |
| 7. | Prepared By | Enter name and title of the person completing the log. Provide log to immediate supervisor, at the end of each operational period. |
| | Date/Time | Enter date (month, day, year) and time prepared (24-hour clock). |

| RADIO LOG | 1. INCIDENT NAME | 2. DATE | 3. INCIDENT NUMBER |
|---|---|---|---|
| 4. OPERATOR LOCATION | | 5. FREQUENCY | |

| TIME□<br>24 HOUR FORMAT | TO | FROM | MESAGE (SUBJECT) |
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| PAGE ____ OF ____ | 6. LOG PREPARED BY | 7. RADIO OPERATOR |
|---|---|---|

**ICS-309A**

| 1. Incident Name | 2. Date and Time of Message | GENERAL MESSAGE<br>ICS 213-OS |
|---|---|---|

| 3. TO: | ICS Position |
|---|---|

| 4. FROM: | ICS Position |
|---|---|

| 5. Subject: |
|---|

| 6. Message |
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| 7. Reply |
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| 8. Signature / Position (person replying) | Date / Time of reply |
|---|---|



Electronic version: NOAA 1.0 June 1, 2000

**General Message (ICS FORM 213-OS)**

**Purpose.** The General Message is used by:
Incident personnel to record incoming messages which cannot be orally transmitted to the intended recipients;
Command Post and other incident personnel to transmit messages to the Incident Communications Center for transmission via radio or telephone to the addressee;
Incident personnel to send any message or notification to incident personnel which requires a hard-copy delivery;
Incident personnel to place resource orders.

**Preparation.** This form is prepared by any incident personnel needing to transmit a hard-copy message. The recipient should send a timely reply to the originator, as necessary.

**Distribution.** Upon completion, the General Message may be hand-carried to the addressee or to the incident Communications Center for transmission. Originator retains a copy of the form. All completed original forms MUST be given to the Documentation Unit.

| Item # | Item Title | Instructions |
|---|---|---|
| 1. | Incident Name | Enter the name assigned to the incident. |
| 2. | Date and Time of Message | Enter the date and time of message origination. |
| 3. | To | Enter name and ICS position of message recipient. |
| 4. | From | Enter name and ICS position of message sender. |
| 5. | Subject | Indicate the message subject. |
| 6. | Message | Enter message. |
| 7. | Reply | This section to be used by the unit/person who receives the message to reply to your message. |
| 8. | Signature/Position<br>Date/Time of reply | Enter name and position of person replying to this message.<br>Enter date (month, day, year) and time of reply (24-hour clock). |

# 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_____ Date_____
Name_____
Street Address_____
City, State, Zip_____

Telephone Number:

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

| From | Date | Time | To | Date | Time |
|---|---|---|---|---|---|
| REC'D | | | SENT | | |

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.


# 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_____ Date_____
Name_____
Street Address_____
City, State, Zip_____

Telephone Number:

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

| From | Date | Time | To | Date | Time |
|---|---|---|---|---|---|
| REC'D | | | SENT | | |

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.

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## Radiogram Instructions

## Every formal radiogram message originated and handled should contain the following components in the order given.

| **I PREAMBLE**<br>a. Number (begin with 1 each month or year)<br>b. Precedence (R, W, P or EMERGENCY)<br>c. Handling Instructions (optional)<br>d. Station of Origin (first amateur handler)<br>e. Check (number of words/groups in text only)<br>f. Place of origin (not necessarily location of station of<br>origin)<br>g. Time Filed (optional with originating station)<br>h. Date (must agree with date of time filed)<br><br>**II ADDRESS** (as complete as possible, include zip and telephone)<br><br>**III TEXT** (limit to 25 words or less, if possible)<br><br>**IV SIGNATURE** | **MESSAGE EXAMPLE**<br><br>**I 1 R HXG W1AW 8 NEWINGTON CT 1830Z JULY 1**<br>***a b c d e f g h***<br><br>**II DONALD SMITH**<br>**164 EAST SIXTH AVE**<br>**NORTH RIVER CITY MO 00789**<br>**733 4968**<br><br>**III HAPPY BIRTHDAY X SEE YOU SOON X LOVE**<br><br>**IV DIANA**<br><br>Note that X, when used in the text as punctuation, counts as a word. |
|---|---|

## ARRL Message Precedences

**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 to stricken populace in emergency areas. On CW, RTTY, AMTOR and packet this designation will always be spelled out. When in doubt, do not use this designation.

**PRIORITY**--Use abbreviation P on CW, RTTY, AMTOR and packet. This classification is for important messages having a specific time limit, official messages not covered in the emergency category, press dispatches and emergency-related traffic not of the utmost urgency.

**WELFARE**--This classification, abbreviated as W on CW, RTTY, AMTOR and packet, 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, AMTOR and packet) should be handled last, or not at all when circuits are busy with higher-precedence traffic.

## Handling Instructions

| PROSIGN | INSTRUCTION |
|---|---|
| **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 addressee, 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. |

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AMATEUR RADIO
CUMBERLAND
COUNTY
EMERGENCY SERVICE