A M A T E U R   R A D I O   P U B L I C   S E R V I C E   C O M M U N I C A T I O N S

Resource Guide - For ARES, RACES, EmComm and Public Service Communications

This Guide is an aid in defining a communications resource standard for Amateur Radio and EmComm groups

Amateur Radio Resource Typing enables amateur radio communicators, emergency managers, staging managers, EmComm Leaders and event coordinators to identify, request and receive standardized amateur radio resources during an emergency, disaster or event. This guide identifies Equipment Kits for each communications function 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 filled quickly.

Amateur Radio Resource[1] (ARR)   ◇ Types and recommended Equipment Kits

Common items included in all Amateur Radio Resource equipment kits

- ☐ Copy of amateur radio license, badge/ID, and photo driver's license
- ☐ Writing material; pen, pencil, writing pad, and message forms (ICS-213, 214, 205, Radiogram, etc.)
- ☐ Equipment operating instructions or summary guides
- ☐ Portable power source meeting equipment needs for a minimum of 12 hours of typical operation
  (Medium to Long Assignments may require additional power sources or power supply)
- ☐ 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)
- ☐ Coax adapters including PL258, UHF to N and N to UHF[4]
- ☐ Hand-held, 2 Meter (2M/70cm Recommended) FM synthesized transceiver with programmable CTCSS, 3.5 watts minimum output and earphone or headset attachment (VOX disabled)

Basic Resource Functions   ◇   All ARR Resource kits are portable ◇

◇ Amateur Radio Resource - Type S   Function = Shadow | VHF/UHF

ARR-S identifies the amateur radio communications function for operation as a "foot mobile" station "shadowing" an event or incident official. A Hand-held transceiver is generally used for this function.

- ☐ Adapter cable/bracket or magnetic mount antenna for temporary vehicle duty with shadow

◇ Amateur Radio Resource - Type B   Function = Base | VHF/UHF

ARR-B identifies the amateur radio communications function and amateur radio equipment for field operation as a Base, Rest/Aid Stop, Shelter, Net Control, EOC or similar type station.

- ☐ 2 Meter (2M/70cm Recommended) FM Transceiver with programmable CTCSS, 25 watts minimum output
- ☐ Gain antenna (dual band recommended) with mast and support, 25' minimum coax cable with PL259 connectors, PL258 coupler (Additional 25' or longer RG-8X or RG-8 coax cable recommended)
- ☐ External speaker with 1/8" phone plug and/or earphones or headset attachment with VOX disabled

◇ Amateur Radio Resource - Type M   Function = Mobile | VHF/UHF

ARR-M identifies the amateur radio communications function and amateur radio equipment temporarily mounted 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
- ☐ Gain antenna (dual band recommended) with magnetic base with 15' of coax cable to PL259 connector
- ☐ External speaker with 1/8" phone plug and/or earphones or headset attachment with VOX disabled

◇ Amateur Radio Resource - Type H[ ]   Function = Long-Range Communications | HF[2]

ARR-H[ ] identifies the amateur radio communication function and amateur radio equipment for a HF long to intermediate range communications station.
A General Class or higher License required. - **[**Sub Functions**]: m** - Mobile (suitable for vehicular use); **f** - Field

- ☐ 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' RG-8X or RG-8 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 EmComm support. NVIS capability recommended for tactical situations
- ☐ External speaker with 1/8" phone plug and/or earphones or headset attachment with VOX disabled

◇ Amateur Radio Operator – ARO -   [Any Base or Specialty Function]

ARO-[ ] – An amateur radio replacement communicator, capable of operating any of the listed functions. Append function designator to ARO (i.e., ARO-B) An ARO will always carry a common items kit.

◇ Each ARR is operated by a FCC licensed radio amateur proficient in that resource function.

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

AMATEUR RADIO PUBLIC SERVICE COMMUNICATIONS

Resource Guide - For ARES, RACES, EmComm and Public Service Communications

Amateur Radio Resource[1] (ARR)   ◇ **Types and recommended Equipment Kits**

Specialty Resource Functions   ◇ **All ARR Resource kits are portable** ◇

◇ Amateur Radio Resource - Type TM[ ]   Function = Tactical Data Messaging | VHF/UHF

ARR-TM[ ] identifies the amateur radio communication function and amateur radio equipment for operation as a "last mile" or close support messaging system providing traceable messaging and/or "radio Email" capability.

   [Sub Functions]: w - Winlink capable; **u** - User group's messaging software (specify if known)

☐ **ARR-B** equipment
☐ Terminal Node Controller (TNC) with necessary cables, accessories, and documentation
  (A soundcard implementation may be used in lieu of a hardware TNC at user group's discretion.)
☐ Computer (laptop or other w/min 2 serial ports or USB to serial adapters) suitable for portable operations, running mission applicable amateur radio software, with minimum of 25' CAT5 cable – (Printer, printing supplies, Scanner, AC adapter recommended)
☐ Software: Winlink Express, [Paclink + Email client] and/or user group's standard Data program(s)

◇ Amateur Radio Resource - Type SM[ ]   Function = Strategic (Long Range) Data Messaging HF[2]

ARR-SM[ ] identifies the amateur radio communication function and amateur radio equipment for a HF Strategic (long range) data messaging system providing traceable messaging and/or "radio Email" capability.

   [Sub Functions]: f - forwarding station[3]; **p** - Pactor; **s** - sound card (WINMOR/ARDOP/VARA/FLDIGI/PSK31)

☐ **ARR-TM[ ]** equipment
☐ **ARR-Hp** equipment (General Class License or higher required for operation)
☐ Pactor II or III modem required for Sub Functions **[f] & [p]**
☐ Software supporting user group's operational modes
☐ Sound Card Interface w/accessories if required to support sound based communications mode **[s]**

◇ Amateur Radio Resource - Type DA   Function = Data - APRS Operations | VHF/UHF

ARR-DA identifies the amateur radio communication function and amateur radio equipment for operation as an Automatic Positioning Reporting System (APRS). This provides officials a "view" of tracked units in real time along with short messaging from ARR-RT units or other Type DA stations.

☐ **ARR-B** 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, with minimum of 25' CAT5/6 cable
☐ Software: APRS program with digipeating capability

◇ Amateur Radio Resource - Type RT   Function = Data – Resource Tracking| VHF/UHF

ARR-RT identifies amateur radio equipment implementing the communications function of a resource tracker. This resource is used to transmit position data of mobile assets or other resources as requested by event or incident officials for reception and display with a ARR-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

◇ Amateur Radio Resource - Type DN[ ]   Function = Data Networking | MESH / LAN / WiFi

ARR-DN[ ] identifies amateur radio equipment implementing the communications function for a 802.[ ] resource providing a wireless LAN node(s) and "WiFi" in support of event or incident communications. - **[Sub Functions]: h** – HSMM MESH; **a** – AREDN MESH; **c** – Commercial

☐ Self contained wired or wireless 802.11[ ] MESH Node capable of functioning as a Bridge/Router/Access Point with antenna providing Ethernet or WiFi to the user. Node capable of operating on +12 VDC power
☐ Minimum of 50' Cat5 cable with POE interface (NY Standard)
☐ Support equipment (Mast & Stand, aiming device, CAT5 cable jumpers, LAN hub/switch, power etc.)

Notes: 1. To request a support operator, use Amateur Radio Operator (ARO) with appropriate Resource Type (-B)
         2. For MARS operations, equipment/capabilities must meet unit's operational requirements
         3. Local VHF data to/from out of area HF stations requiring Pactor II or III
         4. N type connectors may be encountered on non amateur radio equipment

◇ **Assignment Durations:**   ☐ Short – 12 hours or less in duration (Shift) ☐ Medium – 12 to 72 hour duration (Shifts)
                   ☐ Long – 72 hour or greater duration (Typically an away assignment)

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