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

**FIRST CLASS MAIL**

# THE COMMUNICATOR

THE COMMUNICATOR

## April 2015

## Upcoming Events

- E-Board Meeting: Monday, Apr 13, 6:00 p.m.: GCC Room S301 Main Building
- Program Meeting: Monday, Apr 13, 7:15 p.m.: GCC Room S301 Main Building: Go Kits
- Club Breakfast: Saturday, Apr 18, 8:00 a.m.: Denny's, Greenfield
- Club Breakfast: Saturday, May 16, 8:00 a.m.: Denny's, Greenfield
- VE License Test: Monday, May 26, 7:00 p.m.: Northfield Unitarian Church
- E-Board Meeting: Saturday, May 23: At the picnic
- Club picnic and May meeting: Saturday, May 23:Location TBA

# April 2015

## Calendar

**APRIL PROGRAM MEETING – EMERGENCY GO KITS: MONDAY APRIL 13 AT 7:15 PM.**
Jeanne Dodge KC1DCQ and Bruce Fuller KB1TLX will talk about materials that you should have on hand and ready to "GO" in an emergency. In an emergency when helping with communications, you might be having to leave your home or shelter in place.

## Secretary's Report

**E-BOARD AND PROGRAM MEETING SATURDAY, FEBRUARY 14, 2015 AT GCC, CHRIS MYERS KB1NEK**

*E board meeting Notes:*

1. Ron reported on the hamfest last week in Chicopee. He said we sold 3 items of club equipment listed for about half a year, bringing about $258.

2. Chris reported that he had bought the new auto-tuner to be used with the Icom 706. Tuner works well. Then radio went on the blink when trying it on 2m. Did a complete reset of system memory. Had to re-set all settings. Then after a Sunday net, mike stopped working. PTT switch was at fault. So he ordered another mike. He would like to be reimbursed $76. Could not find mike with DTMF buttons. Belle moved to reimburse Chris. Motion seconded and approved.

3. Bob D reported on repeater status. In the fall, we found the receiver from Leyden repeater station had reduced sensitivity. Bob brought it home. Obtained a manual with complete schematics. He figured out antenna relay was not working properly. So following a vote taken at last e-board meeting, he found a way to short circuit the relay, since it has to be in closed position for receiving, and this unit will not be used for transmitting. It now seems to work properly. We are waiting to try it again in one of our repeater stations.

   Al said the plan is to put this receiver and associated transmitter and controller up in the small building owned by Greenfield Water supply, on Rocky Mount. Because the tower was knocked down last summer, the town of Greenfield insurance paid for two brand new antennas on a new tower. One antenna is for 2m, the other for 440. Question about whether we can keep the second 2m repeater on Rocky Mount on the air all the time. Al said probably not because we don't know if controller has the same kind of digital voice delay as the controller in Leyden. The two controllers are made by the same company, but are different models.

   We consider the 2m repeater in Greenfield would be usually off, but available as a back up if the Leyden repeater suffers a failure. The shed on Rocky Mount is easier to get to than the one on top of Frizzell Hill in Leyden. We would need to bring duplexers from storage to the site, and add another power supply.

   Al mentioned the 440 repeater we had running on Rocky Mount had terrible distortion on it when we tested it in the fall, so it has been shut off for several months. We need to get back up there once enough of the snow melts.

4. Keith reported that he had heard several hams talking over the air about Yaesu's offer of a brand new repeater to clubs willing to try it out - for $500. Basic DR-1X needs added board for voice announcement, otherwise it only sends ID in Morse code.

   Bob Dickerman voiced support for buying the unit. He said we can experiment using it for a year, and then if we don't like it we could sell it for at least the $500 we paid, but probably for more. The only problem we need to figure out is how to shut it off or turn it back on remotely, since the DR-1X may not allow remote controls. There is some confusion about this feature.
   Bob suggested we could put another scanner next to it to pick up a control signal which could at least turn off the power. All the programming options we are used to are done through DTMF signals, processed in the controllers. Al said we should soon check our control system on Frizzell Hill.

   Chris asked how Yaesu could sell a repeater that does not comply with law regarding remote control. Someone answered that it must have an Ethernet jack or phone jack to allow wired remote control. Our repeater site in Leyden once had a phone connection, but no longer.
   Keith said Yaesu is willing to sell two of the units. Howard said there is a potential benefactor who has suggested he might help pay for one of these.

   Al summarized message from Gerry Lempicki. Gerry reminded us that we now have controller that has weather reporting interface. He said early in the history of the club, there were several members who had the skill and equipment to assemble the units we have been using. He says the club may not have the people with the needed skills to build such a system with brand new equipment, but that it may well be time to change to match the talent available.

   Bob looks at it as a standalone unit for the 440 site, without a controller capable of storing announcements. Then after a year we can pull it out, use the older 440 equipment and treat the Yaesu as a self-contained spare system. It has a built in power supply and minimal necessary CW identification. It could be a backup for either our 2m or 440 system, since it is a dual band unit, and can easily be re-programmed.

   Someone asked if it can be used as a cross-band repeater. Chris said there is no mention of cross band operation in what he had read, but it is worth re-checking. Bob said he has only seen single band repeaters. This is the only one he has seen which is dual band. He says the DR-1X is low risk, because we might be able to sell it for maybe $900. Howard, said if we had three units, one could be a spare, and the other two running.

   Al cautioned against the wisdom of buying the newest version of any equipment. Chris mentioned there was a true prototype version, and this is supposed to be the first commercial version. Bob says it would be an educational experiment, and bring the club's equipment into the 21st. century. It has transmitter, receiver, controller, and AC power supply all in one box. It also can take 12 V DC directly.

   One question was what Yaesu expects in return for the low price. Bob said they want us to keep running it in "hybrid" mode, meaning having both analog FM and digital modes running. Al asked what kind of digital mode it is. Chris said it can send text and voice, but in peer to peer mode. Bob D. found a pair of repeaters in Connecticut near Hartford that use this equipment.

   Al mentioned that Scott Conti agrees with Gerry. He questions using proprietary digital voice mode. Bob S. asked how much power the DR-1X puts out. Al said 50 W, but that they recommend reducing the power for safety. Bob asked if that means less power than we have now. Bob D said our current 440 transmitter is set at around 30 W.

Al asked for someone to make a motion. Belle said she would make a motion for the club to order one unit, unless a benefactor offers us a gift to make it possible to buy a second. Bob Dickerman asked if the club treasury still has about $3,000. Howard said yes, it is close to it.
Al asked if the units come pre-set for frequency. Chris said the owner's manual shows how to change frequency and the access tone, and it looks fairly easy to do. Al said it would be fairly easy to use the repeater in an emergency, by bringing it to an EOC and using a quiet pair of frequencies. Chris asked if you can run the repeater, in an emergency, without heavy duplexers, using a separate antenna for transmit and receive. Bob D said yes, so long as one of the antennas is well above the other. There has to be significant vertical separation.
Bob D. wants to buy only one, because it is safer bet. Motion to recommend to full membership buying one unit.

5. Coming programs: April, Go Kits May, club picnic in Leyden at the school pavilion, for $75

6. Field Day Al wants someone to volunteer to act as the club organizer for it. There were no volunteers. He will bring it up again. Bob D reminded secretary to send request for a permit sometime in April.

7. Al said it is time to apply to renew the club's license.

8. Al mentioned one night in February when the 2m repeater really went sour. Could only pick up strong signals. Al talked to the engineer for WPVQ, who said that their monitor picked up an alarm of sorts one day, involving the temperature. Bob D said on March 11, he heard the signal go bad again. Other nights the sound is scratchy. So there may be a continuing problem with that repeater. Belle also mentioned a power outage about a week ago. However, Al reminded us that there is emergency power and propane heater at the site.

9. Bob Solosko wants someone else to take over publishing the Communicator. He also will be out of the country from 24 April for three weeks.

Thee-board meeting adjourned at 7:09

*General Membership meeting started at 7:14*

Chris summarized the discussion of the Yaesu offer to sell a DR-1X, digital and analog, 2 band repeater unit to clubs willing to keep it on the air for at least a year. He said the e-board recommended buying one, unless a donor stepped up and offered enough for us to buy two. And, we would have to ask Yaesu if it would be all right if we used the second unit as a backup, instead of keeping it on the air. We acknowledged that probably Yaesu really does want every unit on the air, since it is trying to sell a whole family of equipment that can use their new, proprietary, digital voice system, which they call C4FM.

Howard offered a motion to appropriate up to $1,200 to buy at least one Yaesu DR-1X repeater, with a sound board, and buy a second if a donor offers to help out. The motion was seconded. After some technical questions were asked, similar to the ones discussed in the e-board meeting, the motion passed.

Keith offered to call Yaesu right away to ask if we could buy a second unit to be used mostly as a backup.

Al mentioned that Bob Solosko will be away from the end of April, for several weeks, and cannot put out the May edition of the Communicator. Bob also wants to step down from the job. Al asked for someone to consider taking over as the editor.

Al reported on Field Day and future general meeting topics. He asked for someone to volunteer to coordinate the entire effort. Roy mentioned the idea of using a gamma match to use the flagpole on Rocky Mount as an antenna. He said he would work on it. The pole may be 30 feet high, from the top of the Poet's Seat Tower.

April meeting will be on the topic of go-kits. Jeanne and Belle will put together a presentation. Picnic 23rd of May at Leyden School.

Al made presentation on the organizing work for the Wired West System. Bob Solosko described the technology suggested by the system. Amusingly, he said he had asked one of the Wired West leaders just what kind of network architecture was being planned, and the guy said a decision has not yet been made.

## News, Activities & Articles

### UPDATE: VE SESSION IN NORTHFIELD, FEBRUARY 23 – AL WOODHULL N1AW

New callsigns from the February 23rd VE session. Greet them if you hear them on the air.

* KC1DIA - Adam
* KC1DIB - John
* KC1DID - Richard
* KC1DIE - Edileuza

License upgrades:

* Anne KC1CRS to Extra
* Aaron KC1CXX to General

### DIGITAL VOICE, CHRIS MYERS KB1NEK

At its meeting on March 9, the club voted to buy at least one of the new Yaesu DR-1X repeaters, at the low introductory price of only $500. It is expected that the eventual retail price will be about $1,700.

It is obvious to everyone that Yaesu has offered its new repeater to clubs at the low price in order to catch up to Icom, which introduced the D-Star system almost ten years ago. In the meantime, some amateur repeater operators have purchase repeaters adopted from commercial units, using variations on Digital Mobile Radio (DMR) or other protocols.

The first question to be asked is why bother with digital voice at all when currently each of the modes is unintelligible to users with radios without the proprietary circuitry necessary? In an emergency, or large public service event, the only way operators can participate who don't own proprietary equipment is for the net to operate using standard FM. For a long time to come, conventional FM will be the only way VHF or UHF repeaters will be accessible to any ham who comes by.

There has been a compelling logic for commercial users to adopt digital voice. The time or frequency multiple access features that can take advantage of a digital signal allow more signals in a given band

segment. Commercial users in most of the US have been squeezed for spectrum space for a long time, and willingly pay extra for a radio system that makes for more efficient use of it.

So why should amateurs adopt a technology that might make for better use of the spectrum but at the cost of impeding interoperability? It may be that in some congested areas of the country repeater frequencies are at a premium. A year ago the New England Spectrum Management group added new 2m frequency pairs at the expense of simplex space. Some of us objected, because we know there are allocated repeater frequencies that get very little use.

It may be that some hams just want to experiment with the new technology. Most of the new modes offer more than just voice transmission. They also offer integrated location programming (using APRS or something similar) and the ability to connect via the internet to distant repeaters. Some of the new protocols offer the ability to set up private nets requiring “pass words” for entry. A group in South Carolina that offers emergency communications for hospitals has such a closed network. But you have to ask if this really is amateur radio at all, and not just a raid on our spectrum by organizations that really should be using commercial licenses.

Some of Yaesu’ s new C4FM radios offer an option to take a low resolution photo and send it to others via a repeater.

Reviews I have read indicate that they more the signal is turned over to digital data, the poorer becomes the sound quality. Most reviews indicate that generally, conventional FM sounds better in most situations, and definitely is more readable in weak signal areas.

There are experimenters, interviewed on HamRadioNow, who are hard at work developing open source hardware and open source software to build radios that eventually might be able to communicate with the proprietary models. The Holy Grail of this search will be for one radio, built on open source methods that can communicate using more than just one of the modes. When that happens, probably more of us in Franklin County will want to give it a try.

In the meantime, if Yaesu accepts our application and sells us a DR-1X for $500, we will put it on the air as our 440 repeater, and it will be available for both conventional FM and C4FM users. The repeater can automatically switch modes depending on the input and on the repeaters settings.

## ECHOLINK FOR THE BEGINNER, PHILL GRANT N1YPS

Got a computer (with internet connection) and a microphone that plugs into it? Then you’ve got an Echolink User station that can connect with hams all over. No TNC or radio needed...just the software and that’s available from www.echolink.org. You must be a licensed ham. The Echolink group will insist you "register" with them via your callsign, plus they will ask for a photocopy of your ham license. Sounds crazy, but they explain why they need it. You create a password, and once you’ve been ’validated’ by them, you will get a node number (mine is 335224) and you’re set to go.

EchoLink® software allows licensed Amateur Radio stations to communicate with one another over the Internet, using streaming-audio technology. The program allows worldwide connections to be made between stations using RF or from computer to station, or computer to computer greatly enhancing Amateur Radio’s communications capabilities. There are more than 200,000 validated users worldwide — in 162 of the world’s 193 nations — with about 5,000 online at any given time.

EchoLink is a free computer-based Amateur Radio system that allows radio amateurs to communicate with other amateur radio operators using Voice over Internet Protocol (VoIP) technology for at least

part of the path between them. It was designed by Jonathan Taylor, a radio amateur with callsign K1RFD.

The above I copied from the website www.arrl-nh.org. There are six pages in all and I think the best paper to describe Echolink. Do not confuse this program with Winlink, APRSlink or even EchoStation. Echolink stands on its own and the suite comes in two modes of operation: Single-USER and SYSOP. Photo A shows the USER setup at my QTH. The SYSOP mode requires a radio and interface plus further setup requirements; not necessary for simple QSOs. If you have an Android tablet or smartphone, Echolink is downloadable as an app from various "app stores" for these devices.

So, how does it work? Very simple. Just click on a repeater callsign, wait for the "connected" prompt, listen for conversations already in progress, then press the PC space bar (your PTT button) and give your sign with a CQ. Since CQs on repeaters aren't that common, I just mention I'm an Echolink station. From that point on, a QSO flows pretty much as it would on your transceiver. You can click on a repeater callsign, a link callsign or a personal callsign; someone who may be running the program but not involved in a QSO. On your monitor, you will see your call on the list, and the other station data if you're involved in a QSO. There is an "EchoTest" feature you can run to adjust and checkout your mic and sound system. Headsets with a boom are really nice to have.

One tip, you should allow extra seconds after you transmit for the other guy to respond. A VERY IMPORTANT second tip: Click on the "Firewall/Router Test" under the 'Tools' menu. I had to make a few changes to both. Echolink.org will help you with that. I've had QSOs from Northern Ireland, Barbados and many in the states.

## FOX HUNT- JEANNE KC1DCQ

These are pictures from the Fox Hunt that I did with an Explorer/Venture Out Boy Scout troop, last month. They are all Ham's and we were teaching them Wilderness First Aid. I borrowed the club's "fox" so that we could include this as a beginning skill/experience.

There was great amusement that although the leaders of the troop and the other three instructors have all been Ham's for many years, none of them have ever done a fox hunt. So, we were greatly amused the one who had just gotten her license a month before was the one who brought the fox and explained what to do. One of the leaders got inspired and said that he was going to put together some of his many spare parts and make a fox so they could do more of this activity.

We were at the Loins Camp in Lynn, Mass. As you can see from the snow, we had more that weekend. Because of the weather, we only did one short time out. They decided to have my niece as a victim who was lost and injured. So they had to find her and assess what was wrong, etc. They had a great time and really look forward to doing this more. All agreed that it was something they would like to do more of and since they are Explorer Scouts, Hams, and we were teaching Wilderness First Aid-it was a good fit.

Participants included Brittany KB1PS, Jim KB1KQW, Wil KC1AOJ, Rick KB1LPW, Kathy KB1LPW and of course Jeanne KC1DCQ.

## SHOULD WE WEEP FOR AMATEUR RADIO? DAN ROMANCHIK, KB6NU

On an amateur radio mailing list that I subscribe to, one fellow wrote, "I weep for the state of amateur radio in the US, since this dispatch is apparently necessary…" He then pointed to an article on the ARRL website that reminded hams that while their local time may be switching to daylight time, Universal Coordinated Time did not change (http://www.arrl.org/news/view/change-local-clocks-this-weekend-but-not- utc).

The implication, of course, was that we have dumbed down ham radio so much that a reminder like this was necessary.

This thread went on and on, eventually garnering 17 different replies. Before it morphed into a discussion of whether or not DST is a good idea in the first place, the replies echoed the sentiment in the original e-mail:

“It’s become a push button, nanny state world, what do you expect, competence?”

“We are truly in a time of appliance operating, not only in ham radio, but in practically every aspect of our lives. :-(“

At first, I had the same reaction. I thought to myself, “How dumb are we getting in ham radio, if guys have to be reminded that UTC doesn’t change when we switch to daylight savings time?” After thinking about this for a while, though, I’ve completely change my mind on this.

I work with a lot of newcomers to amateur radio, and many of them just don’t know how UTC works. This is not their fault—-they just haven’t had the opportunity to deal with UTC. What these old timers didn’t realize is that the ARRL article is not directed at them, but at the newcomers to ham radio.

I’ll even go one step further. It’s easy for us old-timers to be dismissive of newcomers’ lack of knowledge, and then complain that amateur radio is getting dumber, but knee-jerk reactions don’t usually help anyone involved. A much better approach would be to roll up your sleeves and teach them something. The only way newcomers are going to get to be old timers like us is if we help them learn stuff like this.

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THE COMMUNICATOR is an informational publication for members of the Franklin County Amateur Radio Club. Officers: President: Al Woodhull, N1AW (n1aw@arrl.net ), Vice President: Ron Niswander, K8HSF (reniswander@gmail.com), Treasurer: Howard Field, N1LUP (howfield@comcast.net ), Secretary: Chris Myers, KB1NEK (camyers1@verizon.net ), Director: Belle Dyer, KB1NOG (bdyer58@mtdata.com), Director: Bruce Fuller KB1TLX, perkinsdowns@yahoo.com. 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.