

# AMATEUR RADIO PUBLIC SERVICE COMMUNICATIONS

## Public Service, RACES, & ARES Communications Resource Functions and Equipment Guide

*This Guide is an aid in creating a standard for all Amateur Radio mutual aid and Ecom groups.*

Amateur Radio Resource Typing provides Emergency Managers, Staging Managers, and Event Coordinators with the information needed to request and receive resources they need during an emergency, disaster or event. It is used to identify and match communications functions amateur radio operators typically perform at events and incidents. By knowing your resource function at check-in, assignments are quickly made by the coordinator, staging manager, or emergency manager.

### Common Items for all Communications Resource Functions (CRF)

- Copy of amateur radio license, badge/ID, and photo drivers license
- Writing material (pen, pencil, writing pad, and message forms)
- Portable power source for a minimum of 12 hours of typical operation<sup>3</sup>
- All connectors RACES/ARES standardized (Powerpole™)
- Transceiver operating instructions or summary guide
- Short duration personal support gear (Rain Gear/comfortable footwear) (Adjust to area conditions)
- Duct tape, miscellaneous adapters and comfort items (food and water, optional chair and table)

### Communications Resource Function S - (Shadow Operations | VHF/UHF)

**CRF S** identifies the function and basic equipment for operation of an amateur radio station as a "foot mobile" station while shadowing an event or incident official.

- Hand-held, 2 Meter (2M/440 preferred) FM synthesized transceiver<sup>4</sup> with a minimum of 2.5 watts of output power with programmable CTCSS encoder - Function **S1** if less than 2.5 watts (Not Recommended)
- Cigarette lighter adapter and clip lead adapter power cables
- Earphone or Headset attachment (VOX disabled)
- Adapter cable/bracket or mini-mag mount antenna for temporary vehicle duty with shadow

### Communications Resource Function B - (Base/Rest Stop/Shelter/Net Control | VHF/UHF)

**CRF B** identifies the function and basic equipment for portable operation of an amateur radio station as a base or a fixed location.

- 2 Meter (2M/440 preferred) Transceiver<sup>4</sup> capable of 25 watts minimum into the antenna ( HT / amplifier combination is a viable alternative)
- Gain antenna (dual band preferred) with mast and support, coax with PL259s at each end, (25' minimum) and PL258 coupler. Extra 25' minimum coax cable suggested (RG8X or better preferred)
- External speaker with 1/8" phone plug and/or earphones or headset attachment with VOX disabled

### Communications Resource Function M - (Mobile/SAG | VHF/UHF)

**CRF M** identifies the function and basic equipment for portable operation of an amateur radio station in a moving vehicle such as a car, truck, van, aircraft, or bus.

- 2 Meter (2M/440 preferred) Transceiver<sup>4</sup> capable of 25 watts minimum into the antenna ( HT / amplifier combination is a viable alternative)
- Gain antenna (dual band preferred) with magnetic base and 15' of coax with PL259 connector
- External speaker with 1/8" phone plug and/or earphones or headset attachment with VOX disabled
- Cigarette lighter adapter and clip lead adapter power cables

### Communications Resource Function H - (HF) (Strategic Communications)

**CRF H** identifies the function and basic equipment for portable operation of an amateur radio station for long and intermediate range communications. (Non-line of sight)

- All modes HF SSB DC Transceiver with tuner capable for portable operation, 100 Watts minimum
- Antenna(s), mast and support accessories, coax with PL259s at each end, (50' minimum) and PL258 coupler. Extra coax cables may be needed (RG8X or better preferred) Common bands are 20, 40, and 80 meters. NVIS capability helpful for tactical situations
- Earphones and/or headset, miscellaneous coax and power adapters
- Must hold General Class License or higher

### Notes:

1. CRF's S,B,M, and D(A,M,D,N) are primary Urban Communications Resources.
2. CRF's that are not portable (home stations or permanent mobile installations) shall have the modifier **"/F"** for fixed, affixed at the end of the Resource Function designator. (i.e., CRF-M/F)
3. Medium and Long Assignments may require additional power sources.
4. D-Star digital voice and data transceivers when substituted in a CFR shall be ordered as a Type III of that CFR.

\*\*\* This guide is for radio equipment and does not include general personal items or 24/72 hour kit items \*\*\*

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### Digital Resource Functions

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#### Communications Resource Function DA - (Digital APRS Operations | VHF/UHF)

**CRF DA** identifies the function and basic equipment for operation of an amateur radio station as an Automatic Positioning Reporting Station providing the event or incident official(s) with a "view" of resources in real time and short messaging.

- CRF-B equipment complement
- Computer (laptop or other) with monitor suitable for portable operations capable of running mission applicable amateur radio programs (Printer optional)
- APRS software with digipeater capability
- Terminal Node Controller (TNC) and necessary cables, accessories, and documentation

#### Communications Resource Function DM - (Digital Messaging Operations | VHF/UHF)

**CRF DM** is similar to CRF DA, but intended for digital messaging providing the event or incident officials with traceable messaging and "radio Email" capability.

Sub Functions include **DMw**, Winlink capable, **DMp** packet capable.

- CRF-B equipment complement
- Computer (laptop or other) with monitor suitable for portable operations capable of running mission applicable amateur radio programs (Printer highly recommended)
- Software for digital messaging (Winlink/Airmail, PaclinkMP, Packet or other)
- Terminal Node Controller (TNC) and necessary cables, accessories, and documentation

#### Communications Resource Function DT - (Digital Tracker | VHF/UHF)

**CRF DT** identifies equipment needed for asset tracking of mobile units as directed by event or incident officials for display tracking on Resource Type DA equipment.

- Self contained pre-packaged portable equipment unit containing 2M transceiver, antenna, Global Positioning Satellite (GPS) unit, APRS tracking encoder, power unit, and necessary external cabling

#### Communications Resource Function DN - (Digital Networking | UHF)

**CRF DN** identifies equipment needed for a field deployable 802.nna resource used to provide wireless internet access to assist in event or incident communications.

- Self contained "802.11 repeater" unit functioning as a Bridge/Router/Access Point including antenna
- Minimum of 50' Cat 5 cable and POE interface
- Wired/wireless access point unit.
- Associated networking support equipment (Mast, aiming device, extra CAT5 cable, jumpers, etc.)

#### Communications Resource Function DH - (Digital Messaging | HF)

**CRF DH** identifies the function and basic equipment for portable operation of an amateur radio station for long and intermediate range digital messaging communications. (Non-line of sight)

- CRF-H equipment complement
- Pactor capable modem (Pactor II and III capability recommended)
- Computer (laptop or other) with monitor suitable for portable operations capable of running mission applicable amateur radio programs (Printer highly recommended)
- Software for digital messaging (Winlink 2000, Airmail, PSK31, or other)
- General Class License or higher required for equipment operation

#### Communications Resource Function DV - (Digital ATV)

Self contained portable amateur television transmission/receiving station (TBD)

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#### CRF Assignment Durations

- Short – Up to 12 hour duration (Shifts)
- Medium – 12 to 72 hour duration (Shifts)
- Long – 72 hour or greater duration (Usually an away assignment)

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