

Boxboro!

2018
September 7, 8, & 9

Our 35th Convention



**ARRL New England
Division Convention**



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Boxborough, Massachusetts



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Valid September 8 through Saturday, September 29, 2018 until 6pm. Limit one coupon per household. Not valid for prior purchases, special orders, open accounts, or gift certificate purchases. Not applicable on dealer and or any other special pricing. Cannot be combined with any other special offers or coupons. Any purchase minimum is calculated before tax. No cash/credit back. For in store use only. Coupon must be surrendered at time of purchase. No photo copies accepted. If you return an item(s) that qualify for discount, discount will be lost. Please present coupon at start of transaction.

Welcome to Boxboro! 2018



A big addition to our program this is year the Nashua Amateur Radio Society's "Youth Outreach" in the Parade Room. Even if you are a few years past being considered a youth, the exhibit features many aspects of our hobby with which you may not be familiar. And while you are in the Parade Room, be sure to visit our many other fine exhibitors.

For the second year in a row, we are featuring an evening program after the Saturday Grand Banquet, including a jam session, movie, and storytelling. Check the program guide for details.

Thanks for being a part of our convention - I hope you have an enjoyable time!

**Regards,
Bob, K1IW
Chairman
Boxboro 2018!**

The New England FEMARA Scholarships

This is why we hold the convention.

The wonderful hams listed below are recent recipients of the FEMARA scholarships that your attendance at Boxboro helps make possible. Your donations, and all proceeds from the convention go to the FEMARA scholarship fund, which helps students attend a college or trade school of their choice. The ARRL Foundation administers the perpetual fund. Each year the foundation scholarship committee meets to carefully review hundreds of applications received from remarkably talented young men and women. The foundation receives cash and stock donations from hams and their families worldwide which include bequests from living wills and trusts. Please consider helping this great undertaking.

For applications, write the ARRL Foundation, Newington, CT 06111 - When you donate to the foundation, please specify the FEMARA New England Fund!

2018 Winners (\$2000 each)

George E. Falardeau III, KC1ANB
Shefali Janorkar, KD2FIW
Julie Knappik, KB1YTT
Daniel B. Ruskin, KB1ZCL

2017 Winners (\$2000 each)

Yettive S. Crestohl, K1YTV
Theodore Parker, N1HW
Ulysses C. Parker, KU1K
Daniel Ruskin, KB1ZCL

2016 Winners (\$2000 each)

Yettive S. Crestohl, K1YTV
George E. Main IV, W1GIV
Daniel A. Shrives, KC1AUA
Bahnou Upton, KB1OIS

See the full list at:

< <http://boxboro.org/scholarships> >

Boxboro 2018 ~ Schedule

Friday, September 7

Educational Workshops:

ARES Connect
WX4NHC National Hurricane Center
SKYWARN Training

DX/Contest Dinner

The Baker Island DXpedition — KH1/KH7Z
Don Greenbaum, N1DG

Door Prizes!

Saturday, September 8

Flea Market and Exhibit Hall: 9 am — 5 pm

Forums: 9 am — 5 pm

Convention Banquet: 7 pm — 10 pm

"Astronaut Abby" and an Out Of This World talk
Abigail Harrison

Door Prizes!

Sunday, September 9

Flea Market and Exhibit Hall: 9 am — 1 pm

Forums: 9 am — 1 pm

Prize Drawing: 1 pm

W1A Special Event Station

Friday: 9 pm — midnight

Saturday: 8 am — 6 pm & 9 pm — midnight

Sunday: 8 am — 11 am

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Friday Schedule, September 8	
Room	Federal
10:00	ARES Connect
12:00	
12:30	WX4NHC Presentation
14:30	SKYWARN Training
16:00	
17:00	
18:00	Cocktails
19:00-21:00	DX Dinner

FEMARA thanks the following individuals and organizations for their support:

Donations of Prizes and Services:

Yaesu
N1DDK James Lee

Moonbounce Donations (≥ \$50)

AA6YQ	David Bernstein	K1CRR	Ronald Osimo
K1DP	Domenic Padula	K1EIC	Betsey Doane
K1EIR	Barbara Lombardi	K1LU	James McCobb
K1TWF	Mike Raisbeck	K5TEC	Bob Phinney
KB1EKN	Mark Duff	KB1IRB	Phil Smith
KB1OIQ	Andy Stewart	KC1GAT	George Peabody
KC1KAE	Thomas Harper	W1DYJ	Larry Banks
W1HS	Steve Goldsmith	W1MVP	Michael Pasquale
--	Robert K Brown		

Our apologies if we missed listing your name / organization.



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www.NESciTech.org - www.STARS.radio - www.NEIAR.org

Saturday, September 9								
Room (Seating)	Federal (350)	Colonial (125)	Seminar (72)	Cottillion (100)	Directors (40)	Board (50)	Green wood (40)	Deck (40)
9:00	Yeasu System Fusion II & Updates	Raspberry Pi Control Update	Brown ARC Early Wireless History	AM Forum				
10:00	Building a Modern Solid State Amp, or How We Shrunk the Linear	Intro to HF Propagation	SKYWARN Overview	Creating Successful Youth Outreach Projects	Tech in a Day Course	Intro to Fox Hunting		
11:00	FT8 DXpedition Mode	6-Meter Sporadic E and Weather Systems	CHIRP	Portable Satellite Station Design, Operation, and Planning for an upcoming ISS Crew Contact		Easy RF Fingerprinting		VE Session I
Noon	ARRL Forum	Recent Updates: the Science of HF Propagation	Care and Feeding of Astron Power Supplies	STEM Learning for Young People via High Altitude Balloons (HAB) Carrying Amateur Radio	Emergency Communications			
13:00	AMSAT Forum	Practical transmitting magnetic loop design	NE QRP Forum (cont'd) ↓↓↓↓	Inside ENIGMA: Cracking the WW-2 Enigma Codes & Spy Radio (cont'd) ↓↓↓↓	NTS Forum			VE Session II (cont'd) ↓↓↓↓

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Across Eastern and Central Massachusetts, we have:
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Come visit us in the Boxwood Room (off the Atrium)
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*(Membership not required to win,
and you don't have to be present to win.)*

Winners drawn Sunday at noon.

First Prize: ICOM 2730 Dual Band Mobile

Second Prize: Yaesu FT70DR HT

Third Prize: More Arduino Projects for Ham Radio (ARRL Book)



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Saturday, September 9

Room (Seating)	Federal (350)	Colonial (125)	Seminar (72)	Cotillion (100)	Directors (40)	Board (50)	Green wood	Deck (40)
14:00	Cubes In Space	YCCC Meeting	NE QRP Forum	(cont'd) ↓↓↓ ENIGMA	(cont'd) ↓↓↓	Digital Messaging with Winlink for NTS and EmComm		cont'd) ↓↓↓
15:00	STARS Youth Forum		Coax: Your Guide to the Critical Link	NESMC Annual Meeting	Tech in a Day Course	YL Forum		VE Session II
16:00	Entry Level Licensing: What's Worked and What Hasn't			Amateur Radio & Deafness: "Can You Hear Me Now?"				
17:00								
18:00	Cocktails							
19:00	Convention Banquet		NE QRP Meet & Greet, Vendors					
20:00			Night & Build-A-Thon					
21:00								
21:30		Music Jam Session		Movie Night				
23:00								

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W1YU

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LEARN MORE ABOUT W1YU:

<https://w1yu.sites.yale.edu/> & <https://www.facebook.com/deW1YU/>



Friday, October 12th & Saturday October 13th 2018

DEERFIELD NH Fairgrounds.

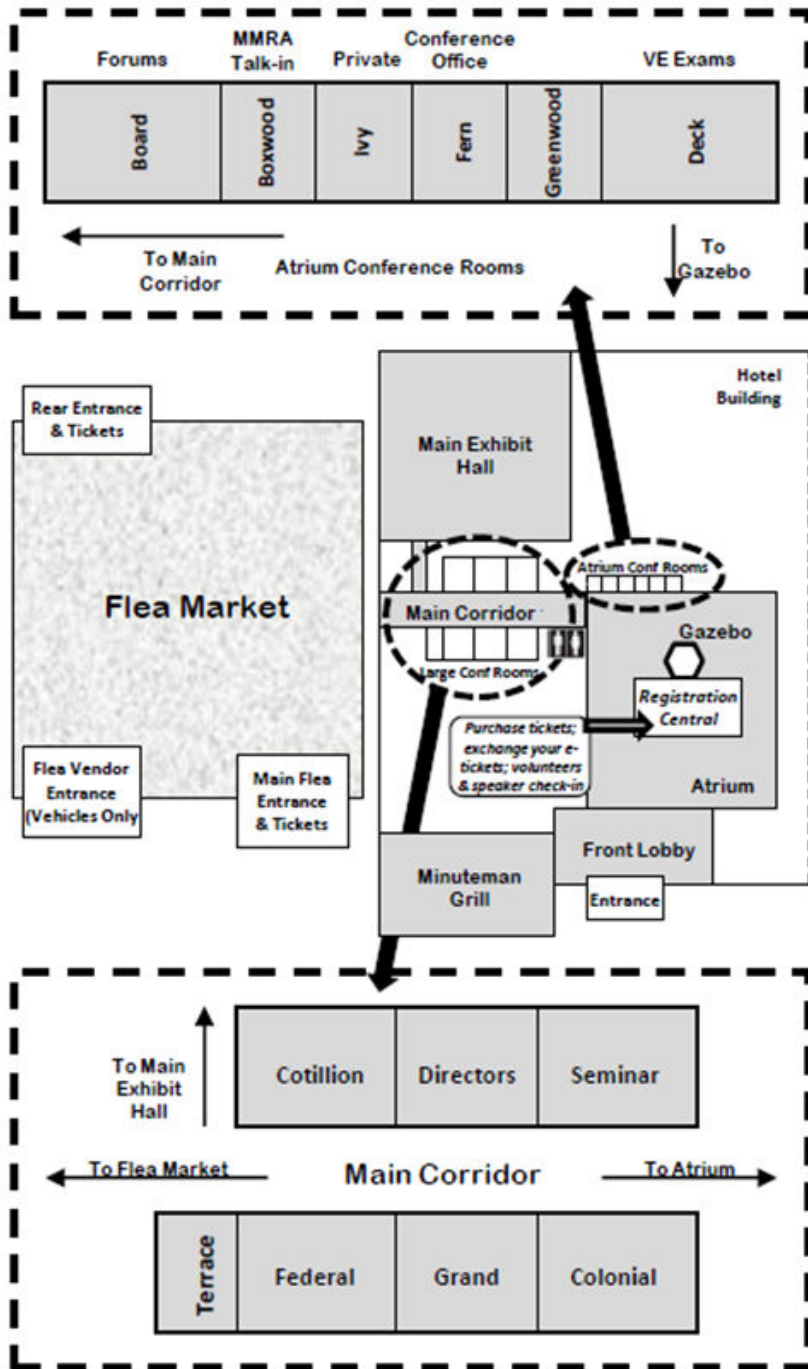
www.near-fest.com www.forum.near-fest.com

GRAND PRIZE – Elecraft KX2 – Drawing Saturday 2 PM

Winner does NOT need to be present to win.

[Spring 2018 dates: May 3rd & 4th 2019]

Site Maps



A youth and family oriented amateur radio club
Headquartered at New England Sci-Tech Inc.

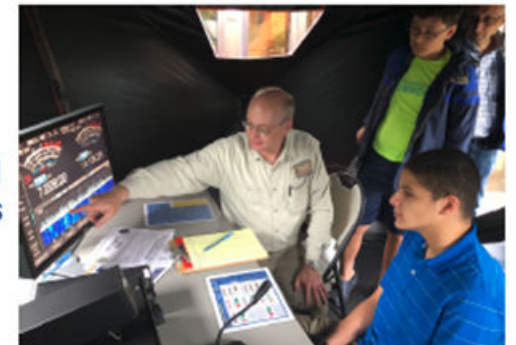
16 Tech Circle, Natick MA
Founded and directed
by youths. Join today!

www.STARS.radio



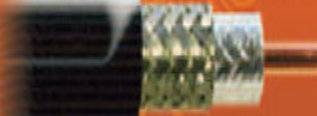
Mission: to encourage youth
to pursue interests in amateur
radio, electronics, astronomy,
and other STEM activities.

Tuesday club meetings 6:30-8 pm at NE SciTech, Natick
Youth Forum at ARRL Boxboro convention
Annual ARRL Radio Field Day
Youth NETS on the air
Radio contest training
Fox hunts
Antenna building
Weather spotter training
QSL card sorting parties
Public telescope nights
Jamboree-on-the-Air
Winter Field Day



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Schedule Details — 1

FRIDAY, September 7

10:00—11:30 Federal

ARES Connect ~ Mike Corey, K11U

The Amateur Radio Emergency Service (ARES) will phase out the traditional ARES report forms later this year in favor of an online system called *ARES Connect*, a volunteer management, communications, and reporting system. The new system will allow information to be logged by ARES members and managed through the Field Organization.

12:30—13:45 Federal

WX4NHC Presentation ~ Julio, Ripoll, WD4R

Julio will present an overview on the National Hurricane Center ARC operations.

14:00—17:00 Federal

SKYWARN Training ~ Rob Macedo, KD1CY

SKYWARN is a volunteer program with nearly 400,000 trained severe weather spotters. These volunteers help keep their local communities safe by providing timely and accurate reports of severe weather to the National Weather Service. Learn the basics of thunderstorm development; fundamentals of storm structure; identifying potential severe weather features; information to report; how to report it; and basic severe weather safety.

19:00—22:00 Federal / Colonial

DXCC/Contest Dinner ~ Special Guest Don Greenbaum, N1DG

Join your fellow hams for a delicious DXCC/Contest dinner on the first night of the convention. Accompanying us will be Don Greenbaum, N1DG, telling the story of the Baker Island KH1/KH7Z DXpedition.

SATURDAY, September 8

9:00—10:00 Federal

Yaesu System Fusion II and Updates ~ John Kruk, N9UPC

The world of digital voice is rapidly expanding and Yaesu is expanding the System Fusion technology. In addition, new products are coming in 2018 making it an exciting year.

9:00—10:00 Colonial

Raspberry Pi Repeater Controller Update ~ James Lee, N1DDK

The Raspberry Pi can be used for many ham radio projects—like a linkable repeater controller. James will present the goals and current state of the project. This is an updated talk from last year revealing new accomplishments and challenges. Hardware and software architectures will be explained. Python and Git hub will be explained—tools affording participants the ability to replicate the prototype and contribute to hardware, software, and testing. At the conclusion, James will give a live demo. Bring your 220 and 440 HTs.

9:00—10:00 Seminar

Brown ARC early Wireless History ~ Mike Umbricht, W9GYR

Mike will discuss the history of amateur wireless at Brown University spanning the 1910s to the recently launched CubeSAT.

9:00—10:00 Seminar

AM Forum ~ Tim Smith, WA1HLR

Tim will discuss the conversion of a Gates BC 1T AM broadcast transmitter at ARRL headquarters to function on 160 and 80/75 meters.

9:00—17:00 Directors

TECH-IN-A-DAY™ Review

Conducted by members of the Cape Ann Amateur Radio Association, Gloucester, Massachusetts. [Tech-in-a-Day™ is a trademark of Stanley Stone, W4HIX for FCC Amateur Radio Technician Class examination preparation.]

10:00—11:00 Federal

Building a Modern Solid-state Amplifier (or “How We Shrank the Linear”) ~ David Shoaf, KG6IRW

Elecraft’s David Shoaf will discuss how the newest RF amplifier modules are enabling manufacturers to build high power amplifiers into smaller spaces. He’ll step through some of the manufacturing techniques used to make it a reality today.

10:00—11:00 Colonial

Introduction to HF Propagation ~ Tom Carrigan, NE1R

Tom will provide a basic introduction to the subject of space weather and its effects on HF radio propagation. The audience will gain an understanding about how HF radio signals move through the Earth’s atmosphere. Such terms and phenomena as ground wave, sky wave, NVIS, skip, sun spots, solar flares, K index, A Index, Solar Flux Index, D layer absorption, will be explained. Some practical guidance will be presented to assist operators in selecting the best operating frequencies for their intended communications.

10:00—11:00 Seminar

SKYWARN Overview ~ Rob Macedo, KD1CY

Rob will present a brief overview of the Southern New England SKYWARN program. (Note the official training course will be offered on Friday from 1400-1700.)

10:00—11:00 Cotillion

Creating Successful Youth Outreach Projects

Fred Kemmerer, AB1OC

High Altitude Balloon 3, Kit Building and Morse Code for High-School Students, and our Summer Licensing Class program for High School and Middle School Students. The idea here would be to share some youth outreach and STEM projects that are working well to engage young people in Amateur Radio related STEM learning and getting licensed. This presentation will focus on what has worked well and how to best create successful youth outreach projects involving Amateur Radio and STEM learning.

10:00—11:00 Board

Introduction to Fox Hunting ~ John Salmi, KB1MGI

John will discuss fox hunting techniques for beginners and avid hunters alike. He will lead a live demonstration outside to find hidden transmitters on 2- and 80 meters.



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SATURDAY SEPTEMBER 8th

3:00PM

in the Cotillion Room

Including a special presentation:

Going it Alone – Repeater Coordination without the ARRL

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New Hampshire, Maine, Massachusetts and Rhode Island.**

Our Meeting is Open to All

You do not need to be a member to attend our meeting.

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10:00—13:00 Deck**VE Session I**11:00—12:00 Federal**FT8 DXpedition Mode ~ Don Greenbaum, N1DG**

Don will reflect on using the newest FT8 mode in Fox/Hound mode from Baker Island KH1/KH7Z and offer tips for the DXpeditioner and the hunter.

11:00—12:00 Colonial**6 Meter Sporadic E and Weather Systems ~ Joe Dzekevich, K1YOW**

Joe's presentation will use Amateur Radio to explore possible correlations between weather systems and sporadic E clouds to see if they are collocated. While some of the main causes of sporadic E propagation are wind shear, meteor strikes and upper atmospheric tides (ultimately coming from solar EUV energy inputs), radio operators have noticed that sporadic E propagation is also changed significantly by hurricanes and storms. This talk will present specific cases where K1YOW used amateur radio to investigate the effects of weather storms on the formation and/or enhancement of 6-meter sporadic E clouds. The author used DX Maps and earth wide weather model charts combined with operations on 6 meters to examine possible correlations between the location of the sporadic E clouds and the weather storm systems. Initial findings show a high degree of correlation when magnetic field strength is taken into consideration. The presentation has been updated to also include Winter sporadic E.

11:00—12:00 Seminar**CHIRP – Program your radios with open source software****James Lee, N1DDK**

Updated for 2018, with a new Windows-10 mega-hint, this favorite presentation is a brief overview of the Open Source Chirp software which can be used to program most radios. Attendees will learn: what is Chirp; what radios are supported; how to download and use Chirp; common problems and solutions.

11:00—12:00 Cotillion**Portable Satellite Station Design, Operation, and Planning for an upcoming ISS Crew Contact ~ F. Kemmerer, AB1OC**

Fred will share design, construction, and operational experience for three computer-controlled, portable satellite ground stations which provide a range portability and performance options. Solar power, switchable polarity, L-band (1.2 GHz) uplinks, and computer tracking will be discussed. Operations using both FM and linear satellites will be covered. Fred will describe how to create a ground station to contact ISS crew along with formally applying and planning.

11:00—12:00 Board**Easy RF Fingerprinting ~ John Salmi, KB1MGI**

John will present on how to "fingerprint" an RF signal using your radio and a computer sound card.

Enjoy the convention,
but also
get on the air for the annual

ARRL VHF Contest

this weekend!

Saturday, 2 PM
until
Sunday, 11 PM

<http://www.arrl.org/september-vhf>

*Don't forget to turn your beams
toward Maine!*



New England Amateur Radio

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New England Amateur Radio is a non-profit 501(c)3 organization to promote education and growth of amateur radio as a STEM activity, as a communications hobby, and as support for emergency preparedness and public service.



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Schedule Details — 4

SATURDAY, September 8 (cont'd)

12:00—13:00 Federal

ARRL Forum ~ Tom Frenaye, K1KI, New England Division Director, and Mike Raisbeck, K1TWF, Vice Director

Tom and Mike will discuss current affairs at the League followed by a Q&A session. Ask the League leadership some tough questions!

12:00—13:00 Colonial

Updates: The Science of HF Propagation ~ Phil Erickson, W1PJE

Earth's ionosphere, produced each day by solar extreme ultraviolet light, provides the reason why HF frequencies do not propagate in straight lines. Phil will follow on Tom NE1R's introduction to propagation with a little deeper discussion of the ionosphere and its variations, and how it relates to amateur radio propagation. He will also describe highlights of national and international space weather research, including observation programs at MIT Haystack Observatory in Westford MA. W1PJE will present information on how hams can participate in active scientific research through the HamSCI citizen science initiative and will cover recent amateur-professional science initiatives. The talk will be at a general level with particular focus on Amateur Radio enthusiasts

12:00—13:00 Seminar

Care and feeding of Astron power supplies ~ James Lee, N1DDK

Astron power supplies are the most common work horse supplies found in most ham shacks. This presentation will outline repairs and upgrades to a few Astron power supplies done by the author. Suggested improvements and repairs will be applicable for the RS20, RS35 and other models. Various supply issues will be discussed. Photos and hands-on parts will be part of the presentation. Although not every possible repair will be discussed, the attendees should walk away with the confidence and sources to repair their supply.

12:00—13:00 Cotillion

STEM Learning for Young People via High Altitude Balloons Carrying Amateur Radio ~ Fred Kemmerer, AB1OC

The Nashua Area Radio Society has completed three High Altitude Balloon (HAB) projects with local schools. Fred's presentation will cover the STEM learning curriculum associated with HAB projects, HAB equipment and tracking, flight planning, launch and recovery and post-flight data analysis. Video from their HAB flights including footage from the edge of space will be included.

12:00—13:00 Board

Emergency Communications ~ Steve Schwarm, W3EVE

Steve will share his experiences in emergency communications. An emergency communications "veteran", Steve spent four days in New York City in the aftermath of 9/11, and served as a race course net control station during the Boston Marathon bombing.

13:00—14:00 Federal

AMSAT Forum ~ Barry Baines, WD4ASW & Burns Fisher, WB1FJ

Barry and Burns will present an overview of current activities at AMSAT, including the status of current AMSAT Engineering Projects and AMSAT's focus moving forward.

13:00—14:00 Colonial**Practical Xmitting magnetic loop design ~ Ted Robinson, K1QAR**

Magnetic loop antennas offer a solution to three major HF antenna problems: height, space and noise. One-tenth the size and height, and 10 db quieter than a dipole, a transmitting loop still equals a dipole's performance, presumably due to its magnetic near field having reduced interaction with the ground and surroundings. A 3-foot loop will illustrate to attendees the level of engineering required to handle 500 watts, including a stepper controller necessary for tuning the loop's tiny bandwidth.

13:00—16:00 Seminar**New England QRP Forum ~ Carl Achin, WA1ZCQ**

The NEQRP annual Boxboro symposium of talks for low-power radio enthusiasts, field operators, and home-brewers/kits builders in the hobby. We will present three separate talks, each about 45 minutes in length with Q&A after each speaker.

13:00—15:00 Cotillion**Inside ENIGMA: Cracking the WW-2 Enigma Codes & Spy Radio
Tom Perera, W1TP & Mike Crestohl, W1RC**

The German military used Enigma cipher machines to encode all of their important communications. The breaking of these Enigma codes shortened the war by two years, saved thousands of lives, and perhaps kept Hitler from producing an Atomic bomb. Tom will explain in detail how the Enigma works and trace the history of the cracking of the Enigma codes. The real story behind the "Imitation Game" movie will be explained.

"Mr. Mike" will discuss the equipment made to be set up and taken down with alacrity, covert operating, and the necessity of not getting caught. He will also discuss techniques used to detect and apprehend covert radio operators. W1RC will discuss vacuum tube-based equipment spanning WWII to the early 1960s, as well as early solid-state transceivers such as the Delco 5300 used in the 1970s.

13:00—15:00 Board**NTS Forum ~ Marcia Forde, KW1U**

Marcia will moderate a forum for those interested in traffic handling and the National Traffic System.

13:00—17:00 Deck**VE Session II**14:00—15:00 Federal**Cubes In Space ~ Christina Sage, KG1PSY**

Christy will discuss the Cubes In Space (TM) program from Iddoodle Learning, how the kids from the CC-ARC and STARS radio clubs have participated, and how kids from scout groups, radio clubs, and schools can participate.

14:00—17:00 Colonial**YCCC Meeting ~ Dennis Egan, W1YE**

Among the topics to be discussed: a wrap-up of the 2018 Word Radiosport Team Championship and HQ9X—Up and Ready!

**THANK YOU TO THE FOLLOWING R.A.C.E.S.
MEMBERS WHO MADE IT TO FIELD DAY
2018 AT PROVIDENCE EMA! LOOKING
FORWARD TO A SUCESSFUL 2019!**

AMANDA	W1IZE
BARRY	W1BSN
BRIAN	K1PVD
CHRIS	KB1WRK
DWIGHT	KA2CNN
GABRIEL	K1GGL
JOE	K1CR
JIM	KC1FWA
LEEANN	K1YKH
LUIS	K1LEG
MARIAN	AA1VU
MATTHEW	KB1FUP
MIKE G	N1YKH
MIKE M	N1VSU
NATHAN	KB1ZRE
ROBERT	N1UKH
TONY	KD1S

**THANK YOU TO THOSE AMATEUR RADIO
OFFICIALS THAT TOOK THE TIME AND
VISITED OUR SITE:
ROB KD1CY NWS, BOB W1YRC ARRL,
AND DAN KA1BNO ARRL.**

**73 KK1PMA
NEW MEMBERS WANTED!
CONTACT MIKE@DIPOLUSA.COM**

14:00—15:00 Board**Digital Messaging with Winlink for NTS and Emcomm
Greg Bennett, KC1CIC**

Greg will discuss setting up and using Winlink Express for both ARES and NTS. Winlink can be used to send email directly via the internet or radio-to-radio by means such as packet and PACTOR. Numerous agencies and ARES groups have adopted Winlink Express as their default mode of digital operation. ARES groups wishing to send long haul traffic such as health and welfare reports can send them via Winlink to their NTS counterparts. Greg will also cover the message formatting and the use of the built-in Winlink forms commonly used for local ARES communications and communications with an NTS station

15:00—16:00 Federal**STARS Youth Forum ~ Rishi Bhagat, KC1BKK**

The Sci-Tech Amateur Radio Society (STARS) is a student-run radio club made up of students, parents, teachers, and supportive amateur radio operators from around greater Boston, the metro-west suburbs, and New England. There are active members who are FCC-licensed amateurs, provisional members who are studying for their Technician licenses, and supporting members who lend help or expertise where needed.

15:00—16:00 Cotillion**NESMC Annual Meeting ~ Bob DeMattia, K1IW**

New England Spectrum Management is the the VHF-UHF frequency coordinator for Maine, Massachusetts, New Hampshire, and Rhode Island. Members and non-members alike can join us at our annual meeting. We will brief everyone on the status of the repeater bands as well as the new situation with the ARRL repeater directory.

15:00—17:00 Board**YLS Afternoon ~ Anne Manna, WB1ARU**

Anne invites all women to come and meet other women who are interested in our shared hobby. There will be time to visit and a special guest speaker. All women and girls are welcome, licensed or not. Enjoy a chance to relax and learn what other YLS enjoy about ham radio

16:00—17:00 Federal**Entry Level Licensing - What's Worked and What Hasn't
Bruce Blain, K1BG**

All of us entered the amateur radio hobby in a number of different ways. Whether it was the Class B license of the 30s and 40s, the Novice license of the 50s through the 90s, or the current Technician class license, Bruce looks at the history of entry level license requirements and conditions, what's worked and what hasn't, and what it means for attracting youth to the hobby.

16:00—17:00 Seminar**Coax: your guide to the critical link ~ Jeremy Breef-Pilz, KB1REQ**

Coaxial cable is one of the few common components in all amateur radio applications. Come learn about the pro's and con's of the many options available to you from a commu-

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nications industry insider. This presentation will cover some basic coax theory and history, traditional coax types, enhanced and high performance coax, and several types of specialized cable. This lightly technical discussion is reinforced by practical considerations for the ham radio operator and is appropriate for anyone looking to learn more about what lies between their radio and antenna, whether beginner or seasoned pro.

16:00—17:00 Cotillion

Amateur Radio & Deafness: “Can you hear me now?”

Joe Reisert, W1JR

Joe will give an overview of human hearing and ear safety. He will present tips on how to improve ham radio receiving equipment to maximize hearing capabilities; discuss hearing tests; how to assess and improve one’s hearing; choosing a hearing aid.

Cocktails 18:00 Dinner 19:00—22:00 Federal / Colonial

Convention Banquet

Keynote Speaker Abigail Harrison, "Astronaut Abby"

Abigail Harrison is a girl with a dream. She aspires to be an astronaut– the first astronaut to go to Mars. In 2015, at the age of 18 years old, Abby founded The Mars Generation, a 501(c)(3) non-profit with the support of an advisory board of astronauts, engineers, scientists, and her hundreds of thousands of supporters. The non-profit has reached over 25 million people in its first two years of operation with its work to educate and excite kids and adults about space exploration and STEM education.

19:00—23:00 Seminar

NE QRP Meet & Greet, Vendors Night & Build-A-Thon

NEQRP sponsors a Build-a-thon on Saturday evening from 7 PM until the last builder is finished. One and all are welcome to sign up and join in our scheduled activities.

21:30—23:00 Colonial

Music Jam Session

Get ready to rock out at the Boxboro! Saturday Night Jam Session, hosted by Eliot Mayer, W1MJ, of The Chameleons. The jam session may go into some long blues improvisations, spontaneous rock, blues, or folkie directions, but we also offer chords and lyrics for fun but not-too-difficult songs for those that might want to practice playing or singing.

21:30—23:00 Cotillion

Movie Night

A special screening of National Geographic's **Before Mars**, followed by the first episode of the series, **Mars: Novo Mundo**.

21:30—23:00 Gazebo

Open Mic Ham Radio Storytelling

Have you had an amusing encounter with another ham, on or off the air? An antenna experiment that resulted in more sparks than signal? Or perhaps ham radio impacted your life in a way you couldn't have imagined? Now's the time to share your ham radio-related story!

09:00—12:00 Federal

Getting Started in Amateur Satellites ~ Bob Hayes, KB1SWZ

Bob and others will help beginners to understand, plan, and make a QSO on the FM single channel amateur satellites. They'll provide an overview of the variety of currently available and soon to be launched amateur satellites describing their capabilities (FM, SSB/CW, and telemetry). They will also conduct a satellite demo during the forum where attendees will be able to observe a satellite contact outside using a HT and hand-held antenna. A Q&A will follow the demonstration.

09:00—10:00 Colonial

Operating 160 meters from a town lot ~ Steve Kerchel, AA4AK

Stephen's updated talk will discuss using an 80-meter Extended Double Zepp on 160 meters. He will include hardware show-and-tells of a customized high-power, low-loss 160-meter tuner, and his implementation of the flag receiving antenna featured in the September, 2017 QST. AA4AK will also recount his successful experience using diversity reception on 160 meters.

09:00—10:00 Seminar

Introduction to Net Control operations ~ Edward Snyder, W1YSM

Ed's presentation will be aimed the new ham who is interested in becoming a Net Control Station.

09:00—10:00 Cotillion

A Modulated CW interface for on-air CW training

Greg Algieri, WA1JXR

Greg will talk about the Central Massachusetts Amateur Radio Association's MCW interface kit-building project that allows users to operate CW with an FM radio and the "On the Air" Learn CW Training Class that was conducted on the club repeater in 2018. Perhaps your club will want to duplicate CMARC's innovative project.

09:00—10:00 Board

Intro to Vintage Radio Restoration ~ Dan Brown, W1DAN

While SDR radios and the latest ham technology is exciting, sometimes it is enjoyable to live in the past and light up some old tube gear. Dan will discuss the allure of old radios or "boat anchors": how to obtain, restore, and bring relics back to life. He will also discuss vintage SSB, CW and AM

10:00—11:00 Colonial

Amateur Radio - The Ultimate STEM Activity ~ Bob Phinney, K5TEC

Why should your school start a radio club? For the Science, Technology, Engineering, and Math (STEM) that all schools are doing. Bob will discuss how your school can rise above the average and help students obtain a radio license that will open doors to: wireless technology of the future, space science and satellite technology, worldwide communications, and high-tech electronics. An Amateur Radio license will put your students above the rest when they start writing their college applications!

10:00—11:00 Seminar

Introduction to Formatting and Handling Radiogram Traffic
Edward Snyder, W1YSM

Ed will introduce the new amateur operator to the nature of traffic nets - how they are structured and how they run. The presentation will cover: what is traffic; why is it relevant today; how to announce you are holding traffic; formatting a radiogram; ARL codes; emergency and priority traffic; "through" traffic; delivering traffic; Net etiquette.

10:00—11:00 Cotillion

Keeping your Ham Radio Club Vibrant ~ Andy Stewart, KB1OIQ

Eastern MA Affiliated Club Coordinator KB1OIQ will give a talk about the benefits available to ARRL Affiliated Clubs and discuss activities and events that have been successful in local clubs. Perhaps some of these ideas will be well received in your own club. This will be an interactive talk where the audience will have an opportunity to offer ideas and suggestions that might be beneficial to other clubs.

10:00—11:00 Board

MARS Forum (open) ~ Robert Mims, WA1O EZ

What is the Military Auxiliary Radio Service? Come to the forum and learn about Army and Air Force MARS.

10:00—13:00 Deck

VE Session III

11:00—12:00 Colonial

Young People Who Do Reverse- and Forward-Engineering Projects ~ Gerald Lemay, VA2GLU

What is a hands-on tech activity, doable in two 30-minute sessions, that is both fun and useful? Come to Gerald's presentation and participate in this innovative Amateur Radio scouting activity. Participants in small groups will reverse engineer, then forward engineer the same switching power supply (Joule Thief) used by the Scouts. Afterward, the RF emission from this circuit will be detected using a small, portable HF receiver.

11:00—12:00 Seminar

Getting Involved with Public Service Events
Gary D. Schwartz, N1ZCE

Gary will discuss how participating in public service events is a great way to build your radio operating skills, create visibility for ham radio, have fun, and serve your community.

11:00—12:00 Cotillion

uBITX QRP Transceiver ~ Andy Stewart, KB1OIQ

The uBITX QRP transceiver from India is a very popular and open platform. With schematics and Arduino source code freely available, many people have made hardware and software modifications and shared them with the ham radio community. Andy will describe the uBITX and the common modifications that people are making, including unique enclo-

tures. In addition, Andy will describe his unique enhancements to make this rig accessible to visually impaired hams.

11:00—12:00 Board

MARS Membership Meeting (closed) ~ Robert Mims, WA1O EZ

A closed meeting for MARS members to discuss MARS.

12:00—13:00 Federal

Groton Solar Farm and EMI ~ Rodney Hersh, WA1TAC

Groton Electric built a 2 MW solar farm to provide electric power to the town. Its close proximity to the MIT Haystack facility in Westford, MA, created the possibility of RF Interference. Extensive testing was done to prove that this solar farm did not cause interference to either MIT or local radio amateurs.

12:00—13:00 Seminar

Education Thru Communications ~ Joe Fairclough, WB2JKJ

Joe will describe how to bring ham radio to the classroom as a teaching tool and involve students in learning via the magic of Amateur Radio

12:00—13:00 Board

Western Mass Section Meeting ~ Raymond Lajoie, KB1LRL

Ray will host a meeting of Western Mass. ARRL section members on how to increase overall activity and strengthen emergency communications.

12:00—13:00 Cotillion

Calibration Techniques for your Home Lab
Jacques Audet, VE2AZX

In this highly educational presentation, Jacques will cover a number of topics: using inexpensive voltage references to verify the calibration of multimeters; accurately measure low value reference resistors that will be used as reference for current measurements; making inexpensive voltage and power references for checking AC/RF instruments; testing for linearity of AC voltmeters/power meters; accurately measure voltage ratios with a sound card; accurately measuring reference capacitors; using a GPS frequency standard.

12:00—13:00 Board

Not Just a Bunch of Repeaters - A System ~ MMRA

The Minuteman Repeater Association operates 22 repeaters across Eastern and Central Massachusetts. What makes them unique is they are all interconnected. The MMRA network is the largest system of linked analog repeaters in New England. At this presentation, we will show you how it's done and what the system is capable of.

13:00—15:00 Federal

Prize Drawing & Convention Wrap-up



FEMARA Incorporated

FEMARA Inc. is a Massachusetts non-profit corporation that sponsors and runs the ARRL New England Division Convention. The group, which has been in existence for over 35 years, began as a consortium of area radio clubs. FEMARA is qualified under IRS 501(c)(3). Donations to FEMARA are deductible as allowed by IRS regulations.

Our goals are twofold; to offer the richest and most diverse ARRL Convention in the country, and to support the ARRL Foundation's scholarship program.

73,
Mike Raisbeck, K1TWF
President, FEMARA, Inc.



FEMARA Officers

President	Mike Raisbeck - K1TWF
Vice President	Bob DeMattia - K1IW
Treasurer	Joyce DeMattia - N1QPH
Clerk	Al Prudhomme - W1DUW

Convention Committee

Chair, Parking	Bob DeMattia - K1IW
Vice-Chair, Exhibitors	Mike Raisbeck - K1TWF
Speakers & Forums	Phil Temples - K9HI
Ticketing, Website, Information Sys.	Ian MacKenzie - KB3OCF
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Archivist	Kayla Creamer - W2IRY
Contest Dinner & Special Event Station	Dennis Egan - W1UE
Flea Market	Ken Caruso - WO1N
Prizes & Entertainment	John Flood - N1JAF
Publication Editor	Larry Banks - W1DYJ
Volunteer Coordinator	Steve Schwarm - W3EVE
ARRL Exams	Bruce Anderson - W1LUS

The Hampden County Radio Association is Western Massachusetts' most active Ham Radio Club since it's start in the mid 1950's.

We have over 50 people at every monthly meeting and members being active in DX Chasing, Digital, CW, SOTA, Field Day, Contesting, Kit Building, Knowledge Sharing. License Classes, and all aspects of ham radio activities.

Whether you are a new ham or someone who has been licensed for many years, the HCRA is the Ham Club for You.

Come join us at our monthly meetings on the first Friday of each month or any of our activities. (September thru June)



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