

Knox County ARES/RACES Emcomm Operational Skills & Qualifications

Overview

The items in this document are associated with various emergency communications skills. They are divided into 3 categories depending upon breadth of applicability.

1. **Knox County Specific Requirements.** These include the use and operation of facilities and equipment that are specific to Knox County. Examples include the EOC radio room, communications trailer, town stations, etc.
2. **Maine Standards.** This section encompasses the digital software tools that are accepted for use within Maine for emergency communications. These include the NBEMS suite (fldigi, flmsg, flamp), RMS Express and SARTrack. Please note that these programs are not unique to Maine but are in general use throughout the USA and world. Operators who know how to use these programs can interoperate effectively with nearly any amateur radio emcomm group within the USA or Canada.
3. **National Standards.** This section relates to the use of standardized formats for creating formal traffic and to the accepted voicing practices for passing such traffic. The procedures are based on the ARRL NTS *Methods and Practices Guidelines* (MPG) which are recognized by NTS, ARES, various NGOs and now FEMA. Examples of formats include the ARRL radiogram and the ICS-213 form.

Some of these items require hands-on training. The town stations, communication trailer and portable tower would fit into this category. Training sessions will be scheduled. Others, such as RMS Express, may be substantially learned by any ham with a computer and internet connection. A third group requires a mix of home and on-the-air training. For example, formatting a radiogram can be done with pen and paper but voicing is best practiced on the air. Learning to effectively use NBEMS requires some study plus regular participation in NBEMS nets.

Qualifications will be assessed on an ongoing basis by the Knox ARES/RACES EC (KB1DBL) in concert with the leader for each skill category. Extended lapses of practice via drills, nets or other applicable methods will result in a request for the operator to requalify.

Member/Call Sign/License Class	Emcomm Operational Knowledge & Skills				
	Emcomm Overview	EOC Comm Familiarization	Field Capabilities: (Trailers & Town Stations)	Digital Programs	Formal Message Handling
Operator A				S	
Operator B			T	N S	
Operator C			CT T H TT	N R S	L
Letter Code Key:					
Field Capabilities (Trailers & Town Stations): CT = Communications Trailer, T = Town Station, H = Hospital Station, TT = Trailer Tower					
Digital Programs: N = NBEMS, R = RMS Express, S = SARTrack					
Formal Message Handling: L = NTS Net Liaison					

Group 1: Knox County Specific

Emcomm Overview (KB1DBL)

Objective: Understand the role of the radio operator in an EOC, shelter or other location. This is a basic requirement for Knox ARES/RACES operators.

- Familiarity with the ARRL ARES Manual (available on line).
- Understand the differences between ARES and RACES per FCC rules.
- Working familiarity with directed net operations and the net control function.
- Ability to keep accurate records and logs using applicable forms such as the ICS-214 or as directed by the EMA Director.
- Ability to properly format and transmit an ICS-213 form (send and reply).

EOC Communications Equipment Familiarization (KB1TCE)

Objective: Know the locations and uses of the equipment in the EOC Radio Room. Demonstrate a basic level of operational skills.

- Know how to use the D710 (VHF) and (as applicable) FT-100D with MFJ tuner (HF) on voice.
- Know how to use the swap drive and printer.
- Be able to open & create documents with Flmsg.
- Have knowledge of simplex paths to other stations in the event of repeater failure.

Communications Trailer Deployment (KB1DBL)

Objective: Safe set up of the Knox County Communications Trailer. Understand the trailer's electrical system and communications equipment.

- Know proper positioning of the trailer for functionality and safety
- Proper blocking and leveling of the trailer
- Set up and use of the generator(s) and procedures for shut down
- Antenna deployment and cabling.
- Know the locations and uses of the equipment in the trailer (radios and electrical system)
- Stowing of equipment after use and securing the trailer.

Standard Town Equipment Operation (KB1ZUN)

Objective: Understand the set up procedures for each assigned town station. This includes the radio, computer, power supply and Signalink interface.

- Set up of the equipment the station.
- Basic use of the TM-D710 per the "quick start" guide.
- Knowledge of simplex paths to other stations in the event of repeater failure.
- Maintain computer software by performing updates.
- Return equipment to "as found" settings and stow after usage.

Pen Bay Medical Center Station Operation (KB1ZUN)

Objective: Set up and use of the PBMC radio station.

- Retrieve from storage and set up equipment in the assigned location.
- Conduct voice operations as directed.
- Disconnect, pack and return equipment to storage.

Portable Tower Set Up (TBD)

Objective: Proper set up and use of the Kennebec portable tower.

- Select safe location for the trailer
- Stabilize and level the trailer
- Understand wind restrictions and proper guying of the tower.
- Proper practice to attach ropes, antennas, etc. to the top of the tower and cable routing.
- Tilt and raise tower procedures
- Lower and stow

Group 2: Maine Standards

Digital Communications

Maine ARES/RACES operators should develop the skills to use and maintain three applications, each of which has a particular set of purposes. Two of these, the NBEMS suite of programs and RMS Express, have broad but generally non-overlapping usage for general communications and file transfers. The other, SARTrack, is an APRS (Automatic Packet Reporting System) client for search & rescue and resource tracking. A good place to start for training is the Maine ARES/RACES digital communications site at midcoastdigiham.belljar.net.

NBEMS (KB1TCE)

Objective: Proper use of fldigi, flmsg and flamp per the Maine Digital Communications Guide.

NBEMS, as used in Maine, is primarily for VHF operation although it has value for regional HF use.

- Basic file handling skills.
- Install, configure and maintain the NBEMS software and set up the soundcard interface to the radio.
- Know the correct procedures for VHF and, as applicable, HF use.
- Be able to compose & send ICS and radiogram forms and spreadsheets using Flmsg.
- Know the proper use of flamp including preparing files for transmission, setting block sizes and repeats, requesting block fills, sending fills, saving and displaying received files.
- Know under what conditions file compression would be desirable.
- Regular participation in NBEMS nets and exercises to gain and maintain proficiency.

RMS Express (WD1O)

Objective: Proper use of RMS Express for sending/receiving messages via the Winlink radio-email system and for transferring messages via bulletin board systems. Primary modes include VHF packet and HF Winmor. Supplemental modes include telnet and Pactor. Detailed procedures are in the Maine Digital Communications Guide. A sheet with exercises is available. All elements with the exception of on-air practice may be completed with just a Windows PC and an internet connection.

- Basic file handling skills.
- Install, configure and maintain the RMS Express software and set up the soundcard and/or TNC interfaces to the radios.
- Use of call signs, tactical calls, SSIDs and Winlink secure log in.
- For HF, use the channel selection feature to find the best RMS server stations based on the calculated propagation quality.
- Be able to connect to one or more RMS servers using telnet, packet (if available), Winmor HF and Pactor HF (if available).
- Maintain a valid Winlink address (callsign@winlink.org).
- Understand the proper use of relays through packet nodes where required
- Be able to send a message with a Flmsg file attached.
- Be able to connect to a BBS to send and receive personal messages (p-mail) and bulletins. (On air required.)

SARTrack (WD1O)

Objective: Demonstrate competence with SARTrack for general tracking and search & rescue (SAR). If the operator has an APRS passcode, training may be accomplished with just a PC and internet connection. SARTrack is also available on all of the county and town radios.

- Connect SARTrack to the radio's packet TNC or to the internet.
- Be able to pull up various map types.
- Understand how map tiles are saved and can be recalled when operating without an internet connection.
- Know how to acquire information about the various objects that appear on the screen and understand the functionality of digipeaters and Igates.
- Be able to report positions in terms of latitude/longitude and UTM coordinate systems.
- Know how to use portable trackers (turn on, verify beaconing, proper positioning, turn off)

Group 3: National Standards

Handle Formal Traffic (KB1TCE)

Objective: Understand the proper formatting and voicing of radiograms and other formal messages using standardized phonetics and prowords as defined by the ARRL/*NTS Methods and Practices Guidelines*. A sheet with exercises is available.

- Knowledge of basic procedures as summarized in the radiogram tutorial at midcoastdigiham.belljar.net/Knox_Radiogram_Tutorial.pdf
- Practice voicing and the reception of formal traffic during practice sessions on the Knox ARES/RACES or Chimes nets.
- Understand the importance of signatures and the legal issues associated with handling 3rd party Health and Welfare traffic.
- For those who wish to serve as a liaison to NTS, regular participation in an NTS affiliated net is required. Initiating at least one formal radiogram per month through a section or local NTS affiliated net should be considered as a minimal standard.