

# Greater Manchester ARES Winter Training Exercise Very Preliminary Planning

Date and Time

January 23, 2021

0900 – 1300hr

On the air 1000 – 1200hr

(British Amateur Radio Teledata Group RTTY Sprint at this time)

# Weather Considerations

- ARES activation likely would occur during the recovery period after a storm, not during the height of the storm itself.
- Therefore, if there is an active storm on January 23rd, we could
  - activate the exercise from home to determine how a winter storm affects our ability to communicate on the frequencies scheduled for the exercise
  - do the field exercise in February

# Scenario

- Winter storm has disrupted power, internet, cell phone service and ARES repeaters in southern NH
- Manchester and several nearby towns are opening shelters for those without heat
- Greater Manchester ARES has been requested to provide backup radio communications to support shelter administration and citizen welfare messaging
- CDC Covid-19 precautions will be followed

# Training Concepts

- NBEMS and Winlink can be used on the same computer and on the same HF and VHF frequencies
  - NBEMS works like a PA system for messaging to multiple stations simultaneously
  - Winlink works like an intercom for station-to-station messaging
- Winlink gateway becomes a post office / email server when internet fails
  - Stations can drop off and pick up email at the post office
  - ***Even with no internet or CMS infrastructure, Winlink integrates HF & VHF messaging locally & regionally***
  - Switch to P2P if gateway / post office fails

# NBEMS and Winlink

## Key Capabilities

- NBEMS has the key capability of broadcasting over a wide area to reach many stations with the same message at the same time.
- Winlink has the key capability of integrating HF and VHF messaging, without operator intervention, at local gateways when the internet fails.

# Broad Objectives

- Build NBEMS and Winlink skills
- Maintain operating best practices for moderated open nets
- Test digital communication as primary HF and VHF mode
  - Maintains accuracy of original content
  - Voice requires +10 dB S/N
  - Digital modes operate at negative S/N
    - MT63 down to -8 dB S/N
    - PSK31 down to -10 dB S/N
    - Vara HF down to -15 to -18 dB S/N
- Test local post office feature of Winlink to integrate HF and VHF communications

# Specific Activities

- Set up and test equipment in the field during winter
- Use NBEMS and Winlink interchangeably on same equipment and frequency
- Exchange messages with State EOC by VHF and HF directly (NBEMS) and through local post offices (Winlink)
  - VHF use K1EHZ-10 on 145.710 as a local post office with Packet (direct & K1EHZ-12 digipeater) and Vara FM
  - HF use K1EHZ on 3595.0 KHz and/or 7102.3 KHz as local post office with VARA HF and ARDOP

# Support Request

- GM ARES requests assistance from adjacent ARES groups to provide communication links to the State EOC and to locations beyond the area affected by the storm
- Supporting stations connect to the FM digital net on 145.710 MHz, and to the HF digital net on 3595.0 KHz or 7102.3 KHz
  - on the Section digital frequency of 3582.0 KHz digital bandwidth is limited to 500 Hz
  - on 3595.0 & 7102.3 KHz VARA HF can be used at 2300 Hz
- GM ARES will provide NCS / moderator for HF and VHF nets



# Approximate Timing

- 0900 to 1000 hr
  - Deploy equipment and check operation
- 1000 – 1200 hr
  - VHF and HF Nets Operational
  - State EOC Requests Reports by NBEMS
  - All Stations Provide Reports by Winlink Local Post Office
- 1200 – 1300 hr
  - End exercise and pack up equipment

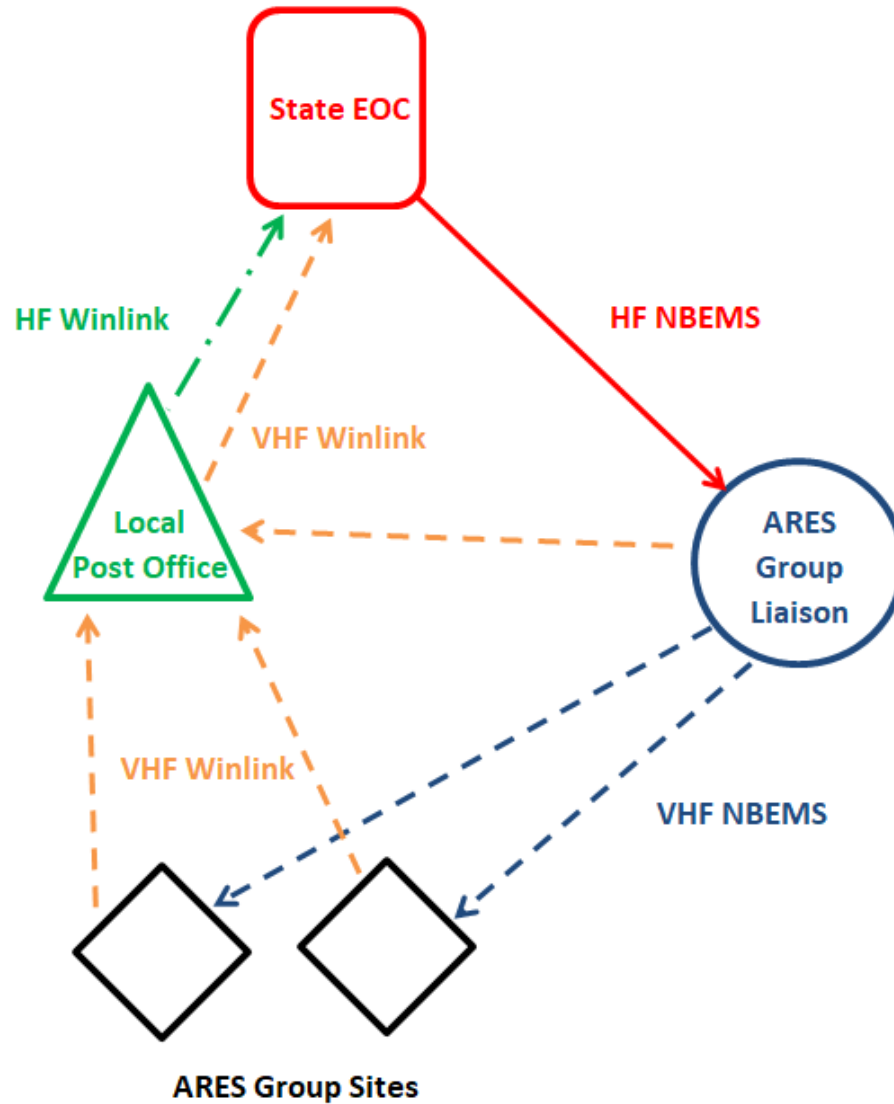
# Greater Manchester Field Sites

- Elliot Hospital
- Catholic Medical Center
- Manchester EOC
- Manchester Memorial High School Shelter
- Bedford High School Shelter
- Goffstown High School Shelter
- Henry Moore School Shelter, Candia
- Cawley Middle School Shelter, Hooksett

# Tentative Operator Assignments

- State EOC – N1CKM, KB8RPO – VHF & HF
- Elliot Hospital – KA1IJN – VHF
- Catholic Medical Center – KB1VOD - VHF
- Memorial High School Shelter – KC1KMM – VHF
- Bedford High School Shelter – TBD
- Goffstown High School Shelter - TBD
- Henry Moore School Shelter – N1KWG –VHF & HF
- Cawley Middle School Shelter – TBD
- HF Liaison and HF NCS – W1EAA
- VHF NCS and Manchester EOC – K1ATL

# Network Concept



# ARES Group Liaison Station

- VHF Radio & Antenna
- HF Radio & NVIS Antenna
- VHF Signalink
- HF Signalink
- One computer running Winlink Express and NBEMS connected to both radios
- \*\* Listen full-time on HF \*\*

# ARES Group Liaison Alternative Station

- HF / VHF Radio & Antennas
- Signalink
- Computer running Winlink Express and NBEMS
- \*\* Spend most of time listening on HF \*\*

# VHF Net

- VHF Net on simplex on 145.710 MHz (CH45)
- NCS is K1ATL
- ANCS to be designated by NCS as needed
- Previous survey shows Henry Moore School and Cawley Middle School may require relay to NCS
  - Test the VHF path to NCS and to K1EHZ-12 in Bow
  - Be prepared to use Packet through K1EHZ-12 digipeater in Bow
- K1EHZ-12 digipeater on Packet to K1EHZ-10 Local Post Office in Bedford
  - K1EHZ-12 will not be available as an internet gateway for packet or VARA FM

# HF Net

- Determine which fixed and mobile/portable stations have HF capability
- W1EAA HF NCS to moderate/manage traffic
- Use the current Winlink frequency 3595.0 KHz (dial), 3596.5 (center) for NBEMS and Winlink digital communications
- Use 7102.3 KHz (dial), 7103.8 (center) as back up
- Bedford gateway is local post office



# Digital Modes

- NBEMS
  - VHF
    - MT63-2KL
  - HF
    - Thor22
- Winlink
  - VHF
    - Packet when digital repeaters are needed to reach gateway
    - VARA FM
  - HF
    - VARA HF
    - ARDOP

# Training Messages

- Message flow is more important than content or number of messages for this exercise
- Use ICS-213 forms in FLmsg and in Winlink Express
- Draft a few training messages in advance if you like
- Keep messages short and simple
  - Weather conditions
  - Shelter reports
  - Road conditions & other situation reports
  - \*\*\*This is a Drill \*\*\*
- State EOC may request specific reports

# Remember!

- Focus is Messaging Process, not Number of Messages
- Review ICS-205 Communication Plan for the Exercise
- Monitor NBEMS for Incoming Messages from State EOC
- Reply to All Requests by Winlink Express to Local Post Office
- If Local Post Office fails, use Winlink Packet P2P on VHF and VARA HF P2P on HF to Reply to NBEMS requests

# Anticipated Issues

- Confusion about using NBEMS or Winlink
- Congestion at the local post office
  - HF and VHF can be accessed simultaneously
- HF interference or poor propagation

# Evaluation

- Each operator is asked to submit an evaluation
- Itemize what worked and didn't work
- Include a copy of the
  - ICS-214 Activity Log
  - ICS-309 log using the logging feature in Winlink Express

# Next Steps

- Identify training needs
- Identify operators who wish to participate
- Train on exercise parameters
- All are welcome to join GM ARES training between now and January 23rd

# NH Section Winlink Stations



- Winlink P2P +  
Wednesday Net Stations ●
- Wednesday Winlink  
Net Stations ●
- VHF Gateway ●
- VHF Digipeater ●
- HF Gateway ○

