

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



FIRST CLASS MAIL



# THE COMMUNICATOR THE COMMUNICATOR

**December 2012**

## Upcoming Events

- E-Board Meeting: Monday December 10, 7:00 p.m.: location TBA
- Club Breakfast: Saturday December 15, 8:00 a.m.: Denny's, Greenfield
- Holiday Potluck: Monday December 17, 6:00 p.m.: Greenfield High School cafeteria
- New Year's Net: Monday December 31, 11:50 PM: 146.985 MHz
- Sawmill River Race: Tuesday January 1, 9 a.m. for radio ops: Montague
- Club Breakfast: Saturday January 19, 8:00 a.m.: Denny's, Greenfield
- E-Board Meeting: Monday January 28, time TBA: Greenfield High School

## **December 2012**

### **Calendar**

#### **HOLIDAY POTLUCK MEETING: MONDAY DECEMBER 17, 6:00 PM**

The annual Holiday Potluck and Auction will be held in the Greenfield High School Cafeteria on December 19th at 6:00 PM. There will be food, an auction and good times. This will be a true potluck – bring what you like (and hopefully we'll have a variety of main dishes, desserts and drinks).

Don't forget ham radio/electronics items for the auction. The club's "commission" will be 20% of the selling price, or \$1, whichever is larger. Of course, you can donate items to the club for which the club gets all of the proceeds. The club may also auction off some of the larger items that have been recently donated. Any item that doesn't sell, either due to lack of demand or lack of time, will be returned to the owner/contributor (yes, you really do have to take it back!) All income from the auction goes to the club to support future club activities.

#### **FCARC NEW YEAR'S NET**

FCARC New Year's Net: On the air on the 146.985 KB1BSS repeater, starting at 11:50 p.m. on December 31st.

#### **THE SAWMILL RIVER RACE: TUESDAY JANUARY 1, 9 AM**

The Sawmill River Race in Montague will be held on Tuesday January 1 and the FCARC will again provide communications. Contact Al Woodhull, N1AW, to volunteer or for more information.

### **Secretary's Report**

#### **E-BOARD MEETING, MONDAY, NOVEMBER 19, 2012 – BOB DICKERMAN WA1QKT**

1. Rich Wheeler N1KXR, HCRA member and trustee of the venerable N1KXR/B Ten Meter Propagation Beacon, announced that he is selling \$10.00 raffle tickets for Elecraft KX3 radio - only 250 tickets will be sold, and the drawing will be March 1, 2013.
2. Holiday/Christmas party December 17th - no volunteer to coordinate and organize - we are considering "just showing up" without any organization.
3. Al N1AW is organizing emcomm for Sawmill River Race in Montague January 1.
4. Chris KB1NEK is organizing emcomm for Sleighbell Race in Greenfield.
5. There will be no January club meeting, only the E-board will meet on January 28 at GHS.
6. Next Technician License Class will not happen until early 2013.
7. November 26 VE Session will be conducted by N1AW, KB1NOG, KB1NEK, with perhaps K8HSF, AA1XU, and/or N1KXR. Al will be absent in February VE session.

8. KB1NEK will write FMC Hospital ARES station equipment proposal for placement of FT-8800 radio, probably on first floor, to send to Roger Wrigley and Cheryl Volpe.

9. Deerfield EOC ARES amateur radio station installation in progress. Carolyn KB1WTQ is acquiring equipment including a FT-8900 transceiver, 300' of feedline cable and conduit; she had to get 3 bids.

10. N1KXR mentioned that, due to expanding requirements of the Air Force PAVE/PAWS missile defense and tracking radar installation on Cape Cod, amateur 440 MHz repeater power restrictions have been steadily growing east of Worcester, and power-restriction areas appear to be creeping westerly, so that now Western Massachusetts 440 MHz repeater installations may be at risk.

11. KB1NOX Rich mentioned that his friend Greg Jarvis KA1KNW, at Marcus Communications, in Manchester, CT might be able to tune our 440 duplexer if we need it.

12. N1KXR mentioned that he has a working 440 repeater for sale, \$500.00 complete, that might serve as a backup for ours.

### **PROGRAM MEETING, MONDAY, NOVEMBER 19, 2012 – AL BOB DICKERMAN WA1QKT**

After we enjoyed coffee and snacks provided by Belle KB1NOG, Cindy W1CAD, and Bob WA1QKT, the meeting was called to order at 7:15 PM by Al N1AW.

Al N1AW and Carter WA1TVS reported that Walt W1ZPB is still in the ICU at FMC after an episode of heart failure; he is still not speaking yet.

Al reported that the 440 repeater is back on the air again and working fairly well. The duplexer has been removed. Al mounted a temporary transmitting-only antenna mounted near the bottom of the tower. The original antenna at the top of the tower is being used for receiving only. We are assuming that the range of the repeater is somewhat less than normal due to the low height and low gain of the temporary transmitting antenna. Bob WA1QKT is testing the duplexer, which is suspected of causing desense problems, at home.

Rich Wheeler N1KXR, HCRA member and trustee of the venerable N1KXR/B Ten Meter Propagation Beacon, announced that he is selling \$10.00 raffle tickets for Elecraft KX3 radio - only 250 tickets will be sold, and the drawing will be March 1, 2013.

At this time, we are still planning to have a Holiday/Christmas party December 17th, even though no one has offered to coordinate and organize it - we are considering just showing up without any organization whatsoever and having a REAL "pot luck".

There will be no January club meeting; only the E-board will meet on January 28 at GHS.

The next Technician License Class will not happen until early 2013.

Al introduced our guest speaker, Fred Hopengarten, K1VR. Fred is a renowned telecommunications lawyer who specializes in antenna and tower zoning regulations. He literally "wrote the book" on the topic - he is author of "Antenna Zoning for the Radio Amateur", published by the ARRL. He has founded several communications-related companies. He is not an "armchair tower man" - he occasionally climbs towers to work on antenna systems, as the photo on the cover of his book illustrates.

Fred gave a brief overview of the topic. He discussed building permits, and mentioned zoning variances, in the context of antenna installations.

One of his first points was that, if your antenna will be roof-mounted, and less than 12 feet in height above the building, you may erect it without even so much as a building permit. This is true in Massachusetts, as well as in most other states across the country. The rule was ostensibly written to accommodate the widespread use of rooftop TV antennas; however, the language of the rule does not specify any particular sort of antenna, so amateur radio antennas are included.

Next, he said that, if your plans do not fall under the above-mentioned situation, it is best not to just erect your tower and antenna without a permit, and "ask for forgiveness" later. For one thing, your installation will not be able to be "grandfathered" if you need to change your installation in the future; this may become an issue if you have a new neighbor who doesn't like your tower. Furthermore, you may be forced to remove your installation at a later date, or face large civil or even (very rarely, but not unheard of) criminal penalties, if there are complaints.

Fred said that amateurs derive the right to erect towers and antennas based on a federal rule, Part 97, Section 15(b), which states:

Except as otherwise provided herein, a station antenna structure may be erected at heights and dimensions sufficient to accommodate amateur service communications. (State and local regulation of a station antenna structure must not preclude amateur service communications. Rather, it must reasonably accommodate such communications and must constitute the minimum practicable regulation to accomplish the state or local authority's legitimate purpose. See PRB-1, 101 FCC 2d 952 (1985) for details.)

This federal rule supersedes local zoning ordinances, to some extent.

He advised that, where zoning ordinances do not specifically prohibit an antenna installation such as you have planned, it is best to apply for a building permit (or a special permit if needed), and use a "fat filing", which means supplying all the information anyone might ask for, and answering every conceivable question ahead of time.

Furthermore, in the case where a (presumably illegal) zoning ordinance does prohibit such an installation, it is best not to file for a zoning variance, since, firstly, you may not be able to meet the criteria for a variance, and secondly, such a filing would implicitly acknowledge the legitimacy of the original ordinance. It is better, as a rule of thumb, to just challenge the legality of the ordinance.

Fred represented KB1IPR Rich in the case of his antenna tower in Whately. The town first granted Rich a building permit, but when neighbors complained, the Planning Board petitioned the Zoning Board of Appeals to revoke the permit. However, the permit was finally granted when the authorities realized that the constraining bylaw was illegal. Fred said this is a common situation.

Carter WA1TVS mentioned that there is now a bylaw in Whately prohibiting an amateur radio antenna structure with any dimension greater than 5 feet. Fred said that this rule is also illegal, and that he would love to represent Carter in a battle against it.

There was a lively question and answer session after the talk, with many startling revelations.

In my humble opinion, if you are thinking of putting up an appreciable antenna tower, you should probably buy Fred's book, and if you need legal representation in such matters, you should probably give him a call. Fred lives in Lincoln, Massachusetts and has a website.

We thank Fred for his highly informative and entertaining presentation.

17 people attended the meeting.

## **News, Activities & Articles**

### **WALT CONDON W1ZPB SK**

Walt Congdon, W1ZPB, passed away early in the morning of December 3rd. Walt will be much missed by many members of the Franklin County Amateur Radio Club. He was a past-president of the club. He was the master teacher who helped many current members learn what they needed to pass their license exams. He was the Field Day C.W. operator who would keep our C.W. station on the air for 24 hours. He was free with advice and help for anyone interested in learning how to power their lives and their radios with solar or wind energy.

Walt's page on QRZ.com, updated in 2011, provides a brief autobiography:

"First licensed 1953. US Army Signal Corps High Speed CW Radio Operator posted to Eniwetok Marshall Islands at KX6BP. Returned to mainland 1956 to teach physics & chemistry at Northfield Mount Hermon School. Joined NTS & have continued active on NTS CW traffic nets. Shack entirely solar powered as is home. Retired 14 years; XYL sez 'rewired'! Do lot of teaching about conservation & efficiency; and about Renewable Energy: solar PV, wind power, bio-mass, micro-hydro. Some rag-chewing, lots of traffic nets, some DX-ing. Use Ten-Tec Argonaut V. Lots of wire antenna arrays."

A memorial service is tentatively planned for St. James Church in Greenfield at 1:00 p.m. on Dec. 29th.

### **VE SESSION, NOVEMBER 26, AI N1AW**

The Monday after Thanksgiving we had four candidates at the VE Session in Northfield. Four candidates who all actually let us know in advance they were coming. The result was one upgrade and three new hams:

David Calef from Spofford NH, KB1YQP, upgraded to General Class.

Frank Smith from Jaffrey NH passed two tests to earn a new General Class license. His new call is KB1YYY.

Alexander Rogers of Northfield and James Karan of Athol both earned new Technician licenses. Alexander Rogers' new call is KB1YZA and James Karan's new call is KB1YYZ.

VE's who participated included Belle, KB1NOG, Chris, KB1NEK, Rich, N1KXR, Ron K8HSF, and Al, N1AW.

The next FCARC VE session in Northfield will be February 25, 2013.

Congratulations to all. We'll be looking for you on the air and at FCARC events.

### **PROGRESS ON 440 REPEATER – AI N1AW**



On November 12<sup>th</sup>, WA1QKT, N1EWK and N1AW met at the 440 repeater site. The problems we have been dealing with for almost a year seem to be due to malfunction of the duplexer, which when working properly should allow the repeater transmitter and receiver to use the same antenna. Several weeks earlier we verified this theory by



disconnecting the duplexer, using the existing antenna at the top of the tower for receiving only, and adding a temporary low-gain antenna inside the Water Department building for transmitting only. This solved the problem of the repeater transmitter desensing the receiver.

On this visit they mounted the temporary antenna outside. The little ground plane antenna is now outside and higher than the roof of the building. This is not a permanent or totally satisfactory solution, but it is a step in the right direction

In addition to the antenna work the crew also removed the duplexer from the repeater cabinet. This was not an easy job at all due to difficult access to the mounting hardware, and three pairs of hands were needed. We are now ready to try to analyze and realign the duplexer.

On November 28<sup>th</sup>, WA1QKT and N1AW replaced the duplexer along with a repaired cable which may have been the cause of the problems we have been trying to solve for the last year. The repeater now seems to be working normally.

WA1QKT and N1AW would appreciate anyone with 70 cm capability testing the repeater when possible. N1AW can hear it and access it well from Leyden and he intends to monitor it and respond to anyone calling on it as much as possible when he is in his radio room at home.

We would appreciate reports from everyone, but especially from anyone who has used this repeater in the past and who thus can compare its range and other characteristics with its previous performance.

In the interest of just dealing with one thing at a time the 10 meter link is still disabled. We don't believe it caused our problems (although when 10 meters was very active last Fall a lot of 10 meter noise was being repeated at times). We will re-enable it soon if all goes well. I would also be interested in knowing whether anyone uses the 10 meter link and finds it useful.

## **BUILDING AN END-FED, HALF-WAVE ANTENNA – DAN ROMANCHIK KB6NU**

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I've always been interested in end-fed, half-wave antennas before, but until this recently, I'd never built one. One of the reasons for this is that most designs are for QRP antennas and not made to handle more than 5 – 10 W of power.

A couple of months ago, though, I ran across a design rated at 100 W ([http://earchi.org/proj\\_homebrew.html](http://earchi.org/proj_homebrew.html)). The design seemed relatively simple to build, requiring only a single toroid and a capacitor made with a short length of RG-174 coax. Well, it just so happens that I bought 100-ft. of RG-174 at Dayton this year, and I found the toroid cores online from the "Toroid King" for a very reasonable price, so I decided it was high time to build one.

All told, the parts cost about \$10, the biggest part of that being a 4-in. x 4-in. x 2-in. plastic junction box (Carlson E989NNJ-CAR) I got from Lowe's for \$6.41. Compare that with the \$60 that LNR wants for their end-fed antenna.

I put up the antenna about three weeks ago, on a beautiful fall Sunday, running 34 feet of wire up a trellis attached to a small deck in my backyard, then out to a tree near the back

of my lot. With more than a little anticipation, I put the antenna analyzer on it, only to be somewhat disappointed with the readings. The SWR was 2.6:1 at 14.000 MHz, dropping to about 1.5:1 at 14.900 MHz.

Since the internal tuner on my IC-746PRO is supposed to be good to 3:1, I did use it and made a couple of contacts. A guy in MA even gave me a 599 signal report. So, while I was a little uncomfortable with an SWR so close to the limit of my tuner, it did seem to radiate pretty well.

I e-mailed the guy who published the design and asked why he thought the resonant frequency was so high, and he said that all I had to do was add a couple feet of wire to the antenna. I also did some more reading about end-feds and several websites suggested that adding a counterpoise might be a good idea, too.

A week later, I finally got back to playing with the antenna. I added 24-in. of wire to it, and it did indeed bring down the SWR of the antenna to below 2:1 in the CW portion of 20m. I'm happier with this. I made a couple of contacts that day, too, with both stations giving me good reports.

I still do plan to try a counterpoise. Not so much to improve the SWR, but to see if it makes the antenna a little more efficient.

Overall, this has been a fun project. I learned something about end-fed, half-wave antennas and saved a bunch of money by rolling my own. Isn't that what ham radio is all about?

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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](mailto:w1srb@arrl.net).