Maine Amateur Radio Emergency Service

Emergency Communications Plan

Maine Amateur Radio Emergency Service

Emergency Communications Plan

Foreword

It is impossible to state the exact protocol to cover every situation that might arise from a communications emergency. Therefore, it is impossible for a Section Manager (SM) or Section Emergency Coordinator (SEC) to list what the emergency communications needs might be for every Emergency Coordinator (EC) and District Emergency Coordinator (DEC) in the Section. You, as ECs or DECs, must be responsible for developing a Local Emergency Plan and informing the SEC and SM as to what will be needed on a state level.

As a result, this plan is to be used as a guide and framework for developing your County Emergency Plan, along with the ARRL Public Service Communications Manual (FSD-235), The ARRL Emergency Coordinator's Manual (FSD-9) and ARRL Net Directory (FSD-50).

The average radio amateur, faced with an emergency situation, will benefit from a good, workable Emergency Communications Plan. Disaster/Emergency Communications Plans are, or should be, part of all ARES groups. They should be a part of every training session, and updated as conditions or staffing changes occur.

September 16, 2010 Revision

Table of Contents

Distribution of Plan

The Maine Amateur Radio Emergency Communications Plan will be distributed in the following manner:

1 copy—ARRL Section Manager
1 copy—ARRL Section Emergency Coordinator
1 copy—ARRL District Emergency Coordinators
1 copy—ARRL County Emergency Coordinators
1 copy—ARRL Section Traffic Manager
1 copy—ARRL New England Division Director
1 copy—ARRL Headquarters, Newington, CT
1 copy—ARRL Net Managers of Traffic Nets
1 copy—State MARS Directors (3)
1 copy—Maine Offices of National Weather Service (Portland, Caribou)

Copies of this Plan will be available upon request to any ARES or RACES member, or ARRL Official Emergency Station for the cost of printing and postage. Updates (or replacement pages) will be distributed as deemed necessary by the Section Emergency Coordinator (SEC) or Section Manager (SM).

Revision Log

Page #	Revision Date	Entered By

General

Introduction

The Maine Amateur Radio Emergency Service (Maine ARES) is composed of FCC licensed Amateur Radio operators who have voluntarily registered their capabilities and equipment for public service communications and disaster/emergency communications duty.

Maine ARES operates in accordance with the Communications Act of 1934 (as amended), Federal Communications Commission Regulations, ARRL guidelines and the guidelines established in this document.

In accordance with Federal Communications Commission Regulations, Amateur Radio communications services are furnished without compensation of any kind.

Authority

Title 47 CFR Part 97 Federal Communications Commission Rules and Regulations, Amateur Radio Service.

This emergency plan has been reviewed and approved by the ARRL Maine Section Emergency Coordinator.

Purpose

The purpose of this plan is to provide written guidelines for conducting ARES communications on behalf of public safety, public service and disaster relief agencies. This plan is designed to provide a framework within which local county, district, state, inter-state and Canada/US ARES units and nets may function with maximum effectiveness and minimum confusion, in conformance with their own communications plans.

The primary purpose of Maine ARES is to provide communication services during times of disaster or emergency to areas where no established communication link exists, or to supplement existing systems if they become disabled or overloaded.

A secondary purpose of Maine ARES is to provide public service communications for area agencies or other organizations at the discretion of the Maine ARES officials.

This secondary purpose also helps to provide practice, training, and experience to Maine ARES members.

Training exercises will be carried out at frequent intervals to familiarize all ARES operators with local county plans, net procedures and message handling. Training should be coordinated, whenever possible, with Maine Emergency Management Agency's local county and state exercises.

Limitations

The information contained in this plan is to be used as a guide. It is not the intent of this plan to limit the formulation of county level plans by an EC who is more familiar with local county needs, requirements and conditions.

Maine ARES is organized to provide communications services only.

The authenticity of all messages is the sole responsibility of the originating authority.

Although a radio operator may report conditions as he observes them, unless otherwise qualified, such observations are to be considered those of a lay person and evaluated in that context.

Membership

Membership in Maine ARES is open to any Licensed Radio Amateur who has a sincere desire to serve their community in times of disaster or emergency.

Local or County ARES Plans

All Local, County, and District ARES plans must be in writing. Local & County Emergency/Disaster Agencies should have a copy of those plans. Copies should be submitted to the DEC, SEC and SM.

All local and county ARES groups must maintain a membership list. This list should be furnished to DEC, SEC and SM.

ECs should maintain close working liaison with Emergency/Disaster Agencies that could require emergency communications.

Activation of the Plan

Any member of the Maine ARES who, for any reason, suspects a communications emergency exists, should monitor their assigned net frequency for activity.

The EC, AEC, DEC, SEC, or SM will be notified by the fastest means available.

In an emergency in which Amateur Radio might serve the community, amateur radio operators may be alerted by any local government agency, Red Cross, Emergency Management Agency, or similar officials by notifying the EC or any other Section official.

Alerting Procedures

The Maine Section Communications System is, to a high degree, self-alerting and may be partially or fully alerted as necessary to meet any contingency.

County and district wide VHF repeaters are commonly used for county emergency nets, and little special alerting is required except in unusual situations. Any amateur may use a repeater at any time to summon help. County or district ARES/RACES officials may put county or district frequencies on emergency status at any time. Upon awareness or notification that a communication emergency exists, the EC should activate the county net and carry out the County Emergency Communications Plan. Net control is designated by the county or district senior ARES official available.

Section HF nets may be used at any time by ARES members or officials, consistent with other emergency communications that may be then in progress on the net. When a local or district level ARES official begins use of a section HF net, immediate notification should be made to the Net Manager, SEC and STM.

Widespread emergencies may involve several counties or districts. In such a case, the SEC or DEC may invoke any of four "conditions" of ARES/RACES alert as may be appropriate.

LEVEL 0 – Green – NORMAL SITUATION – No emergency activity

LEVEL 1 – Yellow – ALERT

ARES/RACES members are advised that a potential exists for a call on their services. Members should monitor ARES nets, public safety service radios and commercial television and radio and generally keep in close touch with the situation.

LEVEL 2 – Orange - STAND-BY

Amateurs should prepare to respond immediately to an actual call on their services. One or more section nets may be activated at the discretion of Section ARES officials. Most emergencies can be handled without ever going beyond Level 2.

LEVEL 3 – Red – ACTIVATE

Even though traffic volume may be low, the frequency should be maintained for the high-priority traffic. No routine traffic is handled. All formal traffic must be in ARRL radiogram or served agency message form when handled on VHF or HF Nets (see the ARRL Net Directory for detailed instructions on formal traffic). No "informal" communications are handled on any HF Nets, including tactical traffic or direct communications between ARES officials or between agency officials on amateur frequencies. Tactical communications are handled off the HF net frequencies under regular FCC rules for third-party communications. Only when a Level 3 is in effect may the SM or SEC may request FCC to clear a frequency.

LEVEL 4 – Blue – SECURE

The emergency has passed. Served agencies release ARES members. The STM or NM are authorized to reduce hours or restrict operations in accordance with traffic loads. ARES officials prepare after action reports and submit them to the SEC, SM and Served Agencies.

Operation

If the emergency operation dictates very rapid communication, it is permissible to operate in a "tactical" format which would allow for informal message format and station identifiers. However, these station identifiers are not substitutes for station call signs. Amateurs must always meet the identification requirements of Part 97.

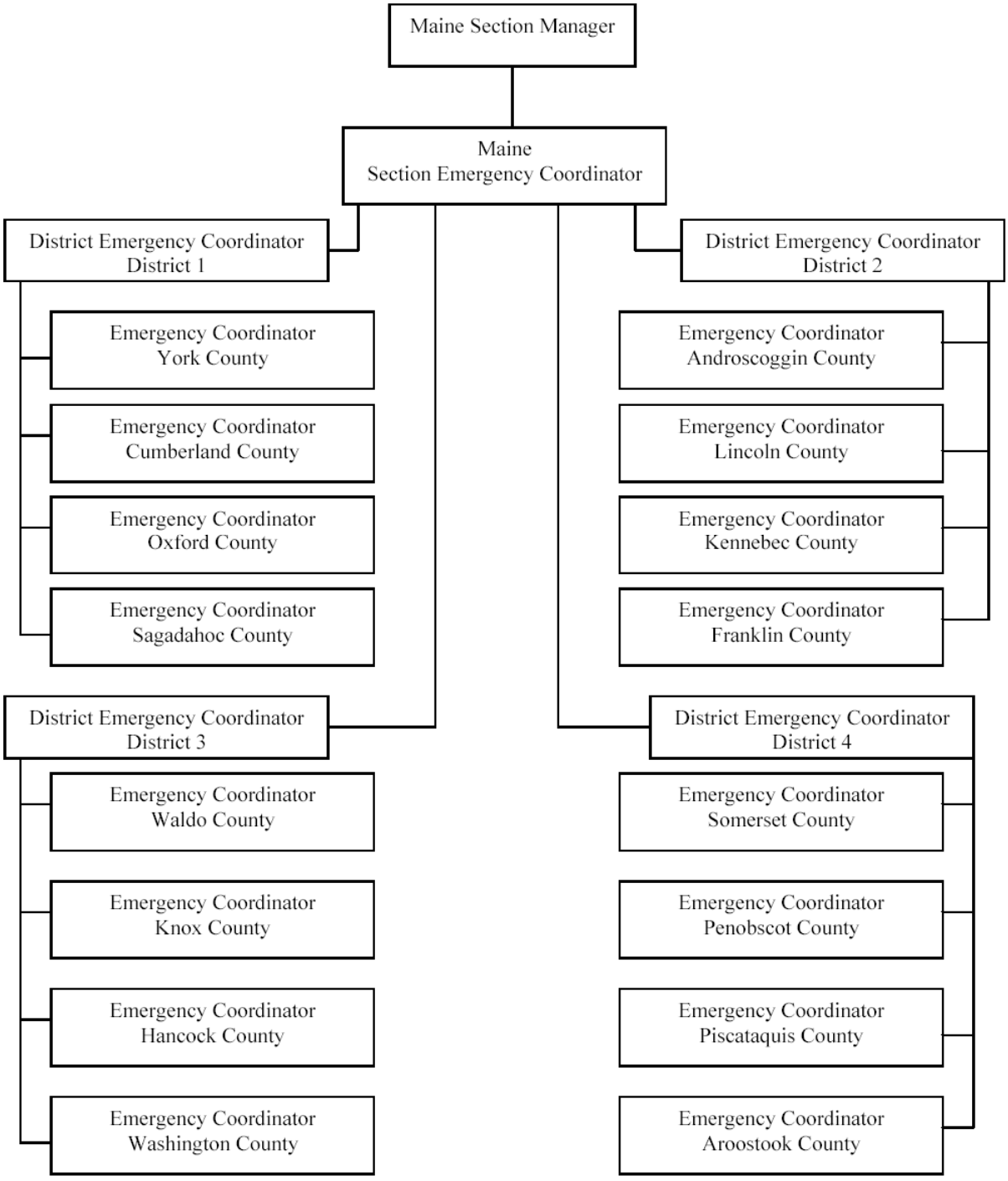
In other operations, traffic should be written in ARRL format with message precedence of Emergency, Priority, Routine and Welfare as described in FSD-218, or the form or format provided or required by the agency that is being served. If messages are to be sent via the ARRL National Traffic System the ARRL message format must be used.

If possible, all formal messages should be authorized by the person who assumes responsibility for their contents.

All nets will operate as a "Directed Net." Stations will not transmit unless invited (receive permission) to do so from the Net Control Station (NCS)

Organizational Structure

Maine ARES operates under the ARRL, Maine Section ARES Organizational structure.



ARES Mobilization Plan

Purpose

To facilitate mobilization of Maine Section ARES and volunteer amateur radio operators in minimum time, without the need for detailed individual instruction.

Applicability

All licensed amateurs, whether or not members of ARRL or ARES members, in the Maine Section or surrounding Sections, can respond to this mobilization plan.

Activation

If a local or wide scale emergency/disaster is known to exist or is imminent, the immediate reaction of every ARES member and official in the Section will be to monitor the appropriate County Net or Nets. Amateurs outside the affected areas will begin monitoring frequencies used by the emergency nets in the affected area. See Appendix C for the emergency frequencies, Appendix D for Maine Repeaters.

The District Emergency Coordinator (DEC), Emergency Coordinator (EC), or Assistant Emergency Coordinator (AEC) will activate only those parts of the mobilization plan which are needed. DECs, ECs, and AECs are advised to take care not to underestimate their emergency communication needs.

The Emergency Coordinator (EC) or Assistant Emergency Coordinator (AEC) will notify the District Emergency Coordinator (DEC), Section Emergency Coordinator (SEC), and Section Manager (SM) by the fastest and best means available. The report will include a description of the situation, cause of the emergency (if known), estimate of communication loss and destination of the important traffic to be handled.

The Emergency Coordinator (EC) or Assistant Emergency Coordinator (AEC) determines the communication needs of the emergency at hand. If the EC or AEC determines the need for additional communication assistance, he/she will contact the District Emergency Coordinator (DEC) in charge of their district. If the DEC is unavailable, contact the Section Emergency Coordinator (SEC), or Section Manager (SM). See Appendix A.

The District Emergency Coordinator (DEC) determines the communications needs for the emergency in his/her district. If the DEC determines the need for additional communication assistance, he/she will contact the Section Emergency Coordinator (SEC) or Section Manager (SM). See Appendix A.

Based on the situation reports from the disaster/emergency area, the Section Emergency Coordinator (SEC), in consultation with the Section Manager (SM) and Net Managers (NM), will determine the time for activation of the Section Nets, frequencies, and liaison needed with the affected area.

The District Emergency Coordinator (DEC), Emergency Coordinator (EC) or Assistant Emergency Coordinator (AEC) in the affected area will select the frequencies (based on the emergency frequency list – see Appendix C) and nets to be used within the affected area.

Operation

The senior Section ARRL Official (SM, ASM, SEC, or STM) will be in charge of the overall operation of the communications emergency at hand. The District Emergency Coordinator (DEC) is the senior ARRL Official for his/her district and the Emergency Coordinator (EC) is the senior ARRL Official for his/her county. If a DEC or EC is not available, the senior Section Official will appoint an amateur to the position temporarily.

Local Emergency Communication Plans will be based on VHF and UHF when practical. This will allow the maximum number of amateurs to participate in the communication emergency.

Liaison from the affected area to the Section Nets will be via an Official Relay Station (ORS) or Official Emergency Station (OES) when possible and practical.

If the situation at hand dictates rapid communication, it is permissible to operate the emergency net in "Tactical" format, which may include abbreviated call signs and messages. However, all amateur stations must meet the requirements of the FCC Rules and Regulations.

Traffic passed as "formal" will be in ARRL format as described on ARRL form FSD-218. Traffic moving within Maine may be in the form/format provided or required by the agency that is being served. Traffic going outside Maine should be in ARRL format. Messages which are intended to be of an official nature must be authorized by the person who is responsible for the content.

Situation Reports will be sent by the Senior Section Official involved to the Section Emergency Coordinator (SEC) or designee at least every 6 to 8 hours from the affected area. The Situation Report will consist of a general overview of the situation and the amateur radio support being provided.

Utilizing information from the Situation Reports, the SEC or SM will recommend to the Section Net Managers (NM) the hours of operation and what frequencies will be used to provide liaison to the affected area.

It is important to secure an emergency operation as promptly as possible. The decision to secure rests with the DEC, EC, or AEC in the affected area based on requirements of the served agencies.

After termination of operations, every DEC and EC involved in the communication emergency will send the SEC a written after action report.

The SEC will forward the reports to the SM. The SM will issue a final written report which will include all significant information gathered from the DECs, and ECs involved in the emergency.

Appendix A
MAINE ARES CONTACTS
As of 09/16/10

SECTION EMERGENCY COORDINATOR

K1GAX Bryce Rumery
75 Ocean House Rd
Cape Elizabeth, ME 04107
(207) 799-1116 (h)
(207) 632-1284 (c)
Email: k1gax@juno.com

ASSISTANT SECTION EMERGENCY COORDINATOR

K1JJS, John Goran
74 Webster Rd
Freeport, ME 04032-6228
(207) 865-0554 (h)
(207) 725-0614 (w)
(207) 232-4892 (c)
Email: johnmgoran1@suscom-maine.net

DISTRICT EMERGENCY COORDINATORS

District 1 (York, Cumberland, Oxford, Sagadahoc)

K1JJS, John Goran
74 Webster Rd
Freeport, ME 04032-6228
(207) 865-0554 (h)
(207) 725-0614 (w)
(207) 232-4892 (c)
Email: k1jjs@arrl.net

District 2 (Lincoln, Androscoggin, Kennebec, Franklin)

NT1N, William Akins
26 Olivia Lane
Winthrop, ME 04364
(207) 377-8607 (h)
(207) 624-3044 (w)
(207) 557-3243 (c)
(207) 580-6001 (p)
Email: nt1n@roadrunner.com

District 3 (Waldo, Knox, Hancock, Washington)

K1PAR, Phil Roberts
129 Hadley Lake Road
Marshfield, ME 04654
(207) 255-3872
Email: k1par@myfairpoint.net

District 4 (Somerset, Piscataquis, Penobscot, Aroostook)

WA1URS, Dennis Bosley
95 Collins Street
Caribou, ME 04736
(207) 492-1949 (h)
(207) 484-8419 (c)
Email: wa1urs@arrl.net

COUNTY EMERGENCY COORDINATORS

ANDROSCOGGIN

N1OXA, Ivan Lazure
440 Webber Ave
Lewiston, ME 04240
(207) 784-0350 (h)
(207) 577-5152 (c)

AROOSTOOK

Open

CUMBERLAND

WA1RB, Ron Brown
31 Beech Ridge Rd
Scarborough, ME 04074
(207) 450-2249 (h)
(207) 662-6630 (w)
(207) 450-2249 (c)
Email: wa1rb@rfburn.org

FRANKLIN

KB1RDG, Randy Gauvin
140 Granite Heights
Farmington, ME 04938
(207) 778-0799 (h)
(207) 779-2490 (w)
(207) 750-0387 (p)
(207) 778-1962 (c)
Email: kb1rdg.randy@gmail.com

HANCOCK

KB1TGL, Andrew Sankey
285 South Gouldsboro Rd
Gouldsboro, ME 04607
(207) 963-7313 (h)
(207) 677-0783 (w)
(207) 460-0097 (c)
Email: asankey@bhbt.com

KENNEBEC

KA1LPW, Skeet Smith
171 Cushnoc Rd
Vassalboro, ME 04989
(207) 622-2915
Email: bzyb2001@yahoo.com

KNOX

KB1DSW, Scott Ewen **(AEC)**
408 River Road
Cushing, ME 04563
Email: maplesugarman@gmail.com

LINCOLN

Open

OXFORD

Open

PISCATAQUIS

KC1AU, Robert C Wilson,
36 Water St, PO Box 121
Monson, ME 04464
(207) 997-3773 (H)
(207) 717-4061 (C)
Email: kc1au_bob@myfairpoint.net

PENOBSCOT

N0UKM, Kevin Badger
135 Parkview Ave APT C
Bangor, ME 04401
(207) 570-1984
Email: mojo1859@yahoo.com

SAGADAHOC

N1TTT, Harry McNelley
281 Hillside Rd
Brunswick, ME 04011
837-2181 (c)
780-3584 (w)
Email: harry.mcnelley@yahoo.com

SOMERSET

KJ1Z, Mike Cote
P.O. Box 111
North Anson, ME 04958
(207) 313-9251 (c)
Email: kj1z@yahoo.com

WALDO

KB1ROT, John Butler
4 Cobb Rd
Belfast, ME 04915
(207) 691-8314
kb1rot@yahoo.com

WASHINGTON

N1DP, David W Perham,
406 Tibbettstown Road
Columbia Falls, ME 04623
(207) 483-4625
Email: n1dp@arrl.net

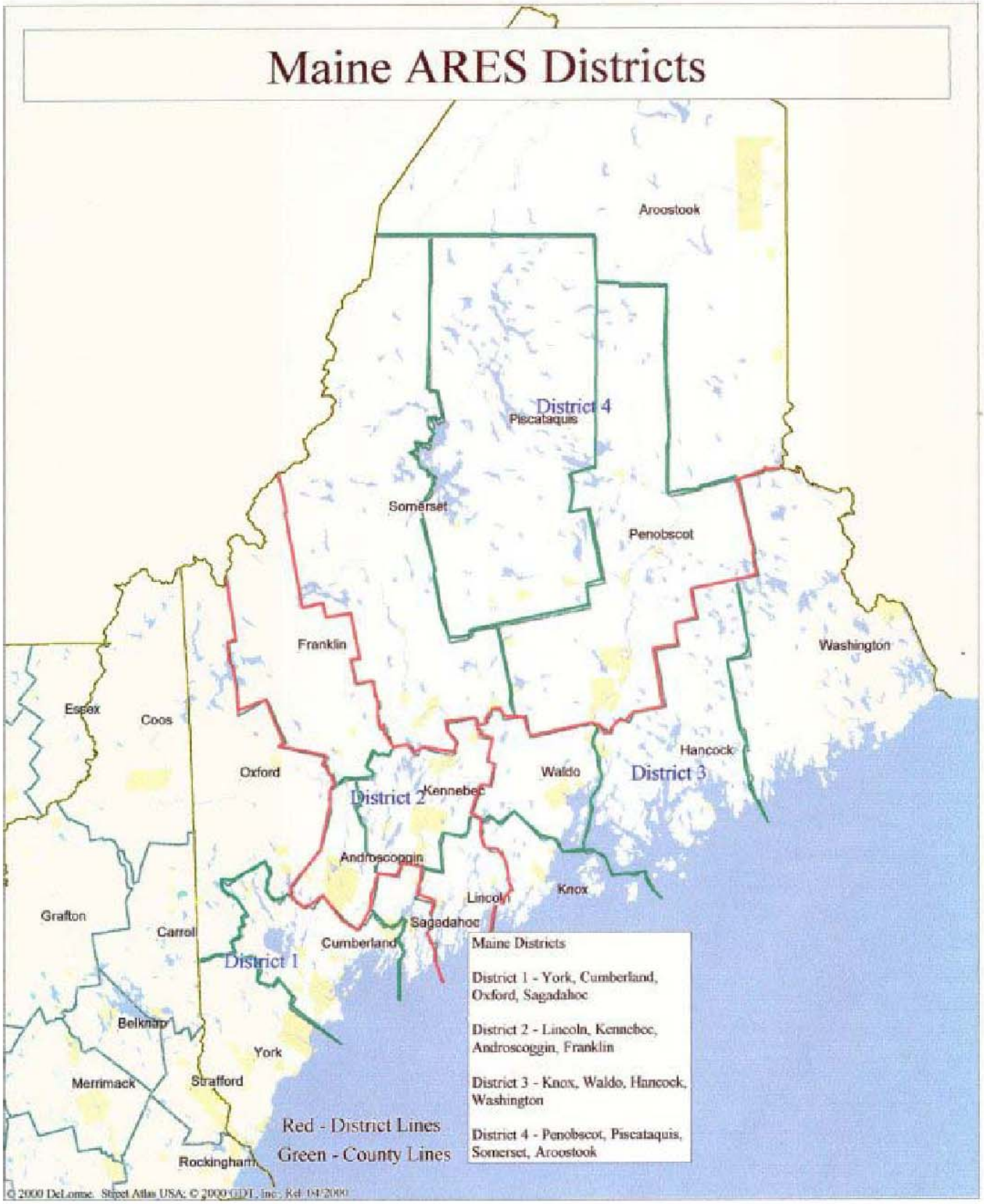
YORK

KB1VX, Barry Kray
23 Ridgewood Drive
Kittery, ME 03904
(207) 438-8285(h)
(978) 807-0683(c)
Email: kb1vx@arrl.net

NET MANAGER, MAINE EMERGENCY COMMUNICATIONS NET

K1HZU, Peter Norris
50 Jordan Lane
Turner, ME 04282
(207) 225-5030
Email: k1hzu@arrl.net

APPENDIX B


Maine ARES Districts
Aroostook
District 4
Piscataquis
Somerset
Penobscot
Franklin
Washington
Essex
Coos
Oxford
Kennebec
Waldo
Hancock
District 3
District 2
Androscoggin
Knox
Lincoln
Sagadahoc
Grafton
Carroll
Cumberland
District 1
Belknap
York
Merrimack
Strafford
Rockingham
Maine Districts
District 1 - York, Cumberland, Oxford, Sagadahoc
District 2 - Lincoln, Kennebec, Androscoggin, Franklin
District 3 - Knox, Waldo, Hancock, Washington
District 4 - Penobscot, Piscataquis, Somerset, Aroostook
Red - District Lines
Green - County Lines
© 2000 DeLorme. Street Atlas USA: © 2000 GDT, Inc.; Rel: 04/2000

Appendix C

Maine Emergency Simplex Frequencies and Primary Repeater Frequencies

The Maine ARES Simplex Frequencies were first implemented after the Ice Storm of 1998 in response to many hams who stated they wanted to help, but did not know where various ARES groups in the state were operating during the Ice Storm. Because of many repeaters being down, many ARES groups were forced to operate simplex. Many were operating on the output frequency of their local repeater, some were operating on 146.520 and others were operating on other simplex frequencies. There was no standard set of simplex frequencies in Maine for ARES operations. Due to the lack of coordinated frequencies, many ARES groups found that they were interfering with ARES groups in nearby counties on the same frequency. Many ARES groups that were operating on 146.520 found that they had lost much of their frequency diversity (a very strong point for amateur radio emergency communications).

Over the years, the list has evolved from a single set of simplex frequencies (one for each county) to a set of three simplex frequencies available to each county of the state for their use that would have the minimum interference to nearby counties. Counties now have the advantage of being able to publish the frequencies that they would operate on during disaster operations and inform those hams that are not ARES members where ARES operations would take place.

The current simplex assignment list has two frequencies that are about 1 MHz apart from each other (Primary and Secondary) and a third (Tertiary) frequency that is fairly near either the Primary or Secondary allocations. It is recommended the Tertiary frequency be used for tactical operations some distance from operators using the Primary or Secondary net frequencies and at a lower power level to avoid interference with either the Primary or Secondary frequencies.

Maine Emergency Simplex Frequency Assignments
Primary Repeater Frequencies

Revision 5 09/16/10

Prepared by Bryce Rumery, K1GAX, Maine ARES SEC

County	Primary Simplex	Secondary Simplex	Tertiary Simplex	Primary Repeater
Androscoggin	146.460	147.540	146.430	146.610
Aroostook	146.475	147.510	146.505	146.730
Cumberland	146.415	147.525	146.535	147.090 (100.0)
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	
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	146.940 (100.0)
Piscataquis	146.400	147.450	146.565	147.210 (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	147.570	146.445	147.540	145.210 (156.7)
Statewide Coordination	146.520			KQ1L System

Primary Repeater = Output Frequency of Primary Repeater plus CTCSS tone

Additional Frequencies:

3940 kHz Statewide (night) 52.525 MHz Statewide 6 M Coordination
7262 kHz Statewide (day) 223.500 MHz Statewide 1 ¼ M. Coordination
446.000 MHz Statewide 70 CM Coordination

Appendix D
Maine Repeater List
Current as of 09-18-10

Frequency	Location	Offset	Tone	Link	Comments
10 Meters					
29.680	Windham Hill	Minus	173.8		
6 Meters					
53.050	Litchfield	Minus	136.5	H	
53.090	Woodstock	Minus	71.9		
53.370	Hiram	Minus	136.5	H	
53.550	Washington	Minus	91.5		
53.570	Portland	Minus	136.5	H	Currently Off Air
2 Meters					
145.110	South Berwick	Minus			Local Coverage
145.130	Oxford	Minus	100.0		
145.170	Calais	Minus			
145.170	Merrill	Minus	123.0	E	
145.210	Cornish	Minus	156.7	J	
145.210	Sanford	Minus	156.7	J	
145.230	Portland?	Minus	100.0		Location or operation uncertain
145.250	Millinocket	Minus	100.0	G	
145.270	Palermo	Minus	100.0	I	
145.290	Bar Harbor	Minus			
145.290	Wales	Minus	100.0	I	
145.350	New Sharon	Minus	100.0	E	
145.390	Belgrade Lakes	Minus	100.0	F	
145.410	Alfred	Minus	103.5	B	
145.450	Hermon	Minus	67.0		
145.470	Orono	Minus			
145.480	Sanford	Minus			Currently off air
145.490	Washington	Minus	91.5		
146.610	Auburn	Minus			
146.610	Cooper	Minus	100.0	E	
146.640	Fort Kent	Minus	100.0		
146.640	Hollis Center	Minus	100.0		Local Coverage
146.640	Orrington	Minus	173.8		
146.670	Topsfield	Minus	100.0	E	
146.670	Augusta	Minus	100.0	E	
146.700	Litchfield	Minus	100.0		
146.715	Trenton	Minus			Local Coverage
146.715	T18 R12	Minus			
146.730	Madison	Minus	91.5		
146.730	Windham	Minus	100.0		Local Coverage
146.730	Presque Isle	Minus			
146.730	Wade	Minus			
146.745	Millinocket	Minus	100.0	G	
146.760	Waterville	Minus	103.5		
146.775	Saco	Minus	82.5		Currently Off Air
146.790	Augusta	Minus	100.0		

146.790	**Houlton**	**Minus**			
146.790	**Sumner**	**Minus**			
146.805	**Sanford**	**Minus**	**156.7**	**E**	
146.820	**Camden**	**Minus**	**100.0**	**E**	
146.835	**Naples**	**Minus**	**103.5**		
146.850	**Dixmont**	**Minus**	**100.0**	**E**	
146.880	**Buckfield**	**Minus**	**100.0**	**E**	
146.880	**Patten**	**Minus**			
146.910	**Ellsworth**	**Minus**	**151.4**		
146.910	**Mexico**	**Minus**			
146.925	**Arundel**	**Minus**	**103.5**	**D**	
146.940	**Holden**	**Minus**	**100.0**		
146.940	**Yarmouth**	**Minus**			**Local Coverage**
146.970	**Sugarloaf**	**Minus**	**100.0**		
146.985	**Cooper**	**Minus**	**179.9**		**Closed Repeater**
146.985	**Wiscasset**	**Minus**	**100.0**		
147.000	**Kents Hill**	**Plus**	**100.0**		
147.000	**Lincoln**	**Plus**	**100.0**	**E**	
147.015	**Hiram**	**Plus**	**103.5**	**H**	
147.030	**Bar Harbor**	**Plus**	**100.0**		
147.045	**Gray**	**Plus**	**103.5**		
147.060	**Washington**	**Plus**	**91.5**		
147.090	**Falmouth**	**Plus**	**100.0**		
147.105	**Brownville**	**Plus**	**103.5**		
147.135	**Brunswick**	**Plus**	**103.5**	**C**	
147.180	**Farmington**	**Plus**	**123.0**		
147.180	**Sanford**	**Plus**	**100.0**		
147.180	**Sanford**	**Plus**	**88.5**		**Local Coverage**
147.210	**Brunswick**	**Plus**	**100.0**		
147.210	**Milo**	**Plus**	**71.9**		
147.240	**Hope**	**Plus**			
147.255	**Gardiner**	**Plus**	**114.8**		
147.270	**Knox/Thorndike**	**Plus**	**136.5**		
147.270	**Waterboro**	**Plus**	**103.5**		
147.285	**Winslow**	**Plus**	**100.0**		
147.300	**Hampden**	**Plus**	**100.0**		
147.315	**Poland Spring**	**Plus**	**103.5**		
147.330	**Frenchville**	**Plus**	**103.5**		
147.330	**Cooper**	**Plus**	**118.8**		
147.345	**Skowhegan**	**Plus**			
147.360	**Portland**	**Plus**	**100.0**		
147.375	**Springfield**	**Plus**	**100.0**		
147.390	**Waldoboro**	**Plus**			

1 1/4 Meters

223.780	**Falmouth**	**Minus**	**103.5**		**Closed Repeater**
223.820	**Sanford**	**Minus**	**D023**		
223.940	**Woodstock**	**Minus**	**103.5**		**Closed Repeater**
224.000	**Hope**	**Minus**			
224.100	**Warren**	**Minus**			**Closed Repeater**
224.180	**Frenchville**	**Minus**			
224.240	**Exeter**	**Minus**	**103.5**		
224.280	**Washington**	**Minus**	**91.5**		
224.620	**Buckfield**	**Minus**	**103.5**		
224.780	**Waldoboro**	**Minus**	**107.2**		

70 Centimeters

441.500	**Cornish**	**Plus**	**167.9**	**J**	
441.500	**Sanford**	**Plus**	**167.9**	**J**	
441.600	**Sanford**	**Plus**	**203.5**		
442.000	**Auburn**	**Plus**			
442.200	**Hiram**	**Plus**	**82.5**	**D**	
443.200	**Kents Hill**	**Plus**	**88.5**	**F**	
443.500	**Freedom**	**Plus**	**103.5**		
444.000	**Cornish**	**Plus**	**167.9**		
444.100	**Scarborough**	**Plus**	**82.5**		
444.250	**Westbrook**	**Plus**	**82.5**		**Closed Repeater**
444.400	**Brunswick**	**Plus**	**88.5**		
444.400	**Holden**	**Plus**	**103.5**		
444.600	**Waterboro**	**Plus**	**82.5**		
444.900	**Washington**	**Plus**	**91.5**		
444.950	**Windham Hill**	**Plus**	**146.2**		
446.325	**Skowhegan**	**Plus**	**203.5**		
447.575	**Brunswick**	**Minus**	**88.5**		**Analog and DStar**
448.000	**York**	**Minus**	**173.8**		
448.725	**Alfred**	**Minus**	**103.5**	**B**	
449.025	**Woodstock**	**Minus**	**82.5**		**Closed Repeater**
449.075	**Farmington**	**Minus**	**114.8**	**A**	**Closed Repeater**
449.275	**Lincoln**	**Minus**			
449.275	**Belgrade Lakes**	**Minus**	**88.5**	**G**	
449.525	**Hope**	**Minus**			

33 Centimeters

927.488	**Denmark**	**Minus**	**131.8**	**In 902.4875**
927.638	**Portland**	**Minus**	**131.8**	**In 902.6375**

23 Centimeters

1,284.000	**Brunswick**	**Minus**	**88.5**

Please note not all of these repeaters have been verified and may not be on the air.

Send Updates To:

Bryce Rumery, K1GAX
k1gax@juno.com

Appendix E

ARES Team Concept

Maine ARES operates by the team concept. This provides for relief of operators during disasters, exercises and drills. It is seldom that a single resource (operator) will be deployed.

As most incidents involving ARES last for a period of 72 hours or longer, Maine ARES has adopted the team concept of operations.

It is not conceivable that a single ARES member can be assigned to a deployed location for a period of 72 hours or more without relief. ARES members are usually deployed in teams of two or more (per the ARCST resource typing) that allow an operator to get sufficient breaks to attend to personal issues get meal breaks and rest periods.

It is important to know that in a team there are leaders and members. The EC or Command Team Leader will assign a team leader to each ARES team that is deployed. Team members should always follow the directives of their team leaders.

The typical ARES teams are:

- Command Team (EC and AEC for Operations) – ARCST Type IV
    - Provides
        - Liaison between a primary served agency and ARES
            - EOC
            - Incident Command Post
        - Assignment of ARES resources
        - Briefing of ARES resources prior to assignment
        - Management of ARES resources
- EOC Communications Support Team – ARCST Types I through IV
    - Provides
        - ARES communications support to an EOC
- Communications Support Team – ARCST Types I through IV
    - Provides
        - ARES communications support in the field

APPENDIX F

Maine ARES Mutual Assistance Aid Team (MAMAT) Concept

Procedures for requesting mutual assistance

Requesting mutual aid within a Maine ARES district:

- The requesting EC will contact the DEC with their request for mutual aid. In the absence of a DEC, the requesting EC will contact the other ECs within their district.
- The DEC will contact the other ECs within the district with the mutual aid request.
- The ECs within the district will report back to the DEC with available ARES members in their county that will deploy. For districts without a DEC, the requesting EC will contact the other ECs within their district with their request for aid. The ECs will report back to the requesting EC with a list of available ARES members that will deploy.

Requesting mutual aid outside a Maine ARES district

- The requesting EC will contact the DEC from an adjacent district with their request for mutual aid. In the absence of a DEC, the requesting EC will contact the other ECs within the adjacent district.
- The DEC will contact the other ECs within the district with the mutual aid request.
- The ECs within the district will report back to the DEC with available ARES members in their county that will deploy. For districts without a DEC, the requesting EC will contact the other ECs within the adjacent district with their request for aid. The ECs will report back to the requesting EC with a list of available ARES members that will deploy.

Pre-Departure Functions

Team leaders should provide MAMAT members with notification of activation/assignment. Credentials should be provided for recognition by local authorities. They should provide a general and technical briefing on information drawn principally from the requesting authority, supplemented by reports from Amateur Radio, commercial radio, W1AW and Maine bulletins, and ARES Leadership officials. The briefing should include an overview of equipment and communication needs, MAMAT leadership contacts, and conditions in the disaster area.
The host EC's invitation, transportation (including routes in disaster area) and accommodations considerations, and expected length of deployment should all also be reviewed with the team members.

In-Travel Functions

Before and while in travel to the affected areas, team leaders should review the situation's status with the team: job assignments, checklists, affected area profile, mission disaster relief plan, strengths and weaknesses of previous and current responses, maps, technical documents, contact lists, tactical operation procedures, and response team requirements.

Arrival Functions

Upon arrival, team leaders should check with host ARES officials and obtain information about frequencies in use, current actions, available personnel, communication and computer equipment, and support facilities that could be used by the team to support the relief effort. The host's ARES plan in effect for the disaster should be obtained. A priority upon arrival should be the establishment of an initial intra-team communication network and an HF or VHF channel back to the home section for morale traffic. Team leaders should meet with served agencies, Amateur Radio clubs' communications staff, local ARES communications authority, and others as needed to obtain information and coordinate the use of frequencies. Communication site selections should take into account team requirements and local constraints.

In-situ Functions

Team leaders should make an initial assessment of functioning communication facilities, and monitor host ARES officials' communications, and other response team relief efforts to coordinate operations and reduce duplication of effort. Team members should be monitored and their capabilities to perform their duties evaluated. Proper safety practices and procedures must be followed. A daily critique of communication effectiveness with served units and communication personnel should be conducted.

Pre-Demobilization and Demobilization Functions

An extraction procedure for ham communicators should be negotiated with served agencies and host ARES officials before it is needed. To get volunteers' commitment to travel and participate, they must be assured that there will be an end to their commitment. Open-ended commitments of volunteers are undesirable, partly because they make potential volunteers hesitate to become involved.

Leaders must coordinate with the host ARES officials and served agencies, and other functions to determine when equipment and personnel are no longer needed. A demobilization plan should be in effect.

A team critique, begun on the trip home, should be conducted, and individual performance evaluations on team members should be prepared. Copies of critiques should be sent to both the home EC, DEC and in-disaster EC and DEC. Problems stemming from personality conflicts should be addressed and/or resolved outside of formal reports, as they only provide distractions to the reports. Equipment should be accounted for.

A post-event evaluation meeting should always be conducted, and a final report prepared upon which an update to the intra-state MAMAT plan can be made.

MAMAT Member Qualifications

The individual filling the role of MAMAT member must have high performance standards, qualifications, experience, and the ability to work with a diverse group of team members that will be required to provide relief to the affected areas. He or she must be able to work efficiently in a disaster relief operation under the most adverse conditions.

Additionally, a member should have demonstrated ability to be an effective team player, in crisis situations, a strong personal desire, and strong interpersonal communication skills. Knowledge of how Maine ARES, Red Cross and other agencies function at both the national and local levels is helpful. A working knowledge of the incident command system is useful as many events are managed under this system.

Members should be respected and recognized by officials and peers as a competent communicator, and should understand a broad range of disaster response organizations' capabilities and communication requirements.

Obvious, perhaps, but important: Members must be available with the consent of their employer to participate!

They should be physically fit to perform arduous work under adverse environmental conditions.

MAMAT members should have completed the following courses:

ARRL EC-001 and/or The Maine Emergency Communications Course, Level I
ARRL EC-002 and/or The Maine Emergency Communications Course, Level II
IS-100 Introduction to the Incident Command System
IS-200 Basic Incident Command System
IS-700 National Incident Management System (NIMS), an Introduction

Summary

It should be noted that there is a fine balance of authority over a deployed MAMAT. The in-disaster EC (or delegated authority) should be able to make decisions as to use and deployment of an incoming team. Therefore, an incoming team should be prepared to submit themselves to such authority; this is evidenced by the fact that any team, internal or external, has only a limited view of the overall operation. The supervising authorities will naturally have a better overview of the whole situation.

In turn, however, the in-disaster authority should be discouraged from abusing the resources of incoming teams. Should a team no longer be required, or a situation de-escalates, the team should be released at the earliest possible time, so that they may return home to their own lives.

The MAMAT tool should be one of "last resort--better than nothing." Whenever possible, amateurs from the affected county should be used for support. It is a lot to ask of a volunteer to travel far from home, family and job for extended periods of arduous and potentially dangerous work.

APPENDIX G

NIMS COMPIANCY

Maine ARES formally adopts the National Incident Management System (NIMS).

The point of contact (POC) for Maine ARES shall be the Maine ARES Section Emergency Coordinator:

Bryce P Rumery, K1GAX
75 Ocean House Rd
Cape Elizabeth, ME 04107
(207) 799-1116 (H)
(207) 632-1284 (C)
k1gax@juno.com

Maine ARES formally adopts the Incident Command System (ICS) as its primary operating guideline for operations during disasters and other public service activities.

Maine ARES maintains communications links for use between local Incident Command Posts, the Local EOCs, the MEMA EOC and regional/federal EOCs via planned amateur radio frequencies.

Maine ARES maintains a means to gather, verify, coordinate and disseminate information through the AECs for Public Information in each county.

Maine ARES promotes the use of mutual aid agreements with ARES groups in surrounding counties and districts through APPENDIX E of this document.

Maine ARES maintains NIMS training for all ARES members through the requirement of all ARES members to complete IS-100 and IS-700 and for Maine ARES leadership officials to complete IS-200 and IS-800.

Maine ARES actively solicits participation in State, County and Local NIMS based exercises.

Maine ARES will utilize ICS concepts in all exercises that it initiates and for all public service events it participates in.

After participation in all exercises and public service events, Maine ARES will identify shortfalls within its response application of the NIMS concepts and principles. Corrective actions will then be taken to response actions and plans to be applied to future exercises and public service activities.

Maine ARES has developed an inventory of response assets and typing of resources which is included in this appendix

CERTIFICATION AND CREDENTIALING

Certification of Maine ARES personnel will be made through their primary served agencies. Certification will be via the following:

a. Records of external training
    1. External training will include those courses taken by the ARES member from outside sources to include, but not limited to the American Radio Relay League (ARRL), Maine ARRL Section ARES, the National Weather Service and FEMA Independent Study Courses.
    2. Maine ARES members will provide copies of all certificates of training to the training coordinator of their primary served agency.

b. Records of internal training
    1. Internal training will include those courses that are provided by their primary served agency at regular and special ARES meetings and training sessions.
    2. The primary served agency will retain a copy of training completed by Maine ARES members at regular and special meetings. Maine ARES members will provide copies of all certificates of training to their County Emergency Coordinator or the Assistant Emergency Coordinator for Training (AEC).

Credentialing of Maine ARES personnel will be made through their primary served agency. Credentialing will be via the following:

a. Credentialing levels

Trainee – A new ARES member with no prior training in emergency communications (Amateur Radio License only)
Responder – Has met all training requirements for the Responder level in Maine ARES
Leadership – Has met all training requirements for the Leadership level in Maine ARES
Management – Has met all training requirements for the Management level in Maine ARES
Senior Management – Has met all training requirements for the Senior Management level in Maine ARES

b. Certifications and qualification standards

Trainee

Possesses a valid Amateur Radio License and has registered with Maine ARES

Responder (normal ARES Responder)

Has completed the following training:

Requirements for Trainee level **and**
IS-100 (Introduction to the Incident Command System)
IS-700 (Introduction to the National Incident Management System (NIMS))
Introduction to Emergency Communications
ARRL ARECC EC-001 **or** Maine Emergency Communications Course Level I

Leadership (AEC, OES, Group Supervisor or Team Leader)

Has completed the following training:

Requirements for Trainee and Responder levels **and**
IS-200 (Basic Incident Command System)
ARRL ARECC EC-002 **or** The Maine Emergency Communications Course Level II

Management (EC and DEC)

Requirements for Trainee, Responder and Leadership levels **and**
ARRL ARECC EC-003 **or** The Maine ARES Leadership Course
ICS-300 (Intermediate Incident Command System)
IS-800 (Introduction to the National Response Framework)

Senior Management (ASEC or SEC)

Requirements for Trainee, Responder, Leadership and Management levels **and**
ICS-400 (Advanced Incident Command System)

Credentialing of Maine ARES members will be via an identification badge or card issued by their primary served agency.

Verification of credentialing, certifications, training and licenses will be accomplished through their primary served agency.

Credentialing and certification records will be maintained by their primary served agency.

Appendix H

RESOURCES AND TYPING

The resources and typing of resources for Maine ARES is contained in the pages that follow.

The typing of these resources makes request for these resources by served agencies easier as they can order resources by type, as needed.

Resource: Amateur Radio Communications Support Team

Category: EMA Communications Support
Kind: Team

Minimum Capabilities (Component	Minimum Capabilities (Metric)	Type I	Type II	Type III	Type IV	Type V	Type VI
Personnel	Manning	4 radio operators 1 unit leader	3 radio operators 1 unit leader	2 radio operators 1 unit leader	1 radio operator 1 unit leader	1 radio operator (fixed/mobile)	1 radio operator (portable)
Equipment	Communications	Mobile VHF/UHF amateur radio FM transceiver AC power supply Battery backup Dual band Vertical antenna Portable mast 50 feet of RG-8X or RG-58 with connectors Portable VHF amateur radio repeater AC power supply VHF vertical antenna Portable mast	Mobile VHF/ UHF amateur radio FM transceiver AC power supply Battery backup Dual band vertical antenna Portable mast 50 feet of RG-8X or RG-58 with connectors Portable VHF/UHF amateur radio FM transceivers (4) One spare rechargeable battery pack for each portable Battery charger for each portable	Mobile VHF/UHF amateur radio FM transceiver AC power supply Battery backup Dual band vertical antenna Portable mast 50 feet of RG-8X or RG-58 with connectors Portable VHF/UHF amateur radio FM transceivers (3) One spare rechargeable battery pack for each portable Battery charger for each portable	Mobile VHF/UHF or VHF amateur radio FM transceiver AC power supply Battery backup Dual band vertical antenna Portable mast 50 feet of RG-8X or RG-58 with connectors Portable VHF/UHF or VHFamateur radio FM transceivers (2) One spare rechargeable battery pack for each portable Battery charger for each portable	Mobile VHF/UHF or VHF amateur radio FM transceiver AC power supply Battery backup Dual band vertical antenna Portable mast 50 feet of RG-8X or RG-58 with connectors Portable VHF/UHF or VHF amateur radio transceiver One spare rechargeable battery pack One alkaline battery shell	Portable VHF/ UHF or VHF amateur radio FM transceiver One spare rechargeable battery pack One alkaline battery shell Two changes of alkaline batteries ¼ wave antenna for portable

Resource: Amateur Radio Communications Support Team							
Category: EMA Communications Support **Kind: Team**							
Minimum Capabilities (Component	**Minimum Capabilities (Metric)**	**Type I**	**Type II**	**Type III**	**Type IV**	**Type V**	**Type VI**
Equipment	Communications	50 feet of RG-8X or RG-58 with connectors Portable VHF/ UHF amateur radio FM transceivers (5) One spare rechargeable battery pack for each portable Battery charger for each portable One alkaline battery shell for each portable Two changes of alkaline batteries for each portable ¼ wave antenna for each portable County VHF mobile transceiver AC power supply	One alkaline battery shell for each portable Two changes of alkaline batteries for each portable ¼ wave antenna for each portable County VHF mobile transceiver AC power supply VHF vertical antenna Portable mast 50 feet of RG-8X or RG-58 with connectors County VHF portable transceivers (2) One spare rechargeable battery pack for each portable	One alkaline battery shell for each portable Two changes of alkaline batteries for each portable ¼ wave antenna for each portable County VHF mobile transceiver AC power supply VHF vertical antenna Portable mast 50 feet of RG-8X or RG-58 with connectors	One alkaline battery shell for each portable Two changes of alkaline batteries for each portable ¼ wave antenna for each portable	Two changes of alkaline batteries ¼ wave antenna for portable	

Resource: Amateur Radio Communications Support Team							
Category: EMA Communications Support **Kind: Team**							
Minimum Capabilities (Component)	**Minimum Capabilities (Metric)**	**Type I**	**Type II**	**Type III**	**Type IV**	**Type V**	**Type VI**
Equipment	Communications	VHF vertical antenna Portable mast 50 feet of RG-8X or RG-58 with connectors County VHF portable transceivers (2) One spare rechargeable battery pack for each portable Battery charger for each portable Marine VHF transceiver AC power supply Marine VHF vertical antenna Portable mast 50 feet of RG-8X or RG-58 with connectors	Battery charger for each portable HF amateur radio AC power supply Antenna tuner HF multiband dipole antenna Portable mast 50 feet of RG-8X or RG-58 with connectors 3 KW (or better) generator				

Resource: Amateur Radio Communications Support Team

Category: EMA Communications Support
Kind: Team

Minimum Capabilities (Component)	Minimum Capabilities (Metric)	Type I	Type II	Type III	Type IV	Type V	Type VI
Equipment	Communications	HF amateur radio transceiver AC power supply Antenna tuner Multiband HF dipole antenna Portable mast 50 feet of RG-8X or RG-58 with connectors 3 KW (or better) generator					
Availability	Duration	Available for Extended operations (greater than 1 week)	Available for extended operations (greater than 1 week)	Available for short duration operations (1 week or less)	Available for short duration operations (1 week or less)	Available for short duration operations (12 hours or less)	Available for short duration operations (12 hours or less)
Management Support	Coordination Capabilities	Incident staff capable of supporting the communications unit	Incident staff capable of supporting the communications unit	Incident staff capable of supporting the communications unit	Team management only	Single resource	Single resource

Comments:
Availability does not require continuous availability of specific personnel, only that the teams are available to those specifications. Personnel may be rotated in and out of specified team positions. Type IV, V and VI are to serve as independent relay points. Type III teams are expected to support local level incident operations. Type II teams are expected to support local and regional incident operations with multiple agencies. Type I teams are expected to support regional incident operations with multiple agencies.

Appendix I Ready Kits

BASIC READY KIT

The following are the minimum items required for operating during a disaster or exercise for ARES members. Any ready kit should be packed for a 72 hour period. Ready kits are a personal thing. One should add or delete items from any ready kit as they feel appropriate as long as additions or deletions do not detract from communications.

- ☐ TWO METER HANDHELD (DUAL BAND RECOMMENDED)
- ☐ SPARE RECHARGEABLE BATTERIES
- ☐ STANDARD BATTERY CHARGER
- ☐ 2-METER MAGMOUNT
- ☐ COAXIAL DIPOLE OR RIBBON CABLE J POLE ANTENNA AND COAX
- ☐ EAR-PHONE
- ☐ DRIVERS LICENSE
- ☐ COUNTY EMA/ARES ID BADGE
- ☐ STATE FIRST RESPONDER ID BADGE (if issued)
- ☐ COPY OF CURRENT AMATEUR RADIO LICENSE
- ☐ APPROPRIATE DOCUMENTS
    - COUNTY ARES EMERGENCY OPERATIONS PLAN
    - OTHER COUNTY ARES DOCUMENTS/PLANS
- ☐ APPROPRIATE CLOTHING FOR CURRENT AND FORCASTED WEATHER CONDITIONS
- ☐ APPROPRIATE FORMS
    - ICS-309A
    - ICS-214A
    - ICS-213
    - ARRL RADIOGRAMS
- ☐ PENS AND PENCILS
- ☐ CLIPBOARD
- ☐ NOTEPAD
- ☐ FOOD AND WATER
- ☐ FLASHLIGHT (AA) (WITH SPARE BATTERIES)
- ☐ POCKET KNIFE
- ☐ ROLL OF ELECTRICAL TAPE
- ☐ PERSONAL FIRST AID KIT
- ☐ TEN DOLLARS IN BILLS AND CHANGE
- ☐ PRESCRIPTION MEDICINES
- ☐ PATENT MEDICINES
- ☐ SPARE EYEGLASSES
- ☐ ALARM CLOCK
- ☐ PERSONAL TOILETRIES

INTERMEDIATE READY KIT

The following are items for an intermediate ready kit for ARES members.

All items contained in the basic ready kit, plus:

For the handheld radio:

- ☐ SPEAKER/MIC OR HEADSET WITH BOOM MIC
- ☐ ALKALINE BATTERY SHELL
- ☐ THREE CHANGES OF ALKALINE BATTERIES

Additional Equipment:

- ☐ TWO METER (DUAL BAND PREFERRED) MOBILE SYNTHESIZED RADIO (25 WATTS MINIMUM)
- ☐ POWER CABLE WITH CIGARETTE LIGHTER TO ARES CONNECTORS
- ☐ POWER CABLE WITH ALLIGATOR CLIPS TO ARES CONNECTORS
- ☐ SPARE FUSES FOR MOBILE RADIO
- ☐ POWER SUPPLY FOR RADIO
- ☐ GELCELL OR LEAD ACID BATTERY (10 AMP/HR MINIMUM) WITH ARES (ANDERSON POWER POLE) CONNECTORS
- ☐ HEADPHONES
- ☐ “BART” OR TRIPOD FOR PORTABLE OPERATION
- ☐ 15 FEET OF MASTING
- ☐ QUARTER WAVE OR BETTER ANTENNA FOR PORTABLE OPERATION.
- ☐ 100 FEET OF RG-8X COAX (TWO 50 FOOT PIECES WITH PL-259 CONNECTORS AND BARREL ADAPTER)
- ☐ VARIOUS RF ADAPTERS FOR COAX
- ☐ EXTENSION CORD
- ☐ TWO TO THREE PRONGED AC ADAPTER
- ☐ PATENT MEDICINES (ASPIRIN, ANTACID, ETC.)
- ☐ BASIC SAFETY EQUIPMENT
    - ORANGE OR LIME GREEN SAFETY VEST WITH REFLECTIVE STRIPES (ANSI Type II or III)
    - HARD HAT
    - SAFETY GOGGLES
    - WORK GLOVES
    - SAFETY BOOTS (STEEL TOE)
    - PARTICLE MASKS
    - SUNGLASSES (PLASTIC LENSES)
    - COVERALLS
    - BROAD BRIMMED HAT (SUMMER & RAINY WEATHER)
    - BLOUSING GARTERS OR THICK RUBBER BANDS (FOR INSECT PROTECTION IN THE FIELD)
    - RAIN SUIT OR PONCHO (ORANGE OR YELLOW)
    - LEATHERMAN TYPE POCKET SURVIVAL TOOL
    - SPACE (EMERGENCY) BLANKET
    - SUN SCREEN
    - MOSQUITO REPELLENT

- SAFETY CONES (VEHICLE)
- SMALL FIRE EXTINGUISHER (VEHICLE)

ADVANCED READY KIT

The following are items for an advanced ready kit for ARES members.

All items contained in the intermediate ready kit, plus:

- ☐ HF RADIO SYSTEM WITH POWER SUPPLY CAPABLE OF OPERATIONS ON 80 THROUGH 10 METERS
- ☐ BACKUP POWER SYSTEM THAT WILL OPERATE INDEPENDENT OF THE COMMERCIAL MAINS (BATTERY, GENERATOR OR OTHER POWER SOURCE)
- ☐ PORTABLE HF ANTENNA SYSTEM FOR 80 THROUGH 10 METER OPERATION
- ☐ AC POWER STRIP
- ☐ DC POWER STRIP WITH ARES CONNECTORS (ANDERSON POWER POLE CONNECTORS)
- ☐ DUCT TAPE
- ☐ SHELTER (TENT & SLEEPING BAG)
- ☐ PORTABLE STOVE, MESS KIT & EATING UTENSILS
- ☐ WATERPROOF MATCHES
- ☐ TOOLS
- ☐ SOLDERING IRON AND SOLDER
- ☐ VOM
- ☐ SWR BRIDGE OR DIRECT WATTMETER
- ☐ FOLDING SHOVEL
- ☐ SLEDGE HAMMER (3 POUND)
- ☐ HAND AXE
- ☐ FLAGGING TAPE

Maine Amateur Radio Emergency Service

“When All Else Fails”