

F.C.A.R.C. Inc.
P.O. Box 773
Greenfield, MA 01302



FIRST CLASS MAIL



THE COMMUNICATOR THE COMMUNICATOR

April 2013

Upcoming Events

Club breakfast: Saturday. April 13, 8 a.m.: Denny's, Greenfield
E-Board meeting: Monday April 22, 6:00 p.m.: Greenfield High School
Meeting & Program: Monday April 22, 7:15 p.m.: Greenfield High School - Field Day Planning
Club picnic: Saturday Date, time, place TBA
Club breakfast: Saturday May 11, 8:00 a.m.: Denny's, Greenfield
E-board meeting: Monday May 20, 7:00 p.m. : Greenfield High School
VE license test: Monday May 27, 7:00 p.m.: Northfield Unitarian Church

April 2013

Calendar

PROGRAM MEETING – MARCH 18 AT GREENFIELD HIGH SCHOOL

Field Day Planning – Field day this year is Saturday and Sunday June 22 and 23. FCARC will again set up and operate from Poet's Seat Tower in Greenfield.

AMATEUR RADIO TECHNICIAN LICENSE CLASS BEGINS APRIL 4

An Amateur Radio Technician license class will be presented by the Franklin County Amateur Radio Club at the Shelburne Fire Department, 18 Little Mohawk Rd, Shelburne, MA. The first of six sessions starts at 7:00 p.m. Thursday, April 4th. Additional classes will be at 7:00 p.m. on April 11 and 25, and May 2, 9, and 16. Note that there will be no class on April 18 during the school vacation week.

The Shelburne Fire Station is across the street from the First Congregational Church, which is quite visible from Rte 2. It is about 4 miles east of the turnoff to Shelburne Falls, and 5.4 miles west of the Greenfield Rotary (I-91 exit 26).

Anyone interested should contact one of the organizers: Chris Myers KB1NEK, Al Woodhull N1AW, Bob Dickerman WA1QKT, or Belle Dyer KB1NOG.

SKYWARN TRAINING – MAY 1 AND MAY 9

Two opportunities for Sky Warn training are coming up in Franklin County:

- Greenfield Transportation Center, 12 Olive Street, Greenfield, Wednesday May 1, 2013, 6:30 to 9:30 p.m. Pre-Register with Nina Martin-Anzuoni at 413-624-0131 x101 or email admin@frcog.org
- Heath Community Center, Thursday May 9, 2013, 6:30 to 9:30 p.m., organized by Ellen Jenkins, KB1RCF.

Secretary's Report

E-BOARD MEETING, MONDAY, MARCH 11, 2013 – BOB DICKERMAN WA1QKT

1. N1AW Al mentioned Franklin Land Trust tour August 18 180Km, 115Km, 100Km wants radio coverage; considering helping with event in collaboration with other radio clubs.
2. Chris KB1NEK said may want greeter for March 18 meeting since may have CERT/MRC members attending; may have treasurer's report, report on tech course, repeater.
3. Regarding emergency communications, Chris KB1NEK said hope to:
 - Get clarification on resignations and appointments of local ARES officials from SEC John N2YHK and SM Ed W1KT when they attend our meeting next week.
 - Set date for hospital drill and start planning for that. Carolyn KB1WTQ mentioned that drill scenario is coordination of delivery of oxygen given road outages, and that Homeland Security is interested in 4-county drill.
 - Re-establish contacts with Baystate FMC staff Roger Wrigley and Cheryl, and Shelburne Control staff soon.
4. Carolyn KB1WTQ offered Deerfield Town Hall for meetings.
5. Planning for upcoming meeting topics
 - March 18 meeting - Mary Nathan of Red Cross will discuss disaster operations, and the roles and coordination of ham radio, MRC, and CERT in assisting Red Cross

- April - Nina KB1WVA on CERT/SKYWARN/MRC/DART emergency services; if we don't schedule Nina, we can start Field Day preparations in April meeting
 - May - Picnic / Field Day preparations and overview
 - Annual FD meeting
6. Technician Class - First meeting, to be only organizational, on Thursday March 21 at Shelburne Falls Fire Department.

E-BOARD MEETING, MONDAY, MARCH 18, 2013 – BOB DICKERMAN WA1QKT

1. Chris KB1NEK mentioned issue of possible problem in 2 m repeater; sometimes seems to have "popping and crackling" noise (vs. white noise) on received signals, most apparent on weak or distant stations, is very intermittent. Al N1AW and Chris reported:
- Al N1AW and Chris have been up to repeater site for visual check from ground, noted that new equipment has been mounted on tower, some unused cabling visible
 - Al did tests with MFJ analyzer, found RX signals at site ranging from -65dB for repeater or N1EWK signals to < -100 dB for KB1NEK signals
 - Options for further action that may be considered if problems persist:
 - Try to characterize bug by listening critically to repeater, correlate noise with weather activity?
 - Try separate TX antenna?
 - Check for loose hardware?
 - Check for dissimilar metals (Al/Cu) in feedline?
 - Rich KB1NOX suggested check for water in feedline?
 - Swap out repeater with spare repeater?
 - John N2YHK suggested tapping and shaking cables, electronics, duplexer Polyphasors equipment in base building
 - Find climber, probably pro, to visually inspect/shake tower parts/replace parts/tighten parts?
 - Replace antenna? Al suspects antenna is more than a decade old
 - Replace feedline?
2. Emergency communications
- There are seats available in Concord, NH ARES Academy on Saturday March 30th, 2013 for ARES training
 - SEC John N2YHK said that Tom N1OTS's resignation from ARES DEC, for health reasons, has been accepted, and that Chris KB1NEK should continue as EC for Franklin County west. On the broader topic of the role of ham radio in emergencies, John said he's been working since January with Pat Carnevale, who is Region 3 and 4 MEMA Manager, and with RACES people, other SECs, and others, to come to agreements as to how amateurs may assist MEMA with emergency communications. MEMA has indicated that the role for amateur radio in assisting MEMA during emergencies will emphasize "situational awareness", i.e., having hams collect and transmit information regarding status of roads, weather conditions, and any other item of interest. A new organization to replace RACES, Auxiliary Communications System (ACS), is being formed to organize operators that interact with state facilities. Operators at state facilities may be asked to cover landline, fax, WebEOC, local broadcast radio, as well as amateur radio communications.
- Carolyn KB1WTQ still waiting for date for hospital drill from SEC John.
 - VHF antenna parties soon for Colrain and Deerfield EOCs,
3. HF antenna parties soon for Belle KB1NOG and Bob W1SRB
4. Technician Class - First meeting, to be only organizational, on Thursday March 21 at Shelburne Falls Fire Department.

News, Activities & Articles

SECRETARY'S REPORT FOR MARCH 18, 2013 FCARC MEETING – BOB DICKERMAN WA1QKT

After we enjoyed coffee and snacks in the GHS faculty lounge, the meeting was brought to order at 7:15 PM by Chris KB1NEK.

Chris started by introducing our speaker and special guests, including Mary Nathan, Regional Response Manager for the Red Cross, Mary Elkins KB1ME, Vice President of the MTARA and Red Cross Disaster Responder, Ralph Swick KD1SM, ARRL Assistant Section Manager (ASM) and Affiliated Club Coordinator (Northeast), and ARES Liaison to Red Cross, and John Ruggiero N2YHK, ARRL Section Emergency Coordinator (SEC) for Western Massachusetts.

Al N1AW reported that some of us suspect that our 2 m repeater may have a noise problem; sometimes there is a "popping and crackling" noise on received signals, most apparent on weak or distant stations. The problem is intermittent. We would like members to pay attention to the repeater noise level and whether it seems to be correlated to weather conditions. See the E-board notes for more details and possible actions to be taken.



Carolyn KB1WTQ said that she became motivated to become licensed and involved in ham radio when she saw hams helping in the aftermath of tropical storm Irene. She is still hoping that we can hold an ARES-sanctioned Western Massachusetts emergency drill, involving communications between the four counties, and locally involving the Baystate FMC hospital, the Shelburne Control dispatch center, and town EOCs, to organize and assess amateur radio emergency communications capability in the region. Such a drill had originally been scheduled for last fall, but was cancelled just days before it was to be held. Despite the fact that the drill was cancelled, preparations for it prompted a useful assessment of the ham radio equipment at Baystate FMC, as well as an assessment of radio capabilities at various other sites. She noted that it is best for each town to have its own ham radio station and ham operator volunteers who are residents within that town, since, in many disaster scenarios, roads are not passable. She is hoping to receive a new date for the drill from SEC John N2YHK soon.

Howard N1LUP gave a treasurer's report. We started month with \$2133.61, had income of \$138.00, and expenses of \$88.13, resulting in a final balance of \$2183.48. The VE team balance was unchanged at \$132.00.

Our guest speaker Mary Nathan told us about the mission of the American Red Cross, beginning with mention of Clara Barton, who started the American organization in the late nineteenth century. The Red Cross is focused on disaster relief. Mary said that her region includes Western Massachusetts and Worcester counties. Much of the organization's work is in helping

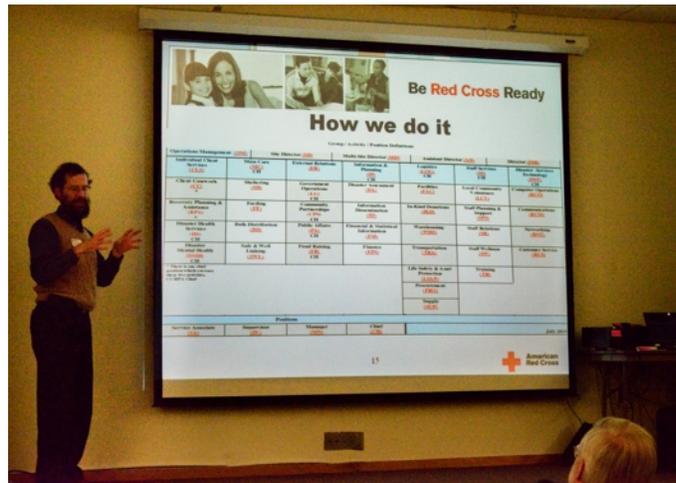


victims of local house fires; her group responds to about 250 such events each year. The Red Cross is funded solely by donations, and receives no government funds. Most of the manpower for the organization comprises volunteers, of which she has about 320.

Mary said that she became convinced of the value of amateur radio for emergency communications during the ice storm of December 2008, when she became trapped by closed roads for more than a day in the town of Heath. She said that everything was completely covered by ice there, and that all conventional communications services, including landlines, cell phones, and internet, were completely dead. She was grateful and amazed when John KB1NOH and Barb KB1NOI arrived and set up radio equipment, and immediately established 2-way communication with the outside world. Barb and John handled a lot of important traffic, not the least of which was a message to Mary's family to let them know where she was, and that she was OK.

She said that in large disasters, one of the first tasks is disaster assessment, meaning finding out which areas have been impacted and what kind of help is needed. MEMA has indicated that "situational awareness" and SKYWARN reports from ham radio operators can help with this. Whether shelters that need to be opened, and, if so, what their locations should be, must be established. Distribution of food and supplies must be planned and executed. Often, the Red Cross takes over operations at shelters that are first established by local authorities. Local Red Cross volunteers are deployed first, and then volunteers from outside the area are moved in if necessary. Outside volunteers may work for 2-week periods. Shelter priorities are registration, safety, food and water, security, and health and medical issues. The Red Cross also offers training in shelter management to local groups.

Ralph Swick KD1SM elaborated on some of the ways ARES members may assist the American Red Cross. He said that amateurs may operate at bulk distribution points for cleaning supplies for flood or tornado damage cleanup, or other supplies. Amateurs may assist shelter residents with transmitting the residents' safety and welfare information to remote sites for entry into the Red Cross Safe and Well website. He noted that, although the Red Cross sometimes deploys with their own 100 W radio transceivers that operate in a 47 MHz radio band licensed to the Red Cross, hams may assist Red Cross volunteers with the installation, configuration, and operation of that radio equipment.



Mary Elkins KB1ME passed out an "IF IT HAPPENED TO YOU TONIGHT... A Personal Disaster Readiness Quiz" that we all took. The quiz questions had to do emergency food, water, first aid kits, planning, training, and radio and communications capabilities. The results were revealing; no perfect scores ensued, and the average score was perhaps 50%, judging from shows of hands. Bob W1SRB won a portable first aid kit for having the



lowest quiz score - ostensibly because he has just started settling into his new home and hasn't "found all his stuff" yet!

19 people attended the meeting.

STATUS OF ARES OFFICIALS IN FRANKLIN COUNTY - BOB DICKERMAN WA1QKT AND CHRIS MYERS KB1NEK

Recently the ARES District Emergency Coordinator (DEC), Tom Foxwell, N1OTS, resigned his position due to ill health. At the moment the only occupied ARES position in Franklin County is that of Emergency Coordinator (EC), held by Chris Myers, KB1NEK. Up to now, Franklin County has been allocated one DEC and three EC positions. The Western Mass. ARES Section Emergency Coordinator (SEC), John Ruggiero, N2YHK, has not yet said anything yet about filling the vacant positions.

KB1BSS 2 METER REPEATER PROBLEMS & STATUS MARCH 2013 – AL WOODHULL N1AW

There have been various reports of problems with the repeater, manifested as noise, either crackling or a buildup of white noise on repeated signals.

First, what it is not:

It is not co-channel interference. There are other repeaters in New England using our 146.985 MHz, -600 KHz offset frequency. A few people at high elevations (N1AW, KB1NOG) sometimes hear the output of one these repeaters located in New Hampshire. But anywhere in our normal coverage area these signals are much less strong than our own repeater and thus will not be heard when our repeater is transmitting. In the fall of 2010 we sometimes had problems with repeater users elsewhere in New England transmitting on our input frequency, but at the time our PL (CTCSS) tone control was disabled, and the problem went away when major maintenance to repair lightning damage was done and normal PL functioning resumed.

N1AW wrote an article on "Strange Sounds on the Repeater" for the November 2011 Communicator that provides more information on this.

Another thing it is not:

It is not a problem with the repeater transmitter. Evidence for this is that the voice ID and announcements generated by the repeater controller, as well as the carrier "tail" do not seem to be bothered by the noise. Also, N1AW can hear some users' signals on the input frequency, especially if he hikes up to a hilltop near his house but far enough away from the repeater not to be overloaded. Abnormal noise has not been heard on these signals.

Weak signals?

In some cases noise can be due to weak signals. In fact, the noise doesn't seem to affect transmissions by stations with strong signals into the repeater, either because they run high power or are close to the repeater. In some cases noise can appear on a signal from a handheld or low power mobile



repeater antenna, base at 80'



WPVQ, 95.3, 260' to 280'

radio when the user moves just a little bit (a quarter wavelength is only 19 inches, that can make a big difference). Or, if the battery in a handheld is weak, power may decrease during a transmission, perhaps enough that the signal that was full quieting at the start becomes less than full quieting.

What is it?

It seems to be interference coming into the repeater receiver. There is a "Repeater Builder" website with loads of information on all aspects of repeater construction, operation, and maintenance, and we have found two articles there that suggest ways noise can be generated locally. One possible problem is loose connections between metal structures near enough to the repeater transmitter that r.f. is picked up and causes arcing at these connections. Another article suggests that a similar problem can exist inside a coaxial feedline if it is double shielded with two different kinds of metal, such as copper and aluminum. If moisture gets in corrosion can occur where the different metals are in contact, and these spots can act as diodes. In a diode the powerful signals from multiple nearby transmitters can mix and generate signals on other frequencies, including, perhaps, the repeater input frequency. Our repeater transmitter and receiver are using the same antenna, and it seems almost a miracle that we can separate a microvolt signal coming down from the antenna to the receiver from the 50 watt transmitter signal using the same wire.

We are now trying to figure out ways to test our ideas. Our antenna has been in place for about 12 years, and presumably is using the original feedline, so exposure to wind and weather could have allowed moisture to get into the

feedline or the antenna itself. There are at least eight other antennas on the tower we use. We don't know what they all do, but at least one is a high power F.M. broadcast antenna, and we suspect most of the others are connected to repeaters of some kind. So we have radio frequency energy on various frequencies and we have a place where unwanted frequency mixing could be taking place. Also, when we looked closely at the tower we saw three, possibly four, cables that were unconnected at the bottom of the tower. It is reasonable to suspect that these wires that are out of use could be connected to unused hardware of some sort higher up.

There are also some new things on the tower - there are cables that have obviously been installed since the last time the tower was painted, and there are security cameras that were not present when I took some pictures of the tower a year ago. So there could be new equipment related to other things going on.

An experiment to try:

When we were working on the problems our 440 repeater had last year an experiment that eventually led us in the right direction was to put up a separate transmitting antenna lower down on the tower. We could do this on our two meter system, too.

Another approach:



Links at 180'



lights, more antennas at 150'



Loose cables



tangle of cables

I've only been involved with the technical aspects of our repeaters for a few years, but the documents I have inherited seem to indicate that the antenna we are now using was installed twelve years ago - presumably the antenna cable is also that old. Maybe we should just decide it's time to replace these items.



THE COMMUNICATOR is an informational publication for members of the Franklin County Amateur Radio Club. Officers: President: Chris Myers, KB1NEK (camyers_1@verizon.net), Vice President: Al Woodhull, N1AW (n1aw@arrl.net), Treasurer: Howard Field, N1LUP (howfield@comcast.net), Secretary: Bob Dickerman, WA1QKT (rld@dickermanelectronics.com), Director: Belle Dyer, KB1NOG (bdyer58@mtdata.com), Director: Bob Solosko, W1SRB (w1srb@arrl.net)

This is your newsletter! Amateur radio information of general interest, club member project descriptions and doings, radio applications to other activities, corrections, or suggestions are all welcome. Individual submissions make for variety! We need more writers! Send submissions to Bob Solosko at w1srb@arrl.net.