Wireless Society of Southern Maine
Emergency Communications Team (WSSM-ECT)

Operations Manual

Version: 04.22

Serving the communities of Cumberland County and the State of Maine.

Readiness, Capability, Professionalism

1. Introduction

1.1 Purpose of this Manual

This manual is designed to be used as a reference guide for Emergency Communications Team operations in the area that comprises Cumberland County, Maine. The Emergency Communications Team has a large area of responsibility which includes numerous towns and cities from the seacoast to the western foothills. Some variation in local operating practices and tastes is expected and allowed, and this document serves only as a baseline reference to establish and ensure continuity of operations. The Wireless Society of Southern Maine Emergency Communications Team (WSSM-ECT) serves as the Amateur Radio Emergency Service (ARES) and Radio Amateur Civil Emergency Service (RACES) affiliates for Cumberland County, in partnership with the Cumberland County Emergency Management Agency.

1.2 Purpose of WSSM-ECT

The purpose of the Wireless Society of Southern Maine Emergency Communications Team (WSSM-ECT) is to serve the Cumberland County Emergency Management Agency (CCEMA), and the community in general, by providing emergency communications assistance, conducting programs and training, promoting radio knowledge, fraternalism, and individual operating efficiency, and to conduct activities as to advance the general interest and welfare of Amateur Radio as a viable and efficient means of communications support.

The WSSM-ECT may serve other agencies as well, including the National Weather Service, Maine Emergency Management Agency, and the American Red Cross.

1.3 Role of Amateur Radio in Emergencies

Among other things, amateur radio operators are recognized by the FCC as being a pool of talented communicators, who selflessly contribute their time and operating skills to their communities when needed. As licensed radio operators who are proficient in their craft, hams are a natural choice for providing backup or auxilliary communications to organizations such as Emergency Management Agencies, the Red Cross, local emergency services, SKYWARN, and others. They are called upon during natural disasters, search and rescue operations, disaster recovery situations, HAZMAT spills, and even terrorist attacks.

The WSSM-ECT is authorized to operate under the authority of the Cumberland County Emergency Management Agency by a signed Memorandum of Understanding. All actions and procedures relating to communications assistance to CCEMA will be approved in advance by the Managing Director or his/her appointed representative.

1.4 Organization Name

The name “Wireless Society of Southern Maine Emergency Communications Team (WSSM-ECT)” was chosen at the organization’s founding meeting on February 18, 2016. The names “Cumberland ECT” or simply “WSSM-ECT” are the only acceptable variations.

1.5 Mission Statement

The WSSM-ECT exists to provide communication services for the collection of information and dissemination of critical situational information in support of the Cumberland County Emergency Management Agency and its mission to provide communication and coordination of emergency services before, during, and after a disaster.

1.6 Core Values

The WSSM-ECT operates under seven Core Values which guide everything we do:

- Dedication - We serve the Cumberland County EMA, other agencies, and each other with a spirit of commitment and dedication to our common goals.

- Education - We value each other’s interests, skills, and experiences and we actively and publicly share our talents and our knowledge.

- Integrity - We act honestly and in the best interest of ARES/RACES and the CCEMA mission in everything we do.

- Respect - We recognize the duties each person on the team has volunteered to perform and we appreciate their hard work, even when things go wrong.

- Teamwork - No one person can carry the weight of the WSSM-ECT program. It takes many people working together with diverse skills and a common goal to achieve success.

- Community Involvement - We share our educational resources and our intellectual assets freely with the communities we serve and strive to be good neighbors and partners in the amateur radio world and our communities in general.

- Continuous Improvement - We aim to do a lot of things right and want to be the best, but in order to truly be the best we need to accept that sometimes we'll fail, and that's okay as long as we learn something from it and use that experience to make ourselves stronger.

1.7 Legal Structure

The team currently operates without formal legal structure. Each member is volunteering his or her time, resources, and efforts to the Cumberland County EMA directly. While there is some formal leadership structure to the team, it is not its own distinct legal entity.

1.7.1 Financial Structure

The team does not have or manage its own finances. Occasional funding for equipment needs is accomplished through the normal budget and procurement process of the Cumberland County EMA. The team does not maintain its own physical assets; radio equipment and operational supplies are considered property of Cumberland County.

The giving of cash or cash-equivalent donations to the team is formally discouraged. Individuals and organizations wishing to donate physical goods such as radio equipment, accessories, or supplies should do so to the Cumberland County EMA. This may be accomplished through the team's leadership structure or by direct contact with the EMA Director.

Lacking any financial structure or assets, the WSSM-ECT is unable to reimburse its leadership, members, or other individuals for any equipment, supplies, services, or other purchases, or for mileage, insurance, or any other expenses.

1.7.2 Assets and Liabilities

In general, all equipment installed at Cumberland County EMA is the property of the County. Certain incidental supplies, such as binders, notebooks, pens, paper, food, beverages, etc. at the radio station are supplied by and at the sole expense of the purchasing Team Leader, Responder, Net Control Operator, or other individual, and become the property of Cumberland County EMA.

2. Membership

2.1 Qualifications

All licensed Amateur Radio operators who are interested in emergency communications are eligible for membership. Membership is by application and free of charge. Emphasis is on furthering members’ skills needed for emergency communications through portable operations, education, and exercises.

2.2 Training

Responder Level

Within one-year of joining ECT, member operators shall complete the following:

- Participation in SKYWARN Spotter Training
- Actively participate in exercises, public service events, and other operating activities as to gain experience communicating by voice and digital radio.
- ICS-100 (IS-100.b) - Introduction to the ICS
- IS-700 - National Incident Management System (NIMS)
- Any additional FEMA or ARRL courses of your choice.

Leadership

ECT liaison and Team Leaders shall within one year of their appointment complete the following:

- IS-200 (IS-200.b) - ICS for Single Resources and Initial Action Incidents
- IS-800 (IS-800.c) - Introduction to the National Response Framework
- Take a SKYWARN Spotter Training refresher at least once every two years.
- Actively Participate in exercises, public service events, and communication by voice and digital radio.
- Any additional FEMA or ARRL courses of your choice.

3. SKYWARN Support

Members are encouraged to participate in SKYWARN activations as it is considered some of the best real-life training available. Weather can happen at any time and sometimes with very little lead time, therefore SKYWARN participation requires a constant state of readiness.

Refer to the NWS Gray SKYWARN Amateur Radio Team Operations Manual for the latest information about net operations, reporting criteria, and how to become involved as a Net Control operator.

4. Net Procedure

WSSM-ECT operates three types of nets to support *training, events and activation.*

4.1 Information and Training Net:

Our Training net occurs on the fourth Thursday monthly, at 7:00PM local time, on the Falmouth 147.090 (+ / 100.0) repeater. The purpose of the net is to pass traffic, conduct on-air training, and to encourage interest in Emergency Communications within our coverage area.

Additionally, other frequencies and modes may be used during the net, including FM Simplex, DMR, or HF. The net focuses on developing skills, such as familiarity with message forms, traffic handling, using modes like FM Simplex, Winlink, Packet, and the FlDigi suite, while fostering an interest in and recruiting newcomers to emergency communications.

4.2 Event Net:

Event Nets are scheduled to support charity walks, town festivals, and other community events. These nets are designed and prepared with known operating times, stations and traffic intent to support the event.

4.3 Activation Net:

Real Activation Nets are situation driven and may have little to no preparation time. These activations can last up to several days depending on the severity of the event. SKYWARN Activations, which are initiated by the onset of severe weather, is a specific type of activation net that involves the collection of ground-truth weather reports that are relayed to the National Weather Service, in Gray, ME. Reports of downed trees and roads that become impassable due to debris or washouts, are also valuable to EMAs so they can dispatch appropriate services.

4.4 Portable Operating

Whenever possible, Net Control should be conducted from the Cumberland County Emergency Management Agency (CCEMA), but Event Nets and other situations may require Net Control to be operated from a different location. The location should allow for adequate transmission and reception of primary and alternate operating frequencies. In most cases, members will have access to the CCEMA communications trailer during these events, but portable operations from the field, or a shelter location may also be required.

Net Preparation from a portable location:

- Be sure to bring enough personal supplies such as food, water, etc., to last your entire shift.
- Have supplies ready to log check-ins and traffic.
- Arrive early.
- Setup antennas (especially VHF/UHF) in the highest possible location.
- Check on the available power sources and prepare accordingly (Do you have enough fuel, batteries, etc.)?
- Test radio systems for functionality and performance.

4.5 Operating Tips:

- When requesting check-ins or other information, indicate “Nothing Heard” when no response is heard so stations attempting to get in know they were missed.
- After several check-ins, acknowledge each one phonetically then continue asking for more check-ins.
- Keep transmissions brief.
- Keep in mind “What is the goal of my transmission?” Will your transmission achieve that goal? Do not say something for the sake of saying something.
- Listen before you speak, try to avoid doubling with other stations.

- When transmitting, key up, wait a second, give your transmission, wait a second, then unkey. ***It is not necessary to allow the repeater squelch tail to drop because it is very long.***

4.6 Information and Training Net Procedure:

Net Frequencies:

Primary: 147.090 (+ / 100.0) Falmouth, ME repeater
Secondary: 146.580 FM Simplex

Format Notes:

Italicized and <*bracketed*> words below are instructions for the net control operator; they are not to be read aloud.

Pre-announcement:

This is <*call sign*>. The WSSM-ECT Net for Cumberland County starts in about one minute. Does anyone need to use the repeater before I begin?

Net Call / Description / Meeting Time & Location:

Good evening and welcome to the Wireless Society of Southern Maine's Emergency Communications Team Net for Cumberland County. Your moderator this evening is <*call sign phonetically*>. My name is: <*name*>. This net is part of the Amateur Radio Emergency Service and the National Traffic System of the ARRL and meets every 4th Thursday evening at 7:00 PM local time on this repeater.

The purpose of the net is to pass traffic, conduct on-air training, and to encourage interest in Emergency Communications in this coverage area.

Additionally, other frequencies and modes may be used during the net, including FM Simplex, DMR, or HF. All amateurs are welcome to join us.

The net focuses on developing skills, such as familiarity with message forms, traffic handling, using modes like FM Simplex, Winlink, Packet, and the FlDigi suite, while fostering an interest in and recruiting newcomers to emergency communications.

Net Procedures:

This is a directed net. Please do not break the net unless you have emergency or priority traffic. When checking in, please give your call sign phonetically and your power source as commercial or battery. Traffic and announcements will be handled first, followed by general check-ins.

Traffic / Announcements:

I am now looking for any stations with traffic or announcements. Stations with traffic or announcements **only**, please call now.

<*Station(s) with traffic*>, please list your traffic.

If there are any stations that can handle traffic for <*list traffic*>, please call net control.

<*Station receiving traffic*>, please call <*station with traffic*> and take <*number of messages*> for <*list traffic*>. *(Defer to end of net if there are many.)*

<*Stations with announcement(s)*>, please make your announcement(s).

General Check-ins:

This is <*call sign*>, net control station for the WSSM Emergency Communications Net for Cumberland County. I am now looking for ANY stations with or without traffic. Please call now with your name, location, and power source.

Final Call:

This is <*call sign*>, net control station for the WSSM Emergency Communications Team Net for Cumberland County. I am now looking for any and all stations that wish to join the net. Any and all stations that wish to join, please call net control.

Training for *<DATE>:*

Our topic for tonight is… *<Training Topic>*

At this time, do we have any comments or late check-ins?

Send traffic.

Closing:

The Wireless Society of Southern Maine Emergency Communications Team would like to thank George W1QUI for the use of the repeater. I thank those who brought traffic and announcements, those who joined me this evening on the net, and also those stations who stood by while the net was being conducted. The repeater portion of the net is now secure at <*local time*>. <*Call sign*> is clear and will QSY to *<HF, Digital, or Simplex>*

On HF or Simplex:

Do a roll call of stations that are already checked-in.

At the end of the roll call list ask for any additional check-ins. Are there any additional member check-ins? *Acknowledge and note these--do a follow-up call to make sure no one was doubled or missed.*

I will now ask for any relays for stations that I did not acknowledge. If you can relay for a missed station please come back with your call sign only. *(Get the relay info and then repeat call for other relays until none are heard).*

Is there any further business for the net before I close?

After the Net send a net report to the Net Manager: Tim Watson KB1HNZ: kb1hnz@yahoo.com

Submit a Net Report with the following information:

- NCS
- Start Time (Repeater and HF/Simplex)
- End Time (Repeater and HF/Simplex)
- Number of Stations (Repeater and HF/Simplex)
- Station Call Signs (Repeater and HF/Simplex)
- Number of messages passed (Repeater and HF/Simplex)
- Notes that you would like to be provided.

5. Frequencies:

5.1 Analog FM

Members should program their personal radios with the following Primary, Secondary, and Tertiary channels:

1. ECT1	146.5800	Primary 2m Simplex
2. ECT2 / SKYWARN	146.5950	Secondary 2m Simplex
3. ECT3	147.5850	Tertiary 2m Simplex
4. Primary VHF Repeater	147.0900 (+ / 100.0)	Blackstrap Mt., Falmouth, ME
5. Secondary VHF Repeater	147.0450 (+ / 103.5)	NWS Gray, ME
6. Tertiary VHF Repeater	146.6550 (- / 100.0)	Mt. Washington, NH
7. Primary UHF Repeater	449.2250 (- / 103.5 / 103.5)	CCEMA Windham, ME
8. X-Band V	147.5250 (77.0 / 77.0)	Cross-band V
9. X-Band U	446.5000 (77.0 / 77.0)	Cross-band U
10. SW VHF Coord	146.5200	Statewide Coordination 2m
11. SW UHF Coord	446.0000	Statewide Coordination 70cm

All members that participate in Events and Portable Operations are encouraged to bring their own dual-band HT with at least one spare battery. It is also important to know how to program your radio from the keypad, in case changes to existing frequencies, or alternates need to be added on the fly.

5.2 Digital Voice

The V/U station at CCEMA is equipped with a Connect Systems CS801 DMR transceiver, which can access the DMR-MARC network via repeaters in Maine and New Hampshire. Members are encouraged to use the radio after in-person meetings and during on-air activities, to become familiar with its operations.

- **Primary DMR Talkgroup: TG 3123 TS2 Maine Statewide**
- **SKYWARN DMR Talkgroup: TG 759 TS1 SKYWARN**

CCEMA maintains a dual-mode Yaesu System Fusion / FM repeater on-site. For those who have Fusion-capable radios, Digital Narrow (DN) mode is an option. The repeater is usually connected to the Wolf Pack Network via WIRES-X, which is a regional linked repeater system.

5.3 HF

Three HF radios are available at CCEMA including a Yaesu FT-950 at the EOC, an Icom IC-7300 in the communications trailer, and an Icom IC-7100 that is deployable for portable operations. Members are encouraged to use these radios after in-person meetings and during on-air activities, to become familiar with their operations.

WSSM-ECT will follow Maine ARES procedures for HF operations, so members are encouraged to become familiar with these, especially in the use of digital modes using the FlDigi software suite.

- ARES Primary Night 3.9400 LSB
- ARES Primary Day 7.2620 LSB
- ALT HF Night 3.8600 LSB
- ALT HF Day 28.455 USB
- Digital HF Night 3.5830 USB-D
- Digital HF Day 7.0710 USB-D
- Statewide 6m Coord 52.5250 FM
- Winlink via CMS HF or PACKET

6. Record Keeping and Reporting

6.1 Station Logs

Station logs at CCEMA date back to 2012 when the EOC was activated during Hurricane Sandy. Its important for continuity and training that we maintain these logs.

6.2 After Action Reviews

Routine and post-meeting communications may be recorded in the Amateur Radio logbook, located at the station. Activation and Exercise communications should be recorded in an ICS-309 form or accompany an After Action Review (AAR).

It is required that After Action Reviews be shared with our partners at the EMA and archived either electronically or at the operating position for future reference.

7. Membership Roster

Our served agencies may have specific requirements for personnel that are provided by WSSM-ECT and this information enables us to better meet their needs and expedite credentialing of hams who respond to a call for assistance.

We hope that our team members will maintain their information and keep it current.

If you wish to become a WSSM-ECT team member, and you have not already signed-up, please click this link and complete the CONTACT INFO, TRAINING, and CAPABILITIES tabs.

Thank you for your interest in becoming part of the WSSM-ECT!

Appendix A.

Maine ARES Frequencies

County	Primary Simplex	Secondary Simplex	Tertiary Simplex	Primary Repeater	Secondary Repeater
Androscoggin	146.460	147.540	146.430	146.610 - / 88.5	145.290 - / 100.0
Aroostook	146.475	147.510	146.505	146.730 - / NO PL	
Cumberland ECT	146.580	146.595	147.585	147.090 - / 100.0	X-band: 446.500 / 147.525
Franklin	146.535	147.570	146.580	147.180 + / 123.0	
Hancock	146.565	147.495	146.535	146.910 - / 151.4	
Kennebec	147.480	146.475	147.450	145.390 - / 100.0	
Knox	147.540	146.475	147.450	145.490 - / 91.5	
Lincoln	147.510	146.505	147.450	146.985 - / 100.0	
Oxford	146.550	147.435	146.505	146.880 - / 100.0	
Penobscot	147.565	146.550	147.555	145.450 - / 67.0	
Piscataquis	146.400	147.450	146.565	147.105 + / 103.5	147.150 + / 71.9
Sagadahoc	146.490	147.555	146.565	147.210 + / 100.0	
Somerset	147.420	146.430	147.525	146.730 - / 91.5	
Waldo	146.430	147.465	146.460	147.270 + / 136.5	
Washington	147.525	146.460	147.570	147.330 + / 118.8	
York ECT	147.570	146.445	147.540	147.345 + / 123.0	
Statewide Coord.	52.525 146.520 223.500 446.00			KQ1L Link System	
Statewide DMR	145.790	145.510			
SKYWARN (Gray)	146.595			147.090 - / 100.0	147.045 + / 103.5
SKYWARN (Caribou)	146.475			146.730 - / NO PL	

3940.0 kHz 7262.0 kHz	Night Day	Statewide HF Coordination. 1900L: MECN (Sun); SGN (M-Sat). 0900L: MPSN (Sun)
3583.0 kHz Unassigned	Night Day	Digital Modes (NBEMS) +1000 Hz Olivia 8/500 keyboard net ops; Thor 50x1 file transfer

Appendix B.

New Hampshire ARES Frequencies

County	Primary Simplex	NBEMS Simplex	Backup Simplex	Primary Repeater	Secondary Repeater
Capital Area	147.450	145.750 NBEMS		146.940 - / 114.8	147.225 + / 100.0
Capital Area (Henniker)	147.450	145.750 NBEMS			146.895 - / 100.0
Central (Guilford)	147.540	145.670 NBEMS		146.985 - / 123.0	147.390 + / 123.0
Central (Franklin)	147.540	145.670 NBEMS		147.300 + / 88.5	147.390 + / 123.0
Cheshire	147.540	145.530 NBEMS		146.805 – 100.0	146.760 - / 110.9
Coos (Berlin)	147.420	145.710 NBEMS	146.580	146.685 - / 100.0	146.655 - / 100.0
Coos (Bethlehem)	147.420	145.710 NBEMS	146.580	147.105 + / 100.0	146.655 - / 100.0
Eastern Rockingham	147.465	145.550 NBEMS		145.150 - / 127.3	146.700 - / 88.5
Western Rockingham	147.435 (100.0)	145.690 NBEMS	445.550 (100.0)	146.850 - / 85.4	147.210 + / 107.2
Greater Manchester	146.535	145.730 NBEMS		147.135 + / 100.0	444.200 + / 186.2
Hillsborough	147.405	145.610 NBEMS		146.730 - / 88.5	449.375 - / 88.5
Mt. Washington Valley	147.495	145.590 NBEMS		145.450 - / 100.0	448.975 - / 141.3
Southern Grafton	146.580	145.630 NBEMS		145.330 - / 100.0	146.760 - / 110.9
Strafford	147.570	145.530 NBEMS		147.000 - / 100.0	146.685 - / 88.5
Sullivan (Claremont)	147.555	145.650 NBEMS		147.285 + / 103.5	
Statewide Coord.	147.510	446.075	51.600		
NBEMS (State EOC & Section)	145.570				
State EOC Team	446.075				

3973.0 kHz 7273.0 kHz	Primary Night Primary Day	Statewide HF Coordination. Net: Saturday at 8:30am local
3582.0 kHz 7072.0 kHz	Primary Backup	NH ARES Digital (PSK125 pri). Net: Saturday at 7:30am local NH ARES Digital (PSK125 pri)

Appendix C.

ICS Documents and Forms

Included in this section:

ICS-205a	**Communications List**
ICS-309	**COMM Log**
ICS-217a	**WS1EC FM Frequencies/Resources**
ICS-217a	**WS1EC Digital Voice Frequencies/Resources**
ICS-217a	**WS1EC HF Frequencies/Resources**