

# AMATEUR RADIO PUBLIC SERVICE COMMUNICATIONS

## Resource Guide for ARES, RACES, AuxComm and Public Service Communications

Amateur Radio Resource Typing enables amateur radio communicators, emergency managers, staging managers, EmCom Leaders and event coordinators to identify, request and receive definable, standardized amateur radio resources during an emergency, disaster or event. It identifies, categorizes and labels communications functions amateur radio operators typically perform at events and incidents for easy reference. By implementing Resource Typing, resources are easier to request and supply allowing assignments to be made quickly.

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

---

### Basic Communications Resource Functions<sup>1</sup>

◇ **A Type I CRF includes recommended items | A Type II CRF is without recommended items** ◇

---

#### 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
- Transceiver operating instructions or summary guide
- Portable power source meeting equipment needs for a minimum of 12 hours of typical operation
- Vehicle power port and clip lead power adapters, equipment fuses and power cords with all equipment ARES/RACES standardized (Powerpole™, PL-259, 1/8" speaker plug)
- Mission suitable personal support gear (Refer to local group standard kit lists; adjust for duration/season)
- Duct tape, miscellaneous adapters and comfort items (food, water, optional chair and table)

---

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

**CRF-S** identifies basic amateur radio equipment implementing the communications function of a "foot mobile" station shadowing an event or incident official.

- Hand-held, 2 Meter (2M/70CM Recommended) FM synthesized transceiver with programmable CTCSS, 2.5 watts minimum output and earphone or headset attachment (VOX disabled)
- Adapter cable/bracket or magnetic mount antenna for temporary vehicle duty with shadow

---

#### Communications Resource Function – B (Base | VHF/UHF)

**CRF-B** identifies the basic amateur radio equipment implementing the communications function for a portable Base, Rest Stop, Shelter, Net Control station, etc.

- 2 Meter (2M/70Cm Recommended) Transceiver with programmable CTCSS, 25 watts minimum output (HT+amplifier combination is a viable alternative)
- Gain antenna (dual band recommended) with mast and support, 25' minimum coax cable with PL259 connectors, PL258 coupler (Additional 25' or longer RG8X or better coax cable recommended)
- External speaker with 1/8" phone plug and/or earphones or headset attachment with VOX disabled

---

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

**CRF-M** identifies basic amateur radio equipment implementing the communications function for a portable station temporarily installed in a vehicle such as a car, truck, van, aircraft, boat, bus, etc.

- 2 Meter (2M/70Cm Recommended) Transceiver with programmable CTCSS, 25 watts minimum output (HT+Amplifier combination is a viable alternative)
- Gain antenna (dual band recommended) with magnetic base with 15' of coax cable with PL259 connector
- External speaker with 1/8" phone plug and/or earphones or headset attachment with VOX disabled

---

#### Communications Resource Function - H[ ] (High-Range Communications | HF)<sup>2</sup>

**CRF-H[ ]** identifies basic amateur radio equipment implementing the communications function for a portable HF long to intermediate range communications station. A General Class or higher License is required.

Sub Functions: **p** - Field Portable; **m** - Mobile (suitable for in vehicle use)

- All modes HF SSB DC Transceiver with auto-tuner, 100 Watts output minimum
- HF Antenna(s), mast and support accessories, 50' coax cable with PL259 connectors. (Additional 50' – 100' RG8X or better coax cable recommended) PL258 coupler with each coax cable. Miscellaneous coax and power adapters. Common bands are 20, 40, 60, 80 & 160 meters. 40M, 60M & 80M preferred for EmCom support. NVIS capability recommended for tactical situations
- External speaker with 1/8" phone plug and/or earphones or headset attachment with VOX disabled

---

#### Assignment Durations

- Short – Up to 12 hour duration (Shifts)
- Medium – 12 to 72 hour duration (Shifts)
- Long – 72 hour or greater duration - Typically an away assignment  
(Medium to Long Assignments may require additional power sources)

◇ **All CRF Resources are portable or mobile<sup>2</sup>** ◇

◇ *This guide details radio equipment and does not include general personal support gear.* ◇

# AMATEUR RADIO PUBLIC SERVICE COMMUNICATIONS

## Resource Guide for ARES, RACES, AuxComm and Public Service Communications

### Specialty Communications Resource Functions<sup>1</sup>

◇ A Type I CRF includes recommended items | A Type II CRF is without recommended items ◇

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

**CRF-DA** identifies basic amateur radio equipment implementing the communications function for a portable Automatic Positioning/Packet Reporting System providing event or incident official(s) with a "view" of resource positions in real time along with short messaging capability.

- CRF-B** resource equipment
- Terminal Node Controller (TNC) with necessary cables, accessories, and documentation
- Computer (laptop or other) suitable for portable operations, running mission applicable amateur radio software – (Printer, printing supplies and AC adapter recommended)
- Software: APRS with digipeating capability

#### Communications Resource Function – RT (Data – Resource Tracking | VHF/UHF)

**CRF-RT** identifies a set of amateur radio equipment implementing the communications function of a resource tracker. This resource is use to track mobile assets or other resource as requested by event or incident officials for reception and display with a CRF-DA resource.

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

#### Communications Resource Function - TM[ ] (Tactical Data Messaging | VHF/UHF)

**CRF-TM[ ]** identifies basic amateur radio equipment implementing the communications function for a portable "last mile" data messaging system providing officials with traceable messaging and/or "radio Email" capability.

Sub Functions: **w** - Winlink capable; **p** - packet capable

- CRF-B** resource equipment
- Terminal Node Controller (TNC) with necessary cables, accessories, and documentation
- Computer (laptop or other w/min 2 serial ports) suitable for portable operations, running mission applicable amateur radio software – (Printer, printing supplies, Scanner, AC adapter recommended)
- Software: RMS Express, [Paclink + Email client], user group's standard Packet program(s)

#### Communications Resource Function - LRM[ ] (Long-Range Data Messaging | HF)<sup>2</sup>

**CRF-LRM[ ]** identifies basic amateur radio equipment implementing the communication function for a portable HF long range data messaging system providing traceable messaging and/or "radio Email" capability.

Sub Functions: **w** - Winlink; **h** - Winlink Hubbing (hub/routing function)<sup>4</sup>; **s** - sound card, i.e. WINMOR/PSK31

- CRF-Hp** resource equipment (General Class License or higher required for operation)
- Pactor I, II and/or III capable modem (Pactor III recommended)
- Computer (laptop or other w/min 2 serial ports) suitable for portable operations, running mission applicable amateur radio software – (Printer, printing supplies, Scanner, AC adapter recommended)
- Software: RMS Express, RMS Packet, RMS Relay, [Paclink + Email client], user group's specialty programs
- Sound Card Interface and accessories required to support software based communications modes
- CRF-TM** resource equipment & Pactor III modem required for Sub Function **LRMh**

#### Communications Resource Function – DN (Data Networking | UHF)

**CRF-DN** identifies basic equipment implementing the communications function for a portable 802.[ ] resource providing a wireless node(s) in support of event or incident communications.

- Self contained "802.11 repeater" unit functioning as a Bridge/Router/Access Point/MESH Node including antenna and capable of operating with +12 vDC power
- Minimum of 50' Cat 5 cable with POE interface (NY Standard)
- Associated networking support equipment (Mast, aiming device, CAT5 cable jumpers, etc.)

#### Communications Resource Function – AV (Amateur TV | UHF)

**CRF-AV** - Portable amateur television (ATV) equipment for transmitting and receiving video information

- (TBD)

- Notes:**
1. To request only a CRF operator, use Communications Resource Operator (CRO) with appropriate designation
  2. For MARS operations, equipment/capabilities must meet unit's operational requirements
  3. D-Star digital transceivers when requested in a CRF shall have the modifier "/D\*" added to CRF
  4. VHF data to/from HF data hubbing function requiring Pactor III

◇ All CRF Resources are portable or mobile ◇

◇ This guide details radio equipment and does not include general personal support gear. ◇