Amateur Radio Emergency Services

ARES Field Resources Manual - Part II

A Quick Trainer and Field Resource Guide for the Emergency Communicator

What We Will Covered Last Time

First Things First

Equipment and Personal Checklists

Basic Emergency Program Information

- Amateur Radio Emergency Service (ARES)
- National Traffic System (NTS)
- Radio Amateur Civil Emergency Service (RACES)
- Incident Command System (ICS)
- National Incident Management System (NIMS)

What We Will Cover Tonight

Hazardous Material Incident

Deployments Basic Operating Principles

Message Formats

Local Net/Contact Information

Section ARES Map

Section Emergency Plan

Operating Aids

Hurricane Information

Hazardous Materials Incident

HAZMAT Incident

One of the major problems is to determine what chemicals are where and in what quantities. As the primary regulatory agency concerned with the safe transportation of such materials in interstate commerce, the US 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.

HAZMAT Incident

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.

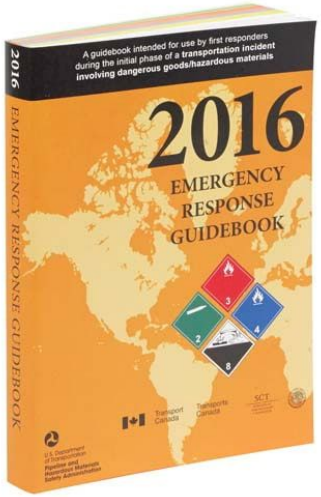
HAZMAT Incident

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. 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.

HAZMAT Incident

Details of the placards and emergency response procedures can be found in the comprehensive **DOT Emergency Response Guidebook**, copies of which may be available at Station 720. For more information about hazardous materials in general, contact FEMA, online at www.fema.gov/rrr/carep.shtm

More information is also available from the Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Hazardous Materials Safety, online at hazmat.dot.gov



HAZMAT Incident

But Wait! There's more! Ed says there's an App for that!

For iOS: **ERG 2016** By National Library of Medicine

https://itunes.apple.com/us/app/erg-2016/id592158838?mt=8

For Android: **ERG 2016**

https://play.google.com/store/apps/details?id=gov.nih.nlm.erg2012&hl=en

HAZMAT Incident

And if you act now, Clifford says you can download a free PDF of the Guidebook from here:

https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/docs/ERG2016.pdf

But don’t wait too long! Copies are limited!

HAZMAT Incident Guidelines

- Approach the scene cautiously—from uphill and upwind. If you have binoculars, use them!
- 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.
- Call for help immediately and let the experts handle the situation. Do not attempt to take any action beyond your level of training. Know what you are capable of doing.

Deployments -
Basic Operating Principles

Principles of Repeater Operation

1. **Use minimum power.** Otherwise, especially in heavily populated areas, you run the risk of keying more than one repeater, thus causing unnecessary interference. 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. This gives others with urgent traffic a chance to check in.

Principles of Repeater Operation

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 your local ARES net frequency** when you are not otherwise busy.
6. **Think before you talk.** Stick to facts, control your emotions. Remember, during an emergency is the time when you are most apt to act and speak rashly. Anyone with an inexpensive public service band receiver can monitor.
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 you may get excited and tend to shout. Talk slowly, calmly—this is the mark of an experienced communicator.

Principles of Disaster Communication

1. **Keep transmissions to a minimum.** 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.** Rumors are started by expansion, deletion, amplification or modification of words, and by exaggeration or interpretation. All addressed transmissions should be officially authenticated as to their source.

Principles of Disaster Communication

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.

Principles of Disaster Communication

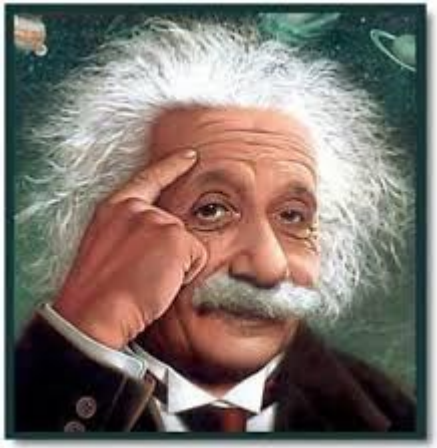
5. **Strive for efficiency.** Whatever happens in an emergency, you will find hysteria and some amateurs who are activated by the thought that they must be sleepless heroes. Instead of operating your own station full time at the expense of your health and efficiency, it is much better to serve a shift.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

Principles of Disaster Communication

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. 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 resources.

Principles of Disaster Communication

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. Amateurs should be willing and able to use any appropriate emergency channels—Amateur Radio or otherwise—in the interest of getting the message through.



Principles of Disaster Communication

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.

Principles of Disaster Communication

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.

Message Formatting

Message Formats

- Disaster Welfare Message Form
- ARRL Message Form Instructions
- ARRL Message Precedences
- ARRL Radiogram Form
- ARRL Message Handling Instructions
- ARRL Numbered Radiograms for Possible “Relief Emergency Use”

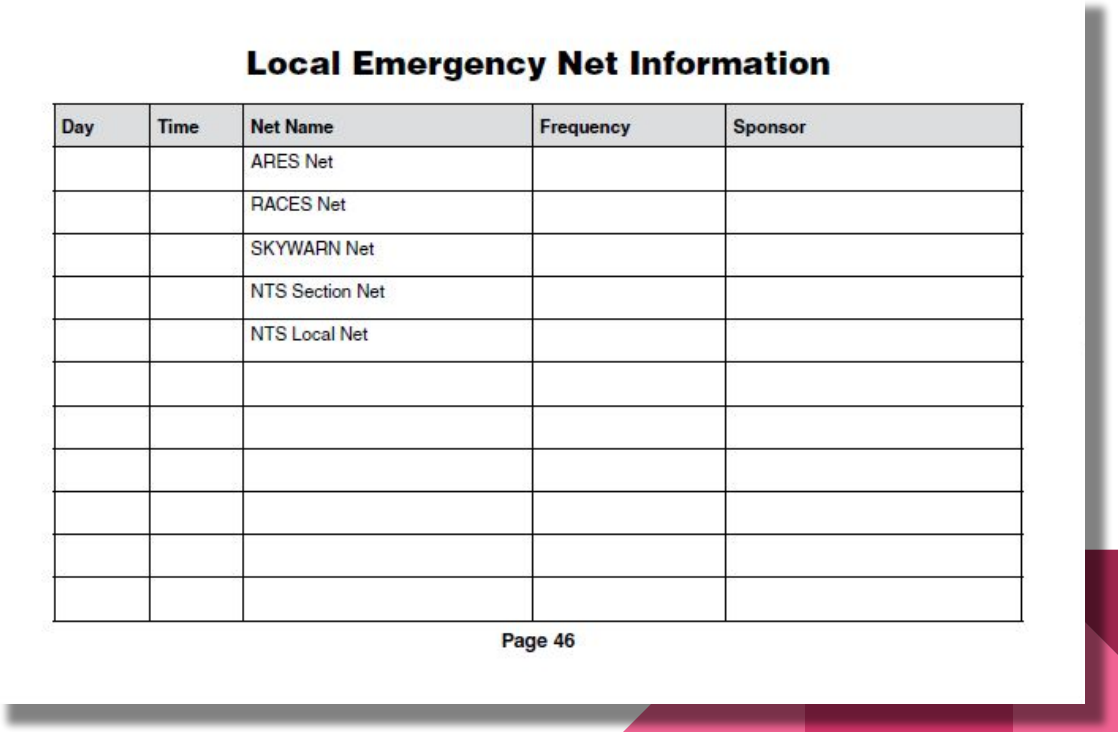
This Will Be Covered In A Separate Training Presentation

Local Net/Contact Information

Local Emergency Net Information

Needs to be:

- Collected
- Documented
- Distributed securely
- Maintained



Local Emergency Net Information

Day	Time	Net Name	Frequency	Sponsor
		ARES Net		
		RACES Net		
		SKYWARN Net		
		NTS Section Net		
		NTS Local Net		

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Local Red Cross Chapter Offices

Needs to be:

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- Distributed securely
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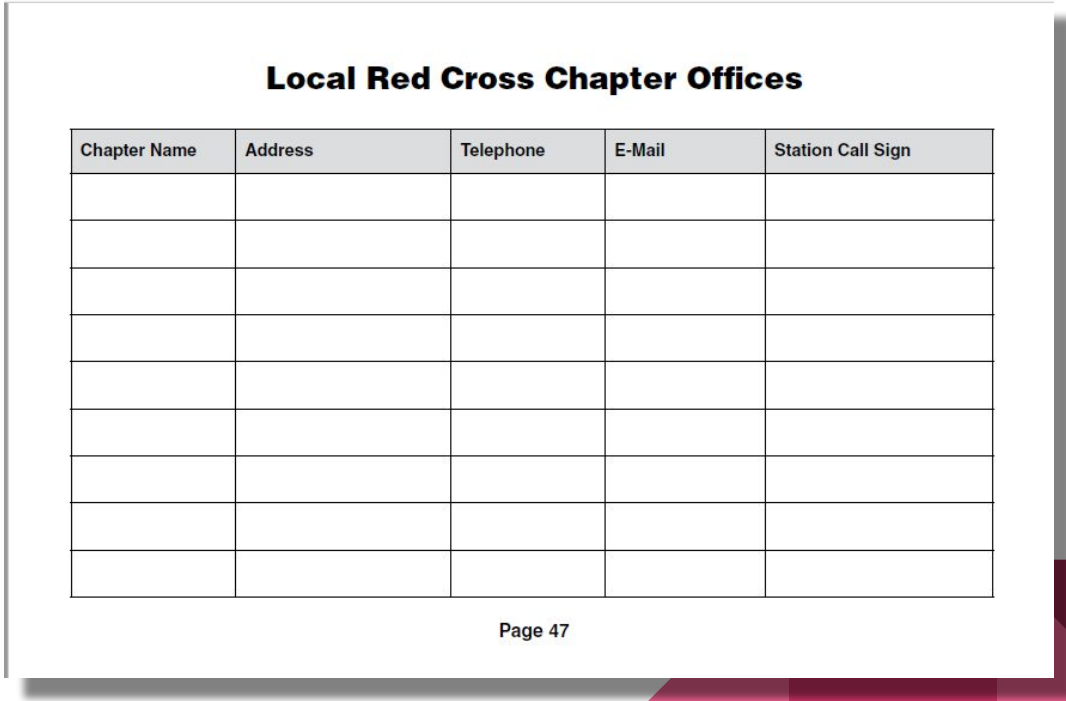

Local Red Cross Chapter Offices

Chapter Name	Address	Telephone	E-Mail	Station Call Sign

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Local/County Emergency Operations Centers

Needs to be:

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- Documented
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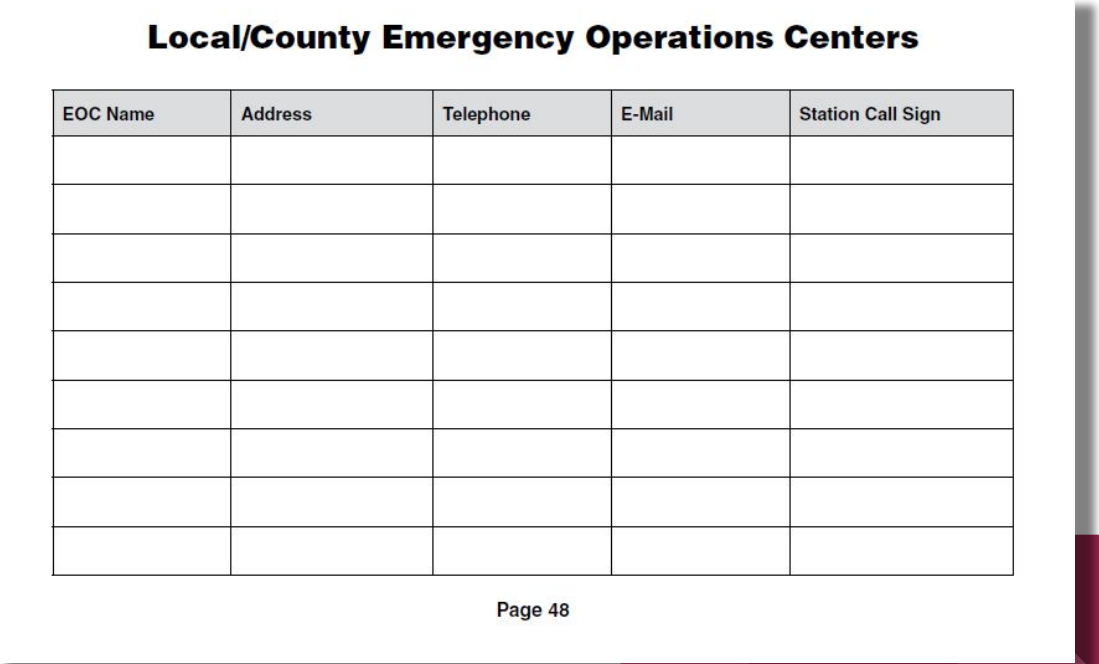

Local/County Emergency Operations Centers

EOC Name	Address	Telephone	E-Mail	Station Call Sign

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Local/County Public Safety Agency Offices

Needs to be:

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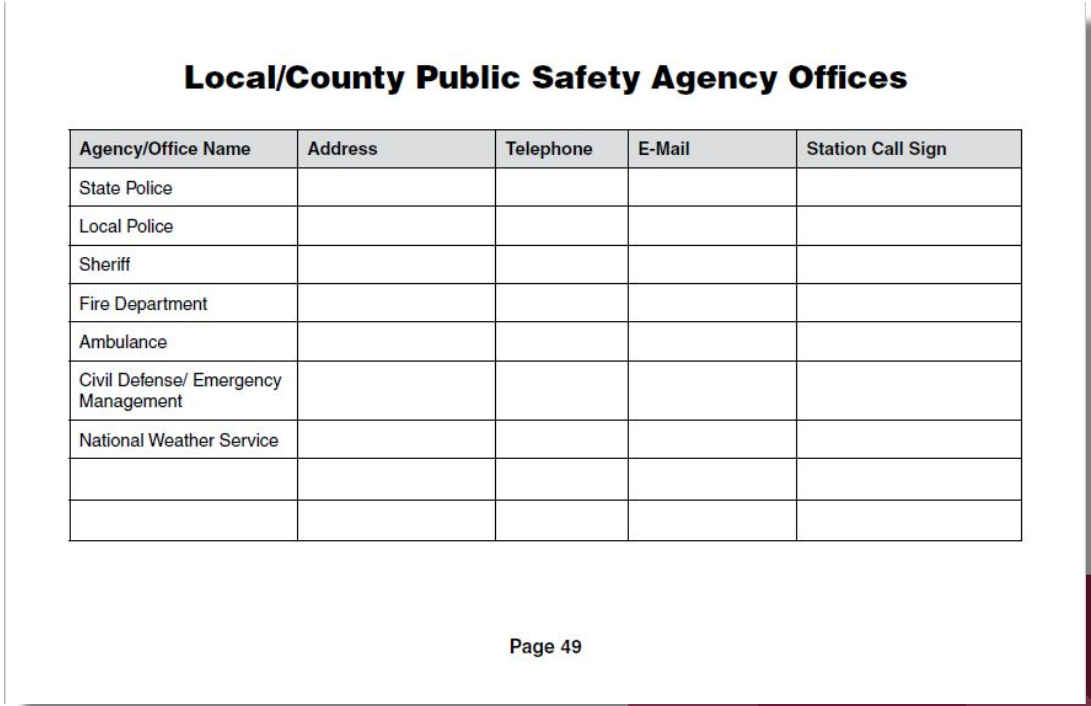

Local/County Public Safety Agency Offices

Agency/Office Name	Address	Telephone	E-Mail	Station Call Sign
State Police				
Local Police				
Sheriff				
Fire Department				
Ambulance				
Civil Defense/ Emergency Management				
National Weather Service				

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Section/District/County ARRL ARES Emergency Coordinators

Needs to be:

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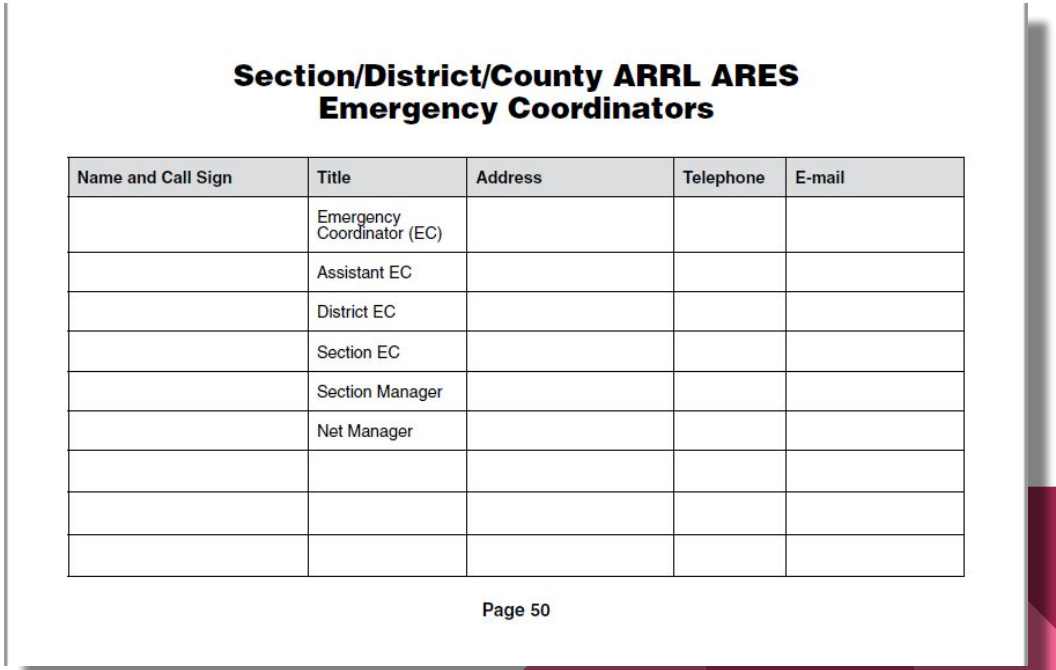

Section/District/County ARRL ARES Emergency Coordinators

Name and Call Sign	Title	Address	Telephone	E-mail
	Emergency Coordinator (EC)			
	Assistant EC			
	District EC			
	Section EC			
	Section Manager			
	Net Manager			

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Other Emergency Information Contacts

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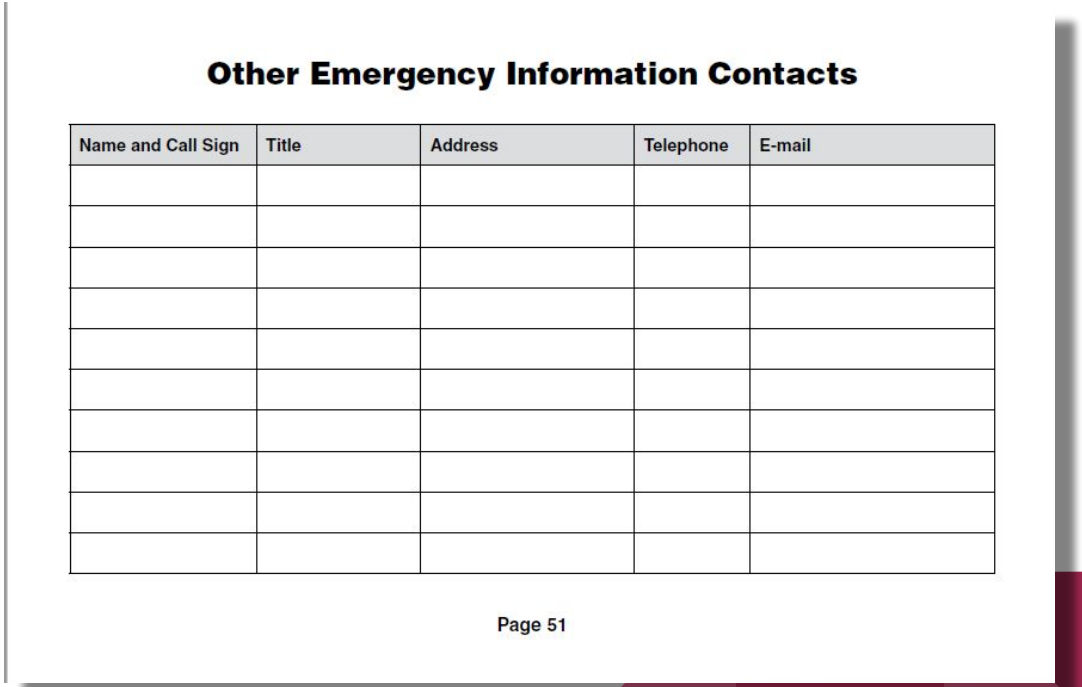
- Documented
- Distributed securely
- Maintained



Other Emergency Information Contacts

Name and Call Sign	Title	Address	Telephone	E-mail

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Other Emergency Information Contacts

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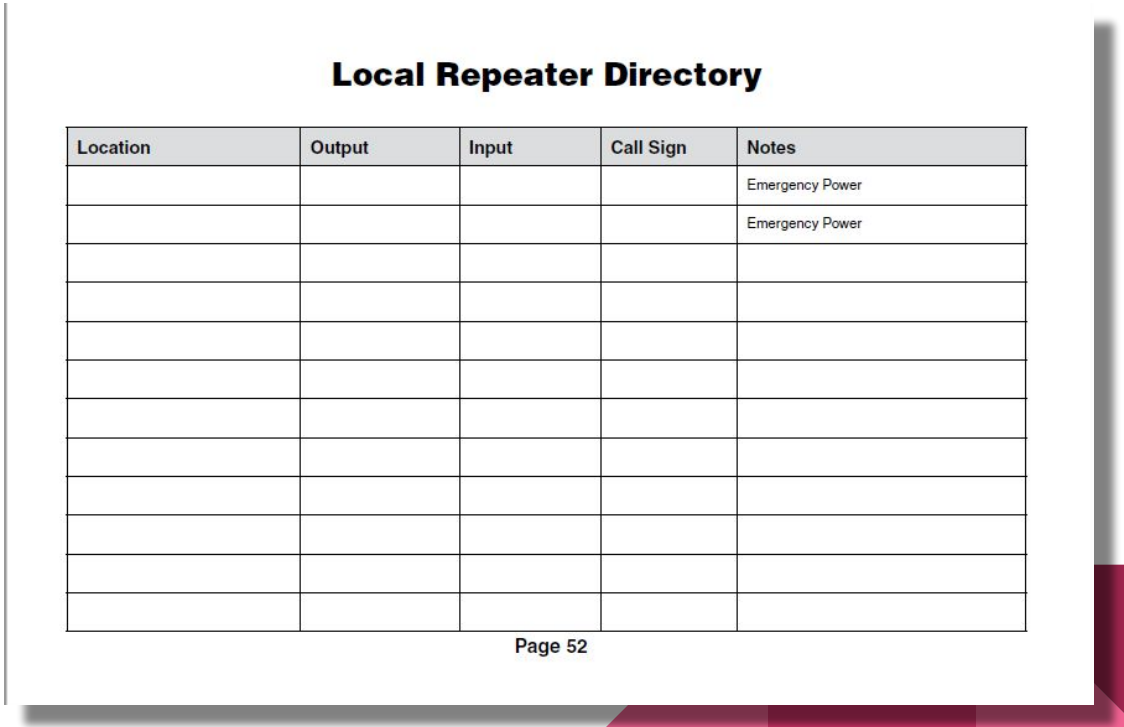

Local Repeater Directory

Location	Output	Input	Call Sign	Notes
				Emergency Power
				Emergency Power

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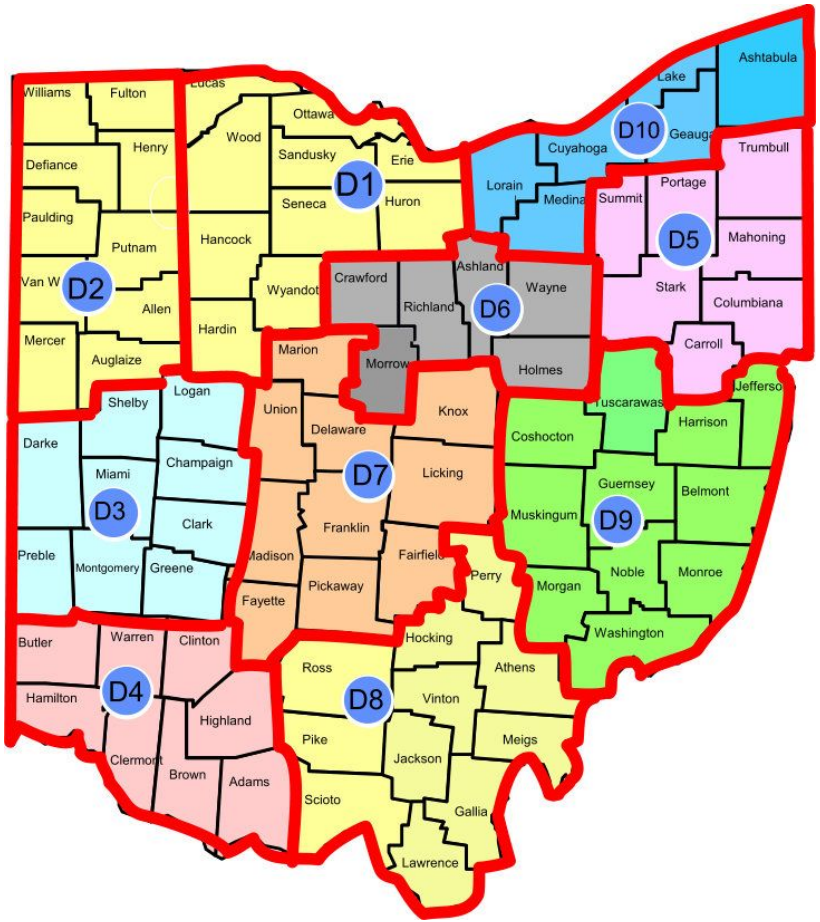
ARRL ARES Section Map



Section Emergency Plan

(Paste your Section Emergency Operations Plan here)

Operating Aids

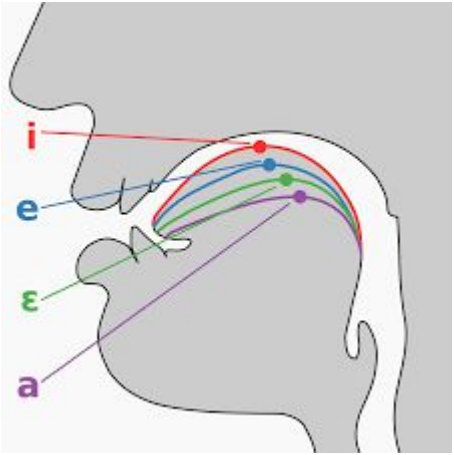
ARRL Communications Procedures

Voice	CW	Function
Go ahead	K	Used after calling CQ, or at the end of a transmission, to indicate any station is invited to transmit. Over AR Used after a call to a specific station, to indicate end of instant transmission.
Over	$\overline{\text{AR}}$	Used after a call to a specific station, to indicate end of instant transmission.
	$\overline{\text{KN}}$	Used at the end of any transmission when only the specific station contacted is invited to answer.
Stand by or wait	$\overline{\text{AS}}$	A temporary interruption of the contact.
Roger	R	Indicates a transmission has been received correctly.
Clear.	$\overline{\text{SK}}$	End of contact. SK is sent before final identification.
Leaving the air	CL	Indicates that a station is going off the air, and will not listen for any further calls. CL is sent after the final identification.

ITU Phonetic Alphabet

Word list adopted by the International Telecommunication Union.

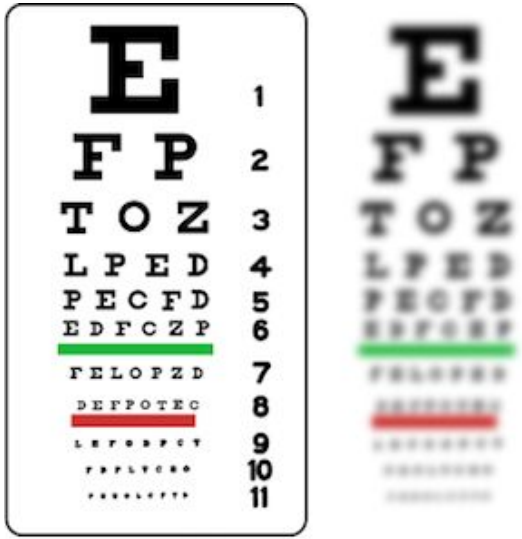
A	ALFA	J	JULIET	S	SIERRA
B	BRAVO	K	KILO	T	TANGO
C	CHARLIE	L	LIMA	U	UNIFORM
D	DELTA	M	MIKE	V	VICTOR
E	ECHO	N	NOVEMBER	W	WHISKEY
F	FOXTROT	O	OSCAR	X	X-RAY
G	GOLF	P	PAPA	Y	YANKEE
H	HOTEL	Q	QUEBEC	Z	ZULU
I	INDIA	R	ROMEO		



R-S-T System

Readability

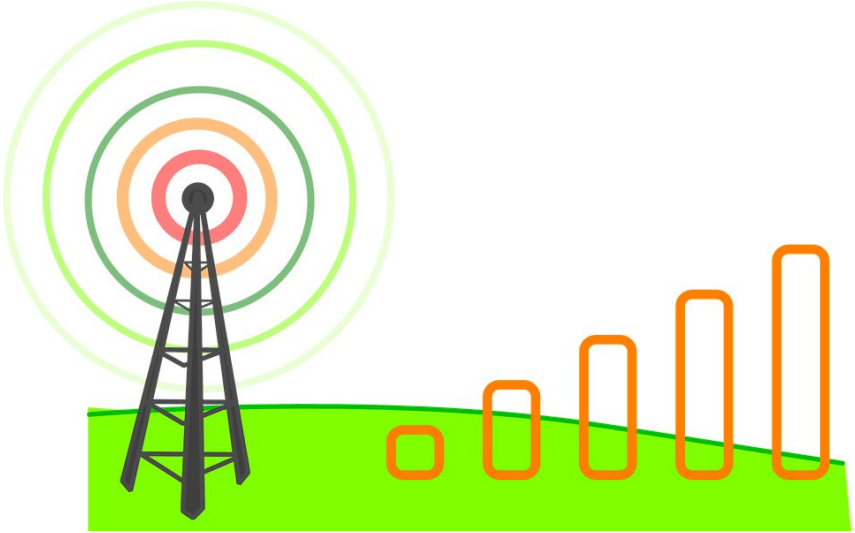
1. Unreadable
2. Barely readable, occasional words distinguishable.
3. Readable with considerable difficulty.
4. Readable with practically no difficulty.
5. Perfectly readable.



R-S-T System

Signal Strength

1. Faint signals, barely perceptible.
2. Very weak signals.
3. Weak signals.
4. Fair signals.
5. Fairly good signals.
6. Good signals.
7. Moderately strong signals.
8. Strong signals.
9. Extremely strong signals.



R-S-T System

Tone

1. Sixty Hz ac or less, very rough and broad.
2. Very rough ac, very harsh and broad.
3. Rough ac tone, rectified but not filtered.
4. Rough note, some trace of filtering.
5. Filtered rectified ac but strongly ripple modulated.
6. Filtered tone, definite trace of ripple modulation.
7. Near pure tone, trace of ripple modulation.
8. Near perfect tone, slight trace of modulation.
9. Perfect tone, no trace of ripple or modulation of any kind.

Hurricane Information

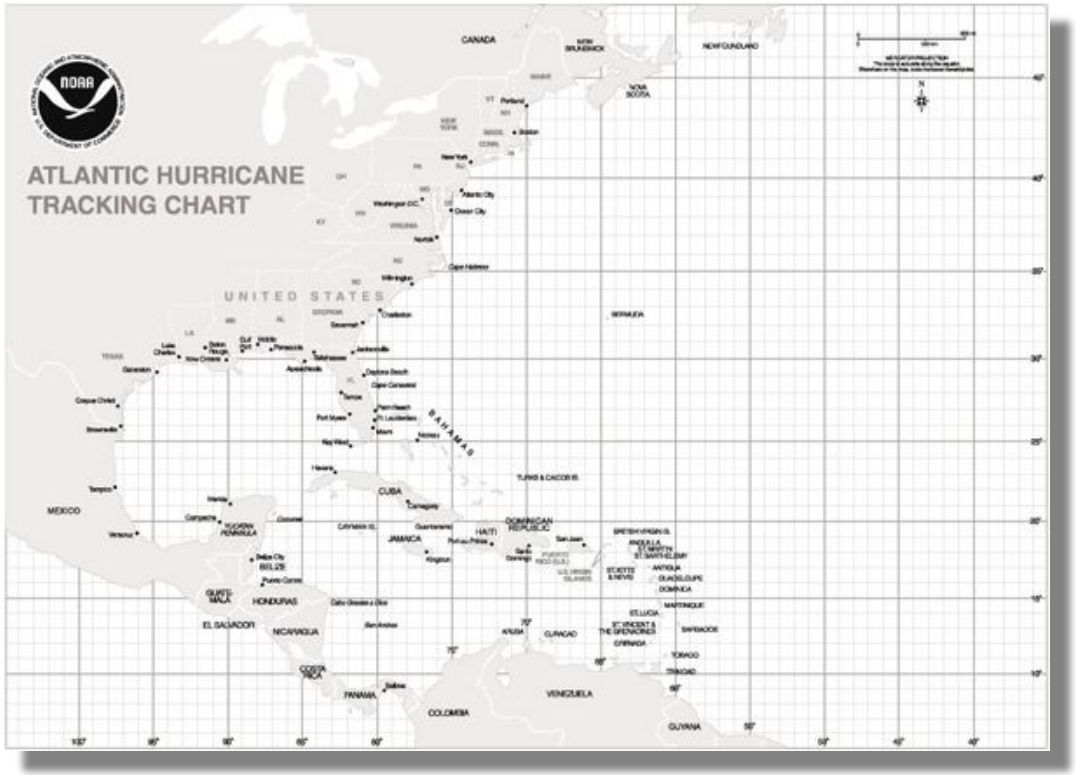
Saffir/Simpson Hurricane Scale

The Saffir-Simpson Hurricane Scale is a 1-5 rating based on a hurricane's intensity. It is used to give an estimate of the potential property damage and flooding expected along the coast from a hurricane landfall. For more information about this scale and hurricanes in general, visit the National Hurricane Center's Web site at www.nhc.noaa.gov

Saffir/Simpson Hurricane Scale

Category	Pressure (inches)	Winds (MPH)	Surge (feet)	Damage
1	28.94	74-95	4-5	No real damage to buildings. Damage to unanchored mobile homes, shrubs and trees. Some damage to poorly built signs. Some coastal flooding and minor pier damage.
2	28.50	96-110	6-8	Some damage to building roofs, doors and windows. Considerable damage to shrubs and trees with some trees blown down. Considerable damage to mobile homes, poorly built signs and piers. Small craft in unprotected anchorages may break moorings.
3	27.91	111-130	9-12	Some structural damage to small residences and utility buildings. Large trees blown down. Mobile homes and poorly built signs destroyed. Flooding near the coast destroys smaller structures with larger structures damaged by floating debris. Terrain may be flooded well inland. Evacuation of low areas within several blocks of shoreline may be required.
4	27.17	131-155	13-18	More extensive curtainwall failures with some complete roof structure failure on small residences. Shrubs, trees and all signs blown down. Major erosion of beach areas. Terrain may be flooded well inland. Massive evacuation of low areas up to 6 miles inland may be required.
5	27.16	156+	18+	Complete failure of roofs on residences and many commercial buildings. Some complete building failures with small buildings overturned or blown away. All shrubs, trees and signs blown down. Flooding causes major damage to all structures near the shoreline. Massive evacuation from low ground within 5-10 miles of the shoreline may be required.

Hurricane Tracking Chart



End of Part Two

Questions?