

Tables Referring to Operating and Public Service

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30.11 EME Software

See the Address List on page 30.6 of the *ARRL Handbook* for contact information.

EME Tracker

RealTrak

SkymooN

VHF PAK

VK3UM EME Planner

Z-TRAK

30.12 Operating Aids for Public Service

ARRL HQ makes available the following free operating aids for public service communications:

<i>Public Service Communications Manual</i>	FSD-235
ARRL numbered radiograms	FSD-3
Sample emergency plan	FSD-27
ARES registration form	FSD-98
Amateur message form	FSD-218
Emergency Reference information	FSD-255
Field Organization Brochure	FSD-300

This entire Public Service Package can be obtained by sending a large (9×12-inch) envelope with First-Class postage for 6 ounces.

30.13 Principles of Emergency Communication

- 1) *Keep the QRM level down:* Remain silent unless called upon. There are only two reasons to check into an emergency net: (1) You have a bona fide emergency; (2) the Net Control Station (NCS) is requesting help that only you can provide.
- 2) *Monitor established emergency frequencies:* Many areas have established emergency frequencies that should be monitored for possible distress calls.
- 3) *Avoid spreading rumors:* Transmit only facts, not speculation. Do not repeat messages unless so authorized by the originator, and then only word for word.
- 4) *Authenticate all messages:* Any messages of an official nature should be written and signed.
- 5) *Strive for efficiency:* You are more effective as part of a team than as a lone individual.
- 6) *Select the mode and band to suit the need:* Advantages of several modes are listed below.
- 7) *Use all communications channels intelligently:* The object is to protect lives and property. Use emergency or normal communications channels where available.
- 8) *Don't broadcast:* Our job is to communicate for, not with, the general public. See §97.113 of *The FCC Rule Book* for details.

Advantages of Various Amateur Modes for Emergency Communications

CW

- 1) Less QRM in most amateur bands.
- 2) Privacy of communications (less easily understood by the public).
- 3) Simpler transmitting equipment.
- 4) Greater accuracy than voice in record communications.
- 5) Longer range for a given transmitter power level.

Voice

- 1) More practical for portable and mobile work.
- 2) More widespread availability of operators.
- 3) Faster communication for tactical or "command" purposes.
- 4) More readily appreciated and understood by the public.
- 5) Official-to-official and phone-patch communication.

Packet/AMTOR/FACTOR/CLOVER

- 1) Less QRM in most amateur bands.
 - 2) Privacy of communications (less easily understood by the public).
 - 3) More widespread availability of operators.
 - 4) Greater speed and accuracy of record communication than any other modes.
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30.14 ARES Personal Checklist

The following represents recommendations of equipment and supplies ARES members should consider having available for use during an emergency or public-service activity.

- 1) ARES Identification Card
- 2) FCC Amateur Radio License
- 3) Radio Gear
 - rig (2 meters)
 - microphone
 - headphones
 - power supply/extra batteries
 - antennas with mounts
 - spare fuses
 - path cords/adapters (BNC to PL259/RCA phono to PL259)
 - SWR meter
 - extra coax
- 4) Writing Gear
 - pen/pencil/eraser
 - clipboard
 - message forms
 - logbook
 - note paper
- 5) Personal Gear (short duration)
 - snacks
 - liquid refreshments
 - throat lozenges
 - personal medicine
 - aspirin
 - extra pair of prescription glasses
- 6) Personal Gear (72-hour duration)
 - foul-weather gear
 - three-day supply of drinking water
 - cooler with three-day supply of food
 - mess kit with cleaning supplies
 - first-aid kit
 - personal medicine
 - aspirin
 - throat lozenges
 - sleeping bag
 - toilet articles
 - mechanical alarm clock
 - flashlight with batteries/lantern
 - candles
 - waterproof matches
 - extra pair of prescription glasses
- 7) Tool Box (72-hour duration)
 - screwdrivers
 - pliers
 - socket wrenches
 - electrical tape
 - 12/120-V soldering iron
 - solder
 - volt-ohm meter
- 8) Other (72-hour duration)
 - hatchet/ax
 - saw
 - pick
 - shovel
 - siphon
 - jumper cables
 - 3/8-inch rope
 - highway flares
 - extra gasoline and oil

The Amateur Radio Emergency Service (ARES) and the Radio Amateur Civil Emergency Service (RACES) are the umbrella organizations of Amateur Radio public services. ARES is sponsored by ARRL (although ARRL membership is not required for participation) and handles all kinds of public-service activities. RACES is administered by the Federal Emergency Management Agency (FEMA) and operates only for civil preparedness and in times of civil emergency. RACES is activated at the request of a state or federal official.

The ARRL advocates dual membership and cooperative efforts between ARES and RACES whenever possible. RACES rules now make it possible for ARES and RACES to use the same frequencies, so that an ARES group also enrolled as RACES can “switch hats” from ARES to RACES and RACES to ARES as the situation develops. In many areas, however, the two organizations exist separately. Contact local ARRL Leadership Officials to determine the situation in your area.

ARES officials operate under the ARRL Section Manager. **Figs A and B** show the Section and the local ARES structures, respectively.

The Radio Amateur Civil Emergency Services (RACES) comprises certain Amateur Radio operators and stations that are registered with civil defense organizations or licensed as RACES stations by the FCC. RACES frequencies are normally shared with the Amateur Radio Service, but in times of civil emergency and for limited periods of testing and practice RACES operation is limited to the frequencies shown below. During times of official RACES operation, RACES stations may only contact other RACES stations and certain other stations as listed in §97.407(c). Official RACES operation does not allow radio contact with the general amateur population.

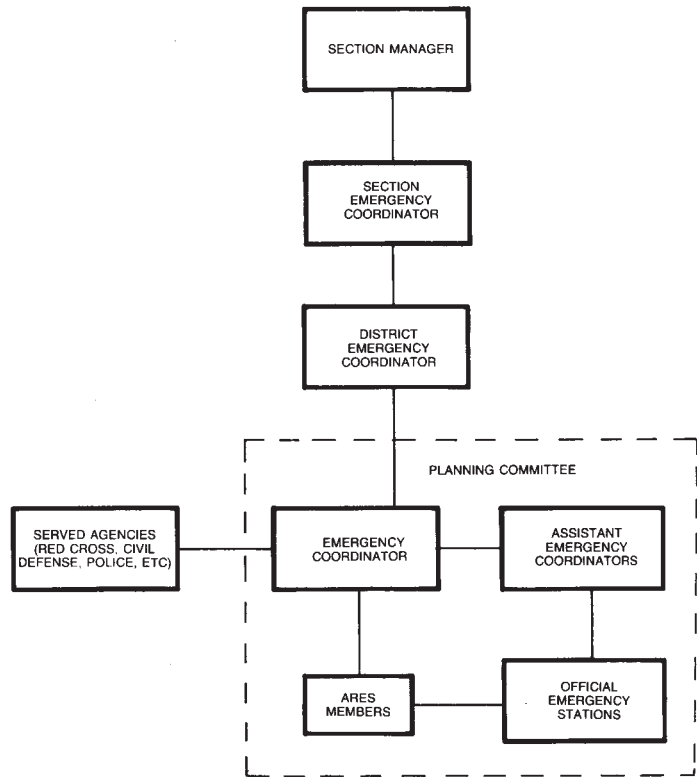


Fig A—Section-level ARES structure.

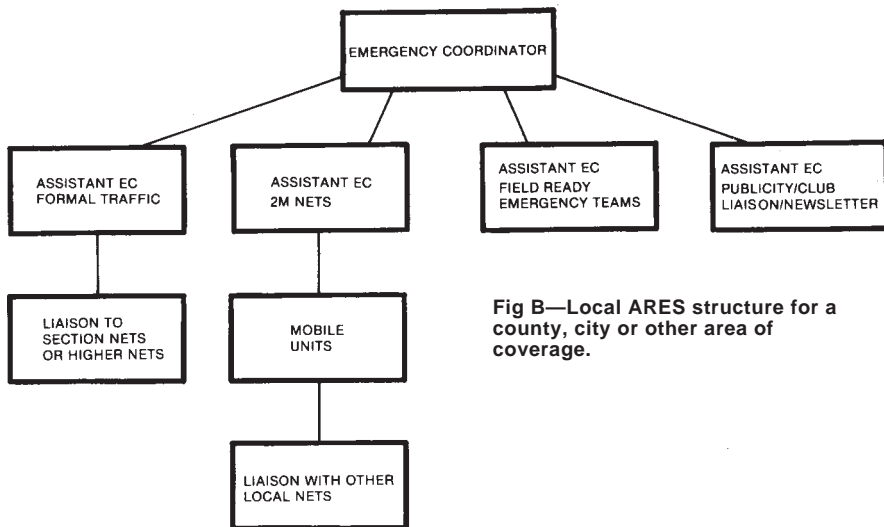


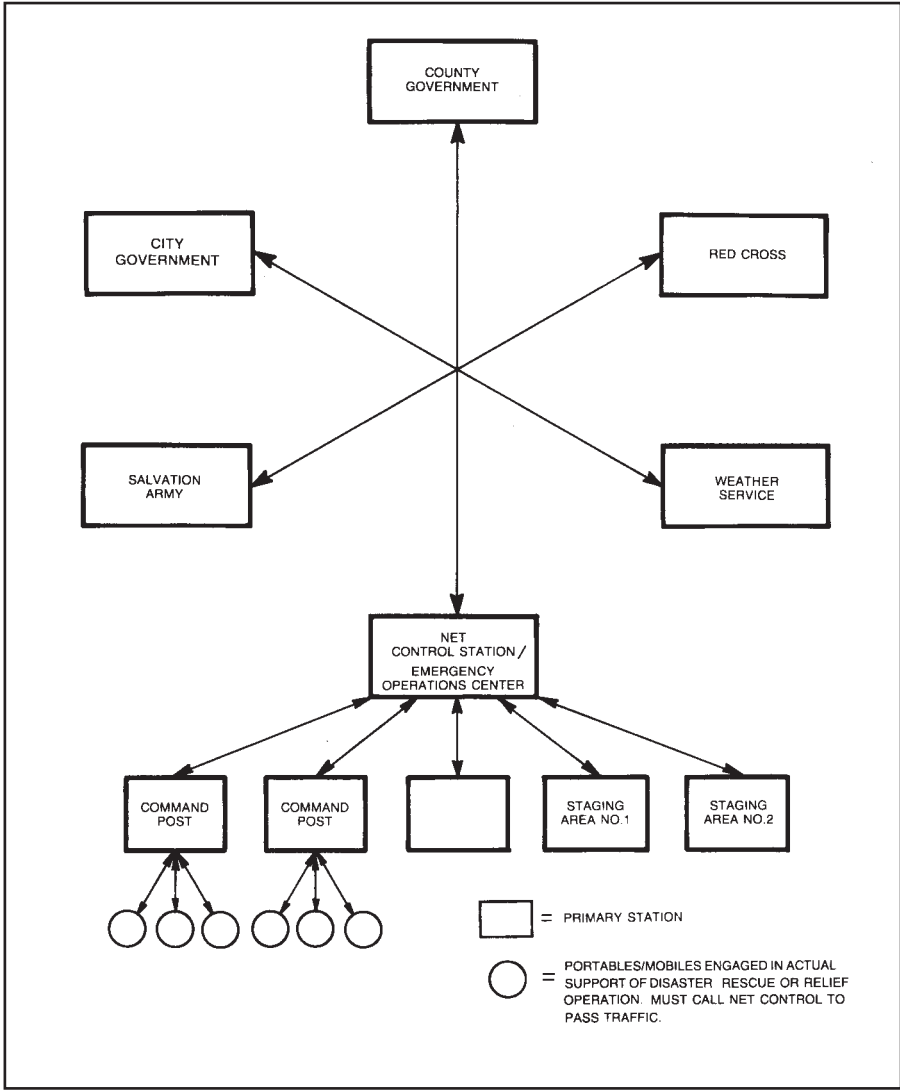
Fig B—Local ARES structure for a county, city or other area of coverage.

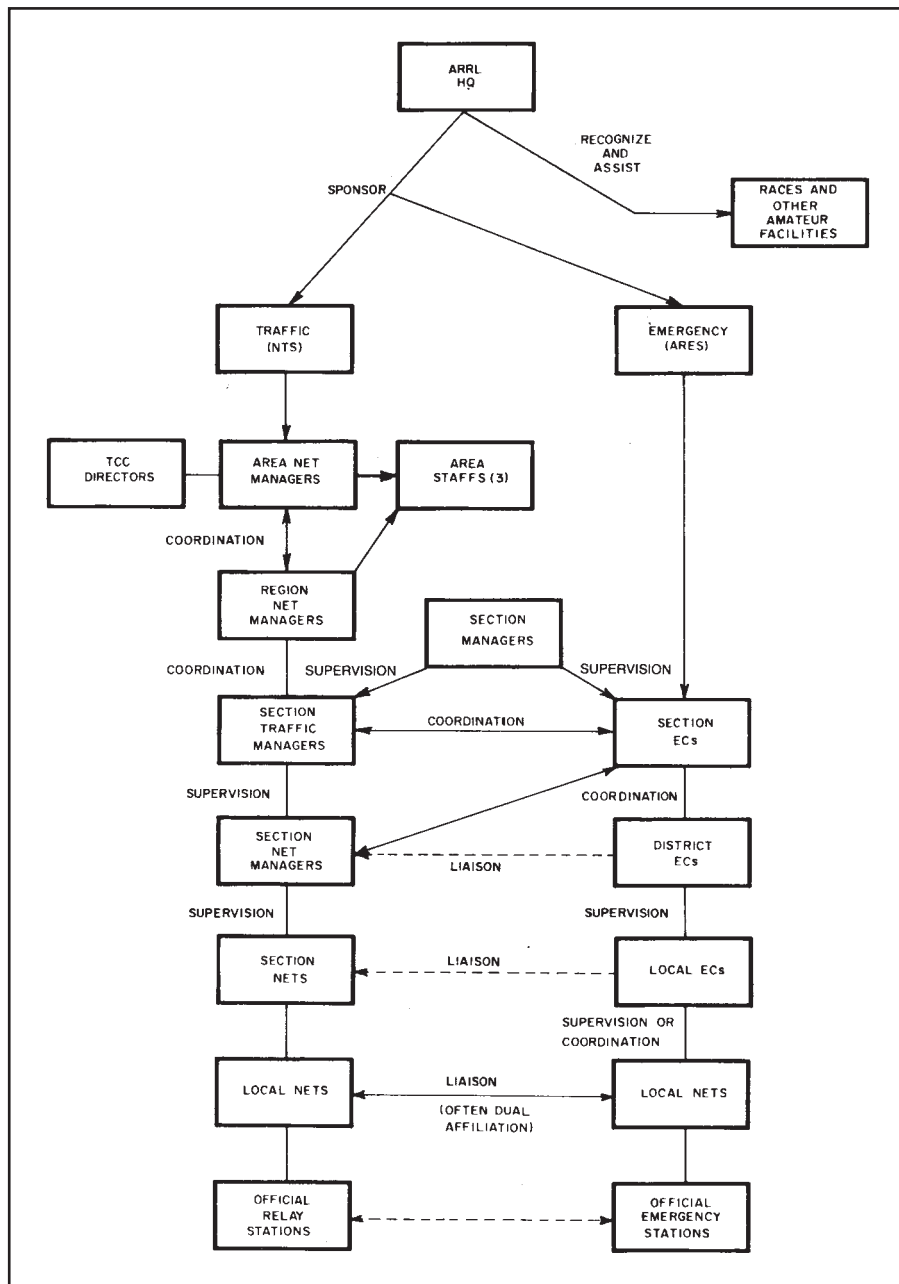
Dedicated RACES Operating Frequencies

RACES frequencies are shared with amateurs except in certain emergencies. See *The FCC Rule Book* (§97.407) for details on RACES operation.

<i>kHz</i>	<i>MHz</i>	<i>MHz</i>
1800-1825	10.100-10.150	50.350-50.750
1975-2000	14.047-14.053	52.000-54.000
3500-3550	14.220-14.230	144.50-145.71
3930-3980	14.331-14.350	146.00-148.00
3984-4000	21.047-21.053	222.00-225.00
7079-7125	21.228-21.267	420.00-450.00
7245-7255	28.550-28.750	1240.00-1300.00
	29.237-29.273	2390.00-2450.00
		29.450-29.650

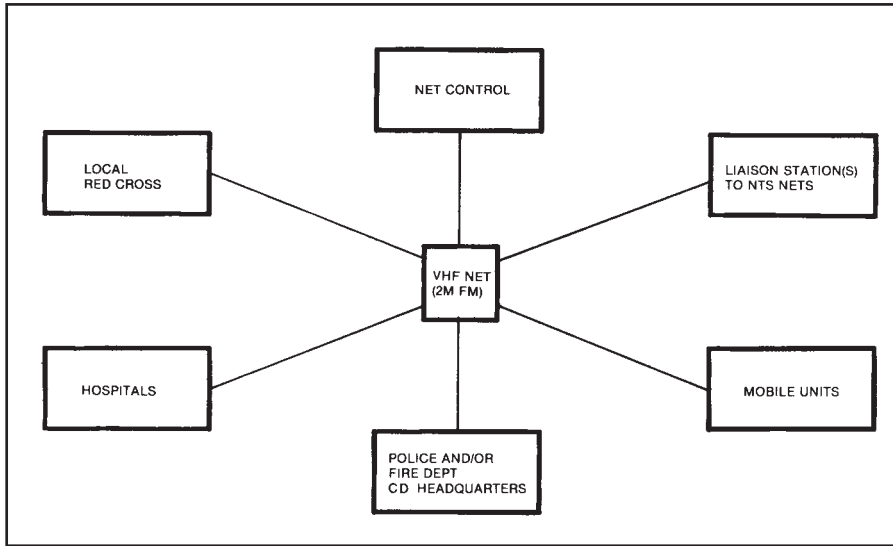
The Interaction Between the EOC/NCS and the Command Post(s) in a Local Emergency





30.18

Typical Station Deployment for Local ARES Net Coverage in an Emergency



30.19

Typical Structure of an HF Network for Emergency Communication

