

# Eastern MA ARES Exercise May8th 2021 Scenario and Guidelines



## Eastern MA ARES

Operation **“Unify”**

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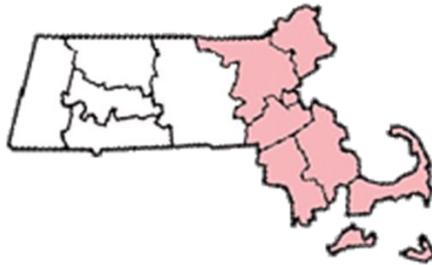
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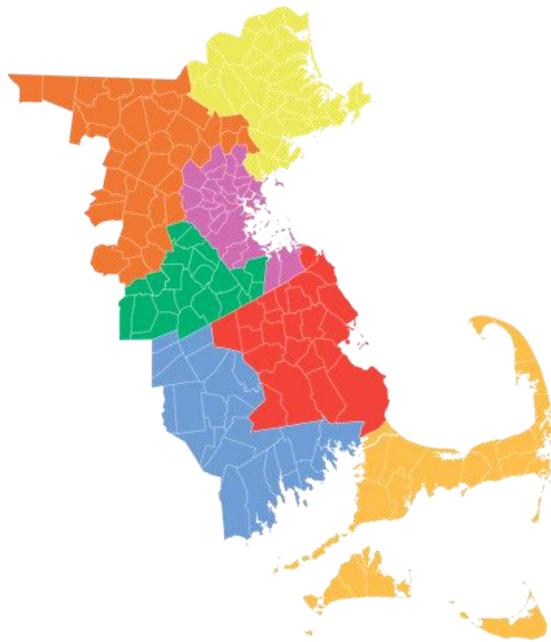
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***Revised pages with this draft version:***

TBA



## Eastern MA ARES Map



# Date and time of Exercise

Saturday May 8th, 2021

Setup time: 9:00am

Start Time: 10:00am

End Time: 12:00pm

Operational Duration: 2 hours

## Purpose

The Eastern MA Section Amateur Radio Emergency Service will conduct a Spring operations exercise to test its capability in establishing communications with stations within its section and outside it under simulated emergency conditions. The operational exercise called **“Unify”** will test the ability of several home stations and groups to communicate. The exercise will attempt to build upon the lessons learned from our past operational exercises.

# Scenario

On Sunday May 2<sup>nd</sup>, An Earth directed solar flare was unleashed by a huge sunspot near the center of the visible disc. This had a classification in the X range with a rating near 22. The initial x ray burst caused HF and low VHF blackouts in communications, especially at the poles. On Monday May 3<sup>rd</sup> the proton burst arrived triggering a radiation storm that caused severe plate charging on many satellites in Earth orbit. At least several hundred have failed outright, including several broadcast satellites. The loss of these satellites has created chaos in vital communications. On Tuesday May 4<sup>th</sup>, the ionized gas clouds arrived triggering a G5 class solar storm. This was the most intense observed in modern history of the electronics age. On Tuesday night the aurora from the Earth's magnetic field was visible all the way into Central America. Power grids in the northern latitudes, throughout the world, began seeing over voltages and current surges as the night went on. Power grids began seeing significant transformer damage in many locations with power outages cascading throughout the US.

On Wednesday May 5<sup>th</sup>, electrical power grids were mainly offline in much of the US, Europe and Asia. Without communications satellites, it has been difficult to estimate the situations south of the equator, but the situation is likely to be similar. Fortunately, this event was not as intense as the great Carrington Event of 1859. Transformer damage is not as severe as it could have been. Some operators took their systems offline as they realized the danger, sparing what would have been a several years long catastrophe. Grid operators believe that most systems could be back up in a few weeks. This is still a very long time.

The Red Cross, FEMA and state/local emergency management is working to establish shelters for those in need. It is fortunate that this event occurred in May and not in the middle of winter. The ongoing Pandemic has also led to difficulties in sheltering on such a wide geographic area.

Lack of fuel is the most serious situation currently other than the loss of commercial power. Most cell sites have been burning through their generator fuel and will be difficult to resupply as critical hospitals and emergency shelters are being prioritized for fuel delivery. It is likely that most cell service will be disrupted in the next day or so. The internet has fared much better than expected. Critical parts for government use are still functioning, there have been significant impacts on the commercial side due to power losses, but many elements are still operating. The lack of satellites has made sat phones essentially paperweights in this current situation.

The Red Cross is asking amateur radio operations nationwide to assist in providing both local and long haul communications. There are still enough Winlink sites worldwide and in the US to help with traffic passage. Amateur stations will be passing essential information to their designated clearinghouse site for distribution to the Red Cross.

Locally, the job is for ARES and RACES to support MEMA and our local emergency management in addition to our other partners. This will involve all of us to get this done.

# ARES groups and simulated activities

This exercise guideline is deliberately broad and generic in nature. ARES/RACES groups are free to adapt this scenario and conduct their exercise as needed for their groups. With the ongoing COVID-19 situation in MA, it will be unlikely that groups will be able to operate at EOCs and other municipal locations. Any activation of shelters would be simulated and by role play. Feel free to use your home stations or mobiles for this purpose. It is likely that most of the operations involved in this exercise will utilize home stations.

## Exercise Objectives

The objectives of this exercise are as follows:

- **Optional:** *Simulate* the activation of shelters in your area
- **Optional:** *Simulate* the activation of EOC stations in your area
- Establish and conduct a tactical net on simplex 2m FM/ repeater for your group
- *Simulate* contact with any Town EOC RACES stations (Home is ok if COVID restricted)
- Establish contact with other ARES districts where possible
- Establish an HF 75m voice net for the Eastern MA section (and potentially other areas)
- Establish a 60m net in inland MA to cover a large area
- Pass an NTS type message on VHF 2 meters and/or 440mhz UHF
- Pass a SKYWARN and/or tactical message on voice 2 meters and on the HF net
- **Optional:** Pass a SKYWARN report using VHF/HF Winlink to a collection station to **WX1BOX** via Winlink email address [WX1BOX@winlink.org](mailto:WX1BOX@winlink.org)
- **Optional:** Send two Red Cross messages. One to a Red Cross predetermined clearinghouse tactical station (ARC-NORTH-EAST) by HF or VHF Winlink and another to a mapping station. (Will be referenced out to the Red Cross nationwide exercise document for procedure)
- **Optional:** Send messages by HF Winlink to a designated ARES station
- **Optional:** Send messages by VHF/UHF RMS Winlink if you have no HF digital or simply want to practice Winlink locally
- **Optional:** Send messages locally by VHF NBEMS
- **Optional:** Send HF messages by NBEMS (experimental)
- Check in on the NEW-ENG3 9123 Echolink node
- Establish communications with the WMA Section ARES on HF voice, Winlink and NBEMS

# Operational Ground Rules

## ARES/RACES

ARES/RACES groups can fully adapt and change their individual plans to suit the needs of the local group.

## Message Handling

Message handling, on voice, will occur on 2 meters and on HF. Local groups are encouraged to setup an NTS net on 2 meters and get the messages into the system. On HF, messages will be tactical in nature and may include SKYWARN reports for NWS.

## Setup and Timeline

Setup time will be 9am. The exercise will begin promptly at 10am. It will last approximately 2 hours and will end at 1200pm. Timelines may be adjusted accordingly in response to turnout and early completions of primary objectives.

## Operational Disclaimers

Due to the proliferation of radio scanners and the possibility of misconstrued information by the public, all tactical voice messages *that can be misconstrued* will be preceded by the words **“This is a Drill”**. Any NTS formal messages will have the words **“This is a drill X”** as the first five words in the body text. In this time of national public concern, we must make all efforts to ensure that the general populace is not misled and that amateur radio is not portrayed in a negative manner.

# NET and mode of operations

## HF voice operation

An HF net will be started on 75m in MA. It will take tactical messages and SKYWARN reports, as well as the testing of signal paths. A 60m net will also be set up for similar functions as the 75m net. Both nets should be run inland in a more centralized location in MA away from coastal sections. Messages can also include situation reports from your district or ARES/RACES group. They can also be lists of participating stations and operators so we have them for the record.

## VHF/UHF voice operation

ARES/RACES groups are requested to set up voice nets as you normally do for exercises. These nets can be repeater, simplex or any combination of the two. Content of the voice components of the exercise will be set by the local ARES group.

## HF Winlink operation (Optional)

ARES/RACES groups may optionally try to pass messages to a designated receiving station ([KD1CY@winlink.org](mailto:KD1CY@winlink.org)) by Winlink email on HF. Stations would try to find a winlink HF station that they can reach. This could be a challenge for some considering recent band conditions, but may be worth considering. You can find a map and list of HF winlink RMS stations on the winlink.org website. Messages can include shelter status updates, situation reports from your district or ARES group. They can also be lists of participating stations and operators so we have them for the record.

## **VHF/UHF Winlink operation (Optional)**

There will be a Winlink VHF/UHF message component. ARES groups will send a Winlink message to their local coordinator or District coordinator. Messages can include situation reports from your district or ARES group. They can also be lists of participating stations and operators so we have them for the record.

## **SKYWARN VHF Winlink operation (Optional)**

There will be a WINLINK VHF SKYWARN operation. ARES groups should send a severe weather report to the designated SKYWARN collection station WX1BOX via [WX1BOX@winlink.org](mailto:WX1BOX@winlink.org)

The severe weather report is a form in Winlink express under standard templates, weather forms.

## **Red Cross Winlink operation (Optional)**

There will be a Red Cross Winlink component associated with the afternoon session of the nationwide Red Cross communications exercise. This section will be referenced out to that document.

## **VHF NBEMS operation (Optional)**

ARES groups may optionally consider attempting to send messages and forms locally by VHF/UHF NBEMS. Frequencies would be determined by the local ARES group. Messages can include situation reports from your district or ARES group. They can also be lists of participating stations and operators so we have them for the record.

## **HF NBEMS operation (Optional)**

We can also try to attempt an HF NBEMS operation on 75m. This will be experimental and can convey some of the same information to be sent as listed earlier in the VHF NBEMS section. We will be using 3583.5 kHz for this part of the exercise. The start mode will be Thor 22 with a 1500 Hz center. Messages can be text or Flmsg forms. This section will be experimental and optional.

## **Echolink operation**

Echolink will be operational for this exercise. It will be the New-Eng3 node 9123. It will be monitored by several ARES leaders and will serve as an online component.

## **NTS operation**

Local groups are encouraged to pass some NTS traffic into the system. How that is done will be left to the discretion of the local group.

# Minute Man Repeater System operation

The Minute Man Repeater system (MMRA) will be active at 1000 AM. There will be a net conducted that can take NTS or other traffic during the exercise.

## Metrics for participation

All ARES groups participating in the exercise are encouraged to send a list of participants and activities by email after the exercise so a good overview of participants can be established. Send to your local ARES EC and/or DEC. If you are unaware of who your leader is, Visit the Eastern MA ARES website at <https://ema.arrl.org/ares/>

## Group Operations

There will be several groups operating during this exercise. They are RACES/ARES or some combination thereof. They will be added below in succeeding drafts of this document.

# Interoperations with WMA Section ARES

Since Western MA section ARES is also exercising on the May 8<sup>th</sup> date, it would be prudent to attempt some interoperability between the section ARES groups.

## HF Inter-operations

Each of the Eastern MA ARES districts should direct one or two of their HF home stations to attempt to check into the W MA ARES net (Frequency **TBA**)

The Western MA Section ARES should have one or two of its HF stations check into the Eastern MA HF net on 60m and 75m (frequencies listed below in the frequency section) (All pending Western MA SEC approval)

## HF Digital Inter-operations NBEMS and Winlink

Operators in both ARES sections can attempt NBEMS on 3583.5 kHz using THOR22 at 1500 hz center. In future exercises, a more centralized net will be attempted.

Operators in western MA are also invited to send in a severe weather report form in Winlink to [WX1BOX@winlink.org](mailto:WX1BOX@winlink.org) by VHF or HF.

# Exercise Frequency Usage

**Two meter local voice nets: - The following is a list of key frequencies with any additional frequencies at the discretion of local ARES Group**

147.000-Dartmouth Repeater (PL: 67.0 Hz)  
147.180-Bridgewater Repeater (PL: 67.0 Hz)  
146.895-Walpole Repeater (PL: 123.0 Hz)  
145.470-Danvers Repeater (PL: 136.5 Hz)  
147.435-Simplex (PL:110.9 Hz)

The MMRA Network will be utilized at the section level – a link to the repeaters linked up is listed at the end of the frequency usage document

**Two meter local NTS net: At discretion of local ARES Group – At the section level – the MMRA Network will be utilized for section NTS traffic**

**UHF voice and/or NTS net: At the discretion of the local ARES Group**

**VHF/UHF NBEMS: At the discretion of the local ARES Group**

**Winlink Express VHF: 145.090**

**Primary region wide 75m HF Operations: 3930 kHz LSB (Primary)**

**Primary region wide 60m HF Operations: 5330.5 kHz USB (Secondary)**

**HF Winlink stations: See online list on the Winlink.org site**

**HF NBEMS 75m: 3583.5 kHz Start Mode: Thor 22 1500 Hz center**

**Echolink: NEW-ENG3 node 9123 IRLP: 9123**

**Minute Man Repeater system (MMRA) linked repeaters VHF/UHF (see MMRA.org for repeater list): [http://www.mmra.org/repeaters/repeater\\_index\\_by\\_linkstate.htm](http://www.mmra.org/repeaters/repeater_index_by_linkstate.htm)**