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Southern Grafton County New Hampshire ARES Communications Operations Guidelines

1.0 Area served

Currently, the area served by this group includes these New Hampshire communities: Canaan, Dorchester, Enfield, Etna, Grafton, Groton, Hanover, Lebanon, Lyme, Orange, and West Lebanon. There is, however, a wedged shaped area bordered by Orford to the north, Plainfield to the south, and Newbury/Sutton to the Southeast, which comprises the member and resource territory. This is thought of as the Dartmouth/Sunapee corridor and is the area in New Hampshire that this group tends to serve. This group also serves the Vermont communities that are near this territory.

2.0 Operations Plan Goals

There are four main goals.

The first is to provide reliable tactical and logistical emergency communications between the area we serve and NHHSEM.
The second is to provide reliable tactical and logistical emergency communications at the request of local authorities.
The third is being ready to provide reliable tactical and logistical emergency communications out of the state if required.
The fourth is to assist in providing resources, such as member or equipment support to other regions when possible.

3.0 Assumptions

The operations plan assumes that regular communication is in some way unavailable to authorities or agencies that we serve. Telephone and other radio facilities are overloaded, damaged, or don't exist. Adaptability, mobility, and responsiveness are required. The information must be passed accurately and in a timely fashion.

4.0 Methods/Modes

4.1 Call Signs: The call sign for SGARES/NHARES liaison station is W1GRF.
The method and mode of communication is very dependant upon the situation.

Local to/from state tactical communication is mainly accomplished using HF 80 meter or sometimes 40 meter lower side band. Logistical communication is mainly accomplished using a network of VHF Telpac packet stations, HF pactor stations and Winlink 2000. The information is then sent to NHHSEM. ARES@nhoem.state.nh.us

There are currently several fixed stations that could be used as EOCs with full HF capabilities, VHF packet, and VHF/UHF voice. A number of these have generator back up. Some have battery backup. They also have phone and Internet access and at locations that may allow them to have service, when others may not. Emergency generators are available for other fixed stations if needed. There are at least two mobile stations that can provide the HF and VHF/UHF voice communications. There are at least two mobile stations packet capable. There is currently the ability to provide multiple (several) local sites with VHF voice, and VHF packet for tactical and logistical information. All could be set up with HF also. In general the HF portable and mobile stations use NIVS antennas for 80m and 40m.

Special assets include the W1FN VHF repeater with generator backup on Moose Mountain in Hanover. UHF voice repeaters are available as well. Also, we have available multiple mobile and portable towers with the ability to mount VHF and/or HF antennas.

Local communications can be accomplished in many ways. The primary mode for tactical traffic is by VHF repeater located on Moose Mountain in Hanover, NH. Logistical can be achieved with multiple packet sites, with W1FN-7 and WB1BRE-7 Ka-nodes.

As a backup, local communication could be by simplex frequencies. This can be for packet, or voice VHF. The tactical communications could also switch to one of the UHF repeaters, which have links allowing wider coverage than a single repeater.

SGARES has access to the Winlink 2000 emcomm system by HF pactor I, II, and III communication. This allows large files to be sent to and received from the Internet by HF. In addition, Email traffic can be sent and received via VHF packet. Currently, there is a Winlink 2000 VHF 1200 baud packet PMBO/Telpac node on 145.570 in Etna, NH. It is running 24/7 with good access to the Moose Mountain, W1FN-7 Ka-node. Also, there is K1SGA PMBO using HF Pactor 1, 2, or 3.

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5.0 Configuration

The most likely configuration in responding to an incident would be a fixed or portable station as an EOC. The EOC should be at the same location as the local incident commander. That station would have HF, VHF voice, UHF voice, and VHF packet. Whether or not it is using emergency power would depend upon the need. There would be one or two backup sites with similar capabilities. Space and resources would dictate whether the VHF NCS would be onsite or off. Off site NCS with emergency backup is preferred. There would be a backup VHF net control station. Multiple satellite stations would be set up in a portable fashion that would have at a minimum VHF Voice (repeater or simplex) and VHF packet. The packet satellite sites would have the ability to send logistic and other information either through the local EOC or to a distant site such as HSEM. In most cases, traffic to and from HSEM would flow through the EOC from the satellites, by VHF voice or packet. HF or packet, depending on content, then sends the information to the NHHSEM. Satellite site to satellite side traffic can take place by either mode, but, preferably off the net frequency. Packet information may be sent via a node to NHHSEM or from satellite site to satellite site, directly or via a node. If the Internet is still accessible 2-meter VHF packet can be used to send and receive email. If the destination for traffic still has access to the Internet, the HF winlink system can be used for passing traffic such as email or email with large attachments.

If the incident is only local, the HF portion may or may not be needed. The mode of communication will depend upon content and type of information to be passed. Location will depend upon ease of passing information to and from the appropriate people.

Important considerations for deploy are: where the traffic is coming from, where the traffic is going to, what kind of equipment can be activated at each site, what kind of traffic needs to be passed, and how long will the activation be anticipated to last.

6.0 Frequencies

The Frequencies used are based on the State plan and local repeaters.

The primary repeaters are located in Hanover, NH on Moose Mountain.
The primary VHF repeater frequency is 145.330 minus (-) offset .600 100 Hz PL
The primary UHF repeater frequency is 443.550 plus (+) offset 5.000 100 Hz PL
The Secondary VHF repeater frequency is 147.150 plus (+) offset .600 no PL
The SGARES Tactical simplex frequency is 146.580

The second alternate VHF repeater is on Mt. Ascutney on 146.760 minus offset .600 PL 110.9

The portable repeater frequency is 147.120 plus (+) offset .600 100 Hz PL

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NHARES and other NHARES areas and the Red Team may be reached using the K1JY system. Local Moose Mountain access is on 441.950 plus (+) offset 88.5 Hz PL

The Statewide Primary Tactical frequency is 147.510.
The primary Nighttime HF frequency for statewide communication is 3.943 +/-
The primary Daytime HF frequency for statewide communications is 7.273 +/-
The primary packet frequency is 145.570

The packet frequency for Moose Mountain coverage is 145.570 for W1FN-8 Digipeater or W1FN-7 as a KA-node.

Also, WB1BRE-7 as the central Ka-node on 145.570

The packet frequency for reaching NHARES and/or the HSEM is 145.570, via KA-node W1FN-7 (on Moose Mountain). This then gives access to BBSWOK for messages, other packet networks in the Concord area, or IPOEM for leadership conferences.

WB1BRE (145.570) or W1FN-8 (145.570) is used as the digipeater for packet operations.

The primary packet path to West Rutland is thru KA-node WB1BRE-7 and then thru KA-node WG1Q-7 on 145.570. This gives access to W1GMW at the Rutland office of the Central Vermont/New Hampshire Chapter of the American Red Cross.

K1SGA-10 Winlink 2000 Telpac node in Etna is on 145.570 1200 baud packet
K1SGA Winlink 2000 PMBO Pactor 1, 2 on 3596, 7063, 10122, 14101.2. and Pactor 3 3630, 7103.2, 10145, 14101.2 Center frequencies
KB1MOV-10 Telpac node in Hanover on 145.570

Echolink is available on the .330 primary repeater. To link the .330 repeater to any echolink station send the DTMF tones "C" followed by the echolink station number. To Disconnect, send the tone "D". To disconnect any and all links send "DA". To check on the status send "08". Conferencing up to 3 stations is allowed. The K1JY-R statewide system is 1118. K1JY is also on Echolink.