The Cape & Islands ARES District in conjunction with the Eastern MA Section ARES Exercise #70 Scenario and Guidelines



Cape Cod ARES

Operation "Frozen Days"

Frank Olaughlin – WQ1O
Cape&Islands ARES DEC

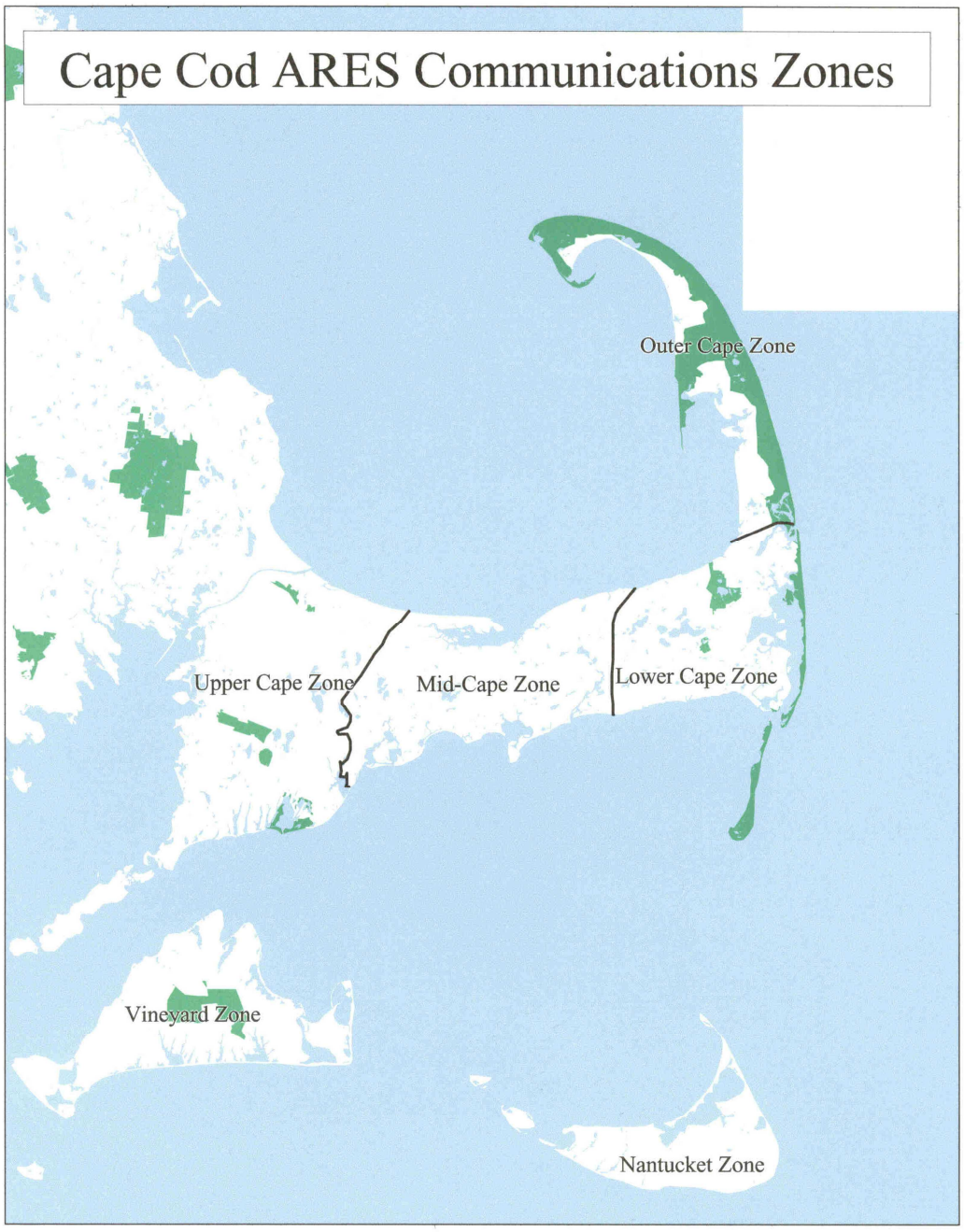
Draft Version 1.3
01-30-21

Table of Contents

Purpose 1
Scenario 2
Cape District Exercise Objectives 3
Operational Ground Rules 3
  Communications Options to be utilized 3
  Field teams must be completely self sufficient 4
  Message Handling 4
  Setup and Timeline 4
  Operational Disclaimers 4
Operational Players and Field Units 5
  Cape Cod ARES field site in Sandwich 5
  Upper Cape Field Team 5
  Communications with the islands 5
  Home Operator Stations 6
  Lower Cape shelter field team 6
VHF NET Operations 7
  Primary Tactical NET 7
  Operating Procedure for the Tactical NET 7
VHF Winlink operations (Optional) 7
VHF NBEMS operations (Optional) 8
VHF Winlink P2P (Optional) 8
Echolink operations 8
HF Operations 8
  HF voice operations 8
  HF Winlink Operation 8
Problem Solving Situations and Improvisation 9
  Unexpected situations 9
Incident Command Structure (ICS) 9
Critique and Evaluation of the Exercise 9
This is an *Advanced* Level Exercise 9
Cape-Exercise Frequency Usage 10
Eastern MA exercise participation 11
  Section Wide possible objectives 12
  VHF/UHF operations 12
  HF Operations 12
  Digital operations 13
  Frequency usage 14

Revised pages with this draft version: Revised Page 14

Cape Cod ARES Zone Map



Date of Exercise

Saturday February 6th, 2021
Setup time: 8:30am
Start Time: 10:00am
End Time: 12:00pm
Operational Duration: 2 hours

Purpose

The Cape Cod and Islands District Amateur Radio Emergency Service will conduct a winter field operations exercise to test its capability in establishing communications with stations within its district and outside it under emergency conditions. The operational exercise called **"Operation Frozen Days"** will test the ability of several field stations to communicate. This will also be a drill to test some of our primary stations and other ARES member home stations. The exercise will attempt to build upon the lessons learned from our past operational exercises. This exercise will also serve as a basis for the rest of the Eastern MA ARES Section to participate and facilitate its own local and district operations. This will be covered later in the document.

Scenario

On Saturday January 30th, a period of extreme winter weather began affecting the MA region. A major winter storm moved up the east coast intensifying rapidly into a dangerous storm. Heavy rain and wind hit Cape Cod and the islands very hard. Intense low pressure near 952mb with Winds gusts over 94mph raked the area causing large amounts of damage to trees, power lines, roofs, and other structures. Coastal flooding damage over 2 consecutive high tides caused heavy water inundation and damage to coastal structures. Over 142,000 are without power on the Cape and Islands alone. In other parts of MA, communities were not spared from their own damage issues. Winds gusted over 80mph in Boston metro and over 75mph in metro west. Heavy snow blanketed much of MA outside of the SE part of the state. Over 24" of snow has fallen in western and central MA. Snow in central MA and the remainder of eastern MA was heavy and wet. Many trees and power line haves fallen in much of the state. Much of MA has been paralyzed. Communications in much of MA were impacted heavily. ARES and RACES in many parts of MA have been active with ongoing operations.

On Wednesday February 3rd, a highly amplified pattern unleashed a second system which impacted all of MA with intense winter conditions. Cape Cod and the Islands was slammed again with wind gusts over 85mph from intense low pressure near 960mb southeast of Nantucket. It started as rain and then changed to heavy wet gorilla glue snow which rapidly froze on trees and power lines and cold air rushed into the system. Another round of coastal flooding took place all along the MA east coast for two tide cycles. The Cape and Islands has power out virtually everywhere. Many public safety and other systems have suffered severe antenna damage over the Cape and both Islands. The combination of both storms has left several amateur radio repeater antennas in about the same poor shape as public safety and cell systems.

In the rest of MA, the second system has dropped another 22-24" of snow with increasing paralysis from Boston to Western MA. Roof collapses have been increasing in central and eastern MA. MEMA has its hands full with an ongoing COVID-19 response and a Commonwealth barely able to move. Most people are sheltering at home as best they can. Some facilities that remain accessible and undamaged are being set up for people with special needs. The National Guard has been activated by Governor Baker and is helping with transportation and logistics. Amateur radio operators from ARES and RACES are assisting EOCs and our other partners in communications. The American Red Cross has initiated its non-congregate shelter operations. It is a difficult situation as many hotels and motels are without power. It may be forced to begin congregate sheltering in many parts of the state. The COVID pandemic will make such operations very hard to accomplish, but they will do the best they can under a very adverse situation.

Back on the Cape and Islands, ARES has been working with the county REPC and Incident Management Team at the county facility. Due to COVID, the Multi Agency Coordination Center (MACC) has only limited staff for in person operations. Virtual online operations have become almost impossible with the loss of cell and internet coverage. Access to that area is very difficult with hundreds of trees down across many roads. With the antennas destroyed at the county facility including heavy damage to the public safety tower, expedient antennas are being set up by ARES with help from the Barnstable County Sheriff's Office. Many town EOC's have had damage to their communications towers. ARES has set up field sites on the upper Cape including Sandwich and Falmouth. A lower Cape field site is also to be set up. Town DPW are helping with transport. This will be a difficult operation. Extreme cold covers all of MA on this day (Saturday February 6th). This is where our previous 20 years of exercises will help us. This is also the Blizzard of 78 anniversary after all…….Safety is Job #1……Let's get it done.

Cape District Exercise Objectives

The objectives of this exercise are as follows:

- Deploy field operations sites to Sandwich, Falmouth and the lower Cape
- Establish contact with other ARES districts and their EOCs where possible
- Test zone relay operations with Home Stations
- Communicate with the Nantucket and Martha's Vineyard ARES/RACES stations
- Use HF 75m and 60m voice in the district and attempt contact with the off Cape HF net
- Allow our new people to get some operating experience and field orientation
- Provide guidance for the rest of the Eastern MA ARES section to participate and develop their own local exercise operations
- Send Winlink SKYWARN and ICS-213 message on 2M VHF FM (Optional)
- Send Winlink SKYWARN and ICS-213 message on HF (Optional)
- Send NBEMS messages on VHF (Optional)
- Send NBEMS messages on HF (Optional)
- Pass NTS formatted messages on VHF FM
- Check in on Echolink Node 9123

Operational Ground Rules

Communications Options to be utilized

Communications options for this exercise will be 2m FM, 440 FM UHF (on field sites), HF 75M and 60M voice. There will be a tactical net on 146.580 MHz FM simplex. VHF and HF Winlink will be used (Optional) along with VHF/HF NBEMS (Optional). Echolink will also be utilized (Optional).

Field teams must be completely self sufficient

The ARES field teams must bring all of their own equipment and supplies. Served agency communications equipment may ***NOT*** be used in any way. ***We only use what we have brought with us.*** Teams operating inside RACES EOC's or other served agency sites are exempt, of course.

Message Handling

Message handling, on voice, will include the sending of an NTS type formatted message from each field site to 2m VHF net control. The message will include number of operators and whether they are using battery, generator power or both.

Setup and Timeline

Setup time will be 8:30am. The exercise will begin promptly at 10am (HF). The VHF simplex net will begin at 10:30am. The exercise will last approximately 2 hours and will end at 12pm. 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.

Operational Players and Field Units

Cape Cod ARES field site in Sandwich

The Cape Cod ARES Sandwich field site will operate:

- 2m FM 175W station
- 440 UHF simplex
- 75M and 60M voice SSB
- VHF/HF Winlink and NBEMS

The site in Sandwich will be established at the lower parking lot, of the Human Services Building. It will serve as a field site for medium range coverage. It will operate self-sufficiently.

Upper Cape Field Team

The Upper Cape field team (Location to be determined) will operate VHF/UHF voice, and possibly Winlink VHF (Optional). It will operate self-sufficiently.

Communications with the islands

Communications with the Islands will be attempted from the Net control station along with ARES home stations, field teams and any EOC stations. Home relay stations can also be employed where necessary to establish contacts by simplex. Nantucket will likely have one or two stations active. Islands communications are critical, as always. We will also accept any contact with any mobile stations on the islands.

Home Operator Stations

Home operator stations will be of value in this exercise as stations that will communicate with the NCS site and shelter field units within their range. We will continue our test of home stations and their ability to serve as backup stations to ARES/RACES EOCs. Home stations can be the primary anchor points for our zones of operation within the district. This exercise will give our member's home stations a chance for testing of any new or experimental equipment, as well as, their emergency power backup systems. This will be an ideal time for the home operators to fully evaluate their stations performance.

Lower Cape shelter field team

The Lower Cape shelter field team will operate at a location TBA. It will operate VHF/UHF and HF voice. It may also operate Winlink and NBEMS HF and/or VHF (Optional). Other bands may be used if they are available. It will operate self-sufficiently.

VHF NET Operations

Primary Tactical NET

The primary tactical NET will operate on the Primary ***simplex*** operating frequency of 146.580 using FM. The net will begin ***30 minutes after the 10am start of the exercise*** beginning at 10:30am. HF operations will begin first at 10am sharp. This will be covered in the HF section of the document. The VHF NET may remain at 146.580 or move, if necessary, to alternate frequencies as required for the exercise.

Operating Procedure for the Tactical NET

The operating procedure for this exercise will consist of a roll call format. The NCS station will do a staggered priority and geographical call up. 1st call will be for ARES/RACES field sites. The second call up will be for any EOC stations in our district (including the Islands). The third call up will be for home and other stations by order of zones in sequence (Outer Cape, Lower Cape, Mid Cape, Upper Cape, Nantucket, and Martha's Vineyard).
Last call up will be for stations outside the Cape/Islands district. After the initial call up, NCS will call each field site and ask for any NTS messaging from those sites. NCS will take one message from each site. NCS will then poll all field sites and individual check in stations which will read aloud those stations they could hear on the net and attempt direct contact with each of them when requested by the NCS station. This will give our operators valuable contacts and air time. We will evaluate successful communications paths based on that data. All stations will keep a log of whom they can hear. Mobile units (if any) may call NCS outside of the roll call when any mobile operators feel the necessity of doing so.

VHF Winlink operations (Optional)

VHF winlink operations for the Cape and Islands district will involve the sending of a winlink ICS-213 message to the DEC WQ1O at email wq1o@winlink.org using the W1SGL-10 RMS station in Barnstable on 145.090mhz. The ICS-213 will state the location of your station and the number of modes that you used in the exercise. Any field site or home station may send this message. Stations using Winlink are also encouraged to send a winlink message using an ICS-213 form to our Eastern MA ARES Section Emergency Coordinator Rob Macedo at email kd1cy@winlink.org . This will contain the same information as the messages to the DEC.

A SKYWARN message can also be sent to wx1box@winlink.org using the SKYWARN form in Winlink.

VHF NBEMS operations (Optional)

Cape and Islands district operators may try NBEMS on VHF to try to connect to any other station using simplex 145.750 MHz. Mode will be 8PSK500F at 1800 Hz.

VHF Winlink P2P (Optional)

Cape and Islands district operators may try VHF Winlink P2P to try to connect to any other station using simplex 145.730 MHz using Packet.

Echolink operations

Operators with internet access are encouraged to check in on Echolink New-ENG3 9123 node. Although our scenario makes Echolink use unlikely in the area, we wanted to give additional exposure for our members to additional modes of operation.

HF Operations

HF voice operations

HF stations in the Cape Cod and Islands district will attempt contact with the Eastern MA section ARES HF nets which be anchored off Cape to our north. The Net will begin at 10am sharp. The VHF Net will begin 30 minutes later at 10:30am. The reason for this change is that some members would like to participate in both HF and the VHF net. Staggering the time slot will make it easier for those operators to utilize both, especially if they are operating alone at home. Two nets on HF will be operating and anchored off Cape. The first will be 75m at 3930 kHz. The second will be 60m at 5330.5 kHz. Cape field sites and home stations are encouraged to check in on one or both nets. In the future we will be increasing our use of 60m for ARES/RACES operations for drills and actual emcomm. If stations wish to contact each other, they may ask net control for permission to do so.

HF Winlink Operation

Stations having HF Winlink capability are free to attempt to send the messages described under the VHF winlink section by HF. A list of currently operating HF winlink RMS stations with locations and modes can be found on the winlink.org online site.

Problem Solving Situations and Improvisation

Unexpected situations

There will be one or two unannounced problem situations in the exercise. This will require the operators to improvise and think "out of the box". These situations will enhance our ability to adapt to rapidly changing conditions. They will occur without notice, so be prepared to act quickly.

Incident Command Structure (ICS)

ICS functions will be assigned before operations begin at the site. An Incident action plan will be created, if time permits, and distributed for all operators participating. We shall continue to use the ICS in future exercises in order for us to become knowledgeable in operating under this system for served agencies.

Critique and Evaluation of the Exercise

We will have a meeting to critique and analyze the exercise no later than 15 ***days*** after the exercise. All participants should bring their notes and observations for evaluation by the group. All exercises will produce information that could be useful to future operations. Even seemingly small details can prove valuable to our training and development.

This is an *Advanced* Level Exercise

Although CCARES has had some multi-site large exercises in the past, this will be an advanced level operations drill rivaling some of the earlier ones. It could be technically demanding on the field sites.

Cape-Exercise Frequency Usage

Primary Tactical NET: 146.580 Primary FM Simplex

Secondary Simplex 2m: 147.465 FM Simplex

440mhz simplex: 446.000

Primary 75m HF Operations: 3930khz

Primary 60m HF Operations: 5330.5 kHz

VHF Winlink: W1SGL-10 RMS station on 145.090 MHz

HF Winlink: See www.winlink.org website

HF NBEMS: 3583.5 kHz Mode: Thor 22 1500hz

VHF NBEMS: 145.750 MHz

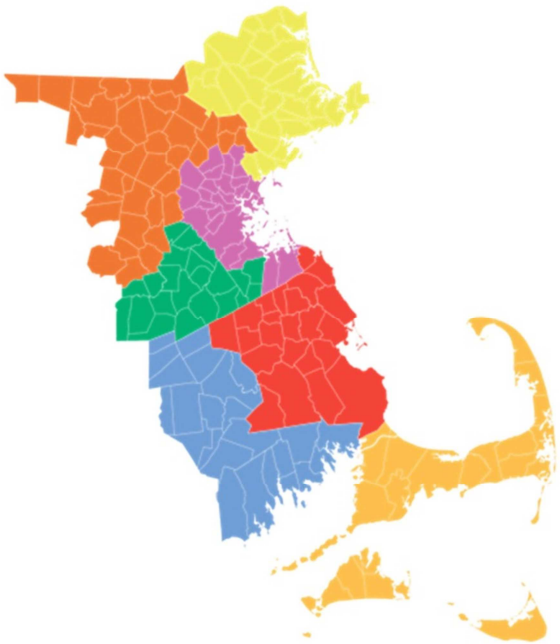
Winlink P2P: 145.730 MHz

Echolink: New-Eng3 9123 node

Eastern MA exercise participation



Eastern MA ARES Map



Although the primary focus of this exercise design is for the annual Cape Winter exercise, The Eastern MA section ARES likes to take advantage of any training and exercise opportunities beyond the normal Simulated Emergency Tests and region wide full exercises. The scenario was left quite broad allowing for many local and district based emcomm groups to develop plans for their own participation. You are free to use any of the operational modes listed earlier in the document or add your own as needed. Some basic objectives are listed below. These are not all requirements. Groups may use what works for them.

Section Wide possible objectives

- Simulate the activation of shelters in your area
- 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
- Establish contact with other ARES districts where possible
- Establish an HF 75m and 60m voice net for all of MA (and potentially other areas)
- 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 on the Winlink SKYWARN form using VHF/HF Winlink RMS to wx1box@winlink.org

- Optional: Pass an ICS-213 message form on VHF/HF Winlink RMS to kd1cy@winlink.org
- Optional: Send messages to other stations by VHF/UHF Winlink P2P 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

VHF/UHF operations

Local ARES or RACES groups are free to determine their own local modes of operations for this exercise.

HF Operations

HF nets are to be set up on 75m and 60m. They will run for the duration of the exercise. There will be an increasing use of 60m in section exercises. 75m operation will also still occur to ensure that those without 60m can still participate.

Digital operations

Digital modes may be used as an optional activity by any group in the section. You can use your own modes and frequencies in addition to the any Winlink and NBEMS operations.

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)
146.895-Walpole Repeater (PL: 123.0 Hz)
146.985-Blue Hill Science Center – Milton, MA (linked) (PL 88.5 Hz)
449.125-Blue Hill Science Center – Milton MA (linked) (PL: 146.2 Hz)
446.325-New England Sci-Tech - Natick, MA (PL: 146.2 Hz)
147.435-Western Middlesex ARES Simplex (PL: 110.9 Hz)
146.580-Cape Cod ARES Simplex (No PL)

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 FM

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.html