

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

FIRST CLASS MAIL



THE COMMUNICATOR THE COMMUNICATOR

December 2015

Upcoming Events

- Pixie Project Part 3: Saturday December 7th, 10 a.m. to noon, GCC Hammond Studio, East Building. Workshop session, building the kits.
- Club Breakfast: Saturday Dec 19, 8:00 a.m.: Denny's, Greenfield
- E-Board Meeting: Monday Dec 19, After Breakfast, Denny's
- Holiday Potluck: Monday Dec 14, 6:00 p.m. : Trinity Church, Shelburne Falls
- New Year's net: Wednesday Dec 31, 11:50 pm. : 146.985 MHz
- Sawmill River Race: Thursday, Jan 1, 9:00 a.m. for radio ops: Montague Center
- E-Board Meeting: Monday, Jan 11, 6:00 p.m.
- Program Meeting: Monday, Jan 11, 7:15 p.m.
- Club Breakfast: Saturday, Jan 16, 8:00 a.m.: Denny's, Greenfield

December 2014

Calendar

FCARC Holiday Party:

In past years we have had a holiday potluck party in the Greenfield High School cafeteria instead of a regular December meeting. In the past we were never charged for use of GHS, but things have changed, and it has become rather expensive this year. This year we will have our party downstairs at the Trinity Church, 15 Severance St. in Shelburne Falls. Several members suggested that the third Monday of December, the 21st, is too close to Christmas this year, so we are scheduling the event for December 14th. Thanks to Howard N1LUP for arranging this for us.

There is another event scheduled upstairs in the church, we will have to enter through a door in the rear of the church. There is an elevator for anyone who would prefer not to use the stairs. The event is a potluck, if you would like a suggestion as to what to bring please contact Al Woodhull N1AW at 773-3522. But we generally seem to have events like this work out well without trying very hard to coordinate dishes

This will be a true potluck - bring what you like, a few people may be asked to make sure that important dishes are provided.

Secretary's Report

E-BOARD AND PROGRAM MEETINGS, MONDAY, NOVEMBER 16, 2015 – BOB DICKERMAN WA1QKT

E-Board Meeting Monday, November 16, 2015 at 6:00 PM, at GCC

1. FCARC IRS form 990 and MA Annual Report were submitted by Bob WA1QKT and accepted by the authorities.
2. Deadline for orders of FCARC shirts and hats will be Dec. 1, Anne KC1CRS is handling this.
3. Meeting topics:
 - 3.1. Tonight, November 16: "Building the Pixie, a Tiny Transceiver".
 - 3.2. SOTA talk a possibility for Jan.
 - 3.3. A talk on computer simulation of antennas a possibility
4. Bob WA1QKT provided contact information (originally from Rich KB1NOX) on 440 duplexer tuning services.
5. Al W1GH has donated a TS440 and other equipment to club.
6. Fox Hunt after breakfast Nov. 14 was a success, a good time was had by all. Al N1AW was the "fox". Hunters included two teams from "out east" whose members are acquaintances of Jeanne KC1DCQ.
7. Holiday party plans and location still up in the air. Al N1AW and Howard N1LUP may get more info on venue costs.
8. Upcoming Public Service Events

- 8.1. New Year's Day event Annual Sawmill River 10K run - some are peeved by requirement that each radio operator must sign a disclaimer relieving organizers from any responsibility for any damages incurred. AI N1AW is inclined to support event anyway, and is looking for someone to organize radio ops at the event.
9. Next VE session (license exams) November 23, 2015.
10. Coming events and contests:
 - 10.1. HCRA & MTARA Christmas party Dec. 7
 - 10.2. ARRL SS Phone Nov. 21-23
 - 10.3. ARRL 160 m Dec. 4-6
 - 10.4. ARRL 10 m Dec. 12-13

Respectfully Submitted,

Bob WA1QKT Clerk

Secretary's Report for Monday November 16, 2015 FCARC Meeting, at GCC

We enjoyed blueberry muffins baked by Belle KB1NOG. The meeting was brought to order at 7:15 PM by AI N1AW.

FCARC shirt, sweatshirt and hat orders are being collected by Anne KC1CRS. The deadline for orders is Dec. 1.

The annual holiday party may be at GHS, but the date and venue are not yet certain. AI N1AW and Howard N1LUP will be investigating venues and costs.

The main topic of the meeting was "Building the Pixie, a Tiny Transceiver", presented by Phill N1YPS. Pixie is a very low-cost (about \$8.00) HF CW (Morse code) transceiver kit that works! Phill presented an overview, history, and theory of this simple radio, which is about the size of a matchbox, and has a about three dozen parts. The radio seems to have evolved over time from several older designs. The 80 m version uses a television colorburst crystal whose frequency falls in the Technician CW band, so that any licensed ham can operate the rig. The radio uses only two transistors. One transistor is used as an oscillator, which runs continuously. The other transistor is used for a power amplifier on transmit, and a mixer on receive. The power amplifier has a low-pass filter in its output to suppress harmonics. A buzzer is used to provide "sidetone" during transmit - but is not shown on the schematic! A single integrated circuit audio amplifier is used to drive a set of headphones or earbuds during reception. The receiver has a pot for Receive Incremental Tuning (RIT).

Phill also played a great instructional video that he created to illustrate how to solder. He illustrated and discussed a variety of soldering equipment, solder types, cleaning materials, and especially, soldering and unsoldering techniques.

This soldering instruction will prove very useful in the upcoming Pixie build session to be held on Nov. 21, and in the debug session to be held Dec. 5, both at GCC East Building. About 10 kits were purchased for the build session so that anyone interested may just show up, build a kit, and take it home for their own. Placemats to protect tables, and soldering irons, etc., will be provided at the build session. Participants must provide a key (or just key by touching two wires together), stereo earbuds or earphones, and a battery.

We thank Phill for a great presentation, and for conducting the upcoming series of Pixie build and debug sessions.

More than a dozen people attended the meeting.

Respectfully submitted,

Bob Dickerman WA1QKT
Clerk

News, Activities & Articles

November 23rd VE Session

All candidates who appeared for the November 23rd license exam session in Northfield were successful. Peter Landry of Lunenburg, recently licensed as KC1EPV, passed the Extra test; Adam Holloway of Warwick, KC1EJI, licensed here in August, advanced to General; Ellen Anderson of Petersham and Andrew Marquis of Shutesbury will be new Technicians. Because of the Thanksgiving holiday it will take longer than usual to learn call signs for Ellen and Andrew.

VEs were Chris KB1NEK, Belle KB1NOG, Ron K8HSF, and Al N1AW. Our pool of Volunteer Examiners' is rather small. It's easy to qualify. Contact Al if you are interested.

FCARC Fox Hunt, Saturday November 14, 2015

"The fox for November 2015 FCARC Fox Hunt hid out at the south end of the Leyden Wildlife Management Area, just over the town line from Greenfield.



The event started at 10 a.m., the first hunter found the fox-box at 11:19 and all other hunters had found it by 12:30. Eight FCARC members and five visitors from the North Shore Radio Association invited by Jeanne KC1DCQ participated."

Our fox AI N1AW) didn't see much but the final wandering around close in. Some hunters got confused because Oak Hill Rd is parallel to the much better known Country Club Rd, which turns into Eden Trail Branch at the Greenfield-Bernardston town line. So from a distance the bearing toward the foxbox probably would have been indistinguishable from a direction pointing up Country Club Rd.



Sawmill River Race in Montague, New Year's Day

For many years we have provided communications for this 10K road race which begins and ends in the center of Montague. A road race in winter can be tricky for runners as well as volunteers; in the past we have had to deal with icy road conditions that made it difficult for both runners and volunteers. It can be a challenge, but we can also be helpful and challenges help prepare us for emergencies. The Montague Recreation Department really depends upon us for this one.

Joe Henefield KB1WVO has volunteered to coordinate volunteers for this. There will be signup lists available at the holiday party on December 14th as well as the breakfast on December 19th. You also can reach Joe by phone at [413-727-8240](tel:413-727-8240) (home) or [617-721-2750](tel:617-721-2750) (cell).

Greenfield Winter Carnival Sleighbell Race

The first weekend in February is still two months off, but we already have a volunteer to coordinate our assistance with this event, Richard KB1NOX. This is another one we do every year where our help is really appreciated. More information will be come out in the January Communicator.

Upcoming Meetings

Lad Nagurney WA3EEC has volunteered to talk to us at our February 8th meeting (note website date is incorrect). He is interested in software defined radios

Antenna Length Problems

Contributed by Robert Bessette W1DKY (editing assistance from AI N1AW)

The contrast with what we hams can do today when compared with what we could do some 75 years ago is surprisingly great. Enormous developments have taken what was probably more of an art than a science to an unimaginable position today.

Let's take a look at something that made DX easier to work on CW, notwithstanding the crudity of ham radio at that time.

Most of our stations consisted of a single tube transmitter along with a two tube receiver. Believe it or not, when the sun looked upon us with favor, we worked the world, Vks (Australia) were located about 6500 nautical miles away from our stations! Naturally, to do this, we tried to make sure that our antennas were cut to the proper length so as to be resonant at our operating frequencies. (Almost always the 40 meter band at its low end.)

According to the ARRL Handbook, the formula for determining the proper length of a half wave antenna is 468 divided by the frequency in use in the megahertz. This yields the length in feet. For our example let's use a frequency of 7010 KHz. This means 7.010 in megahertz and solving the problem yields a length of 66.76 feet.

While the formula is basically correct, it presumes that the antenna is hung out in space, free of any influences that might exist, such as telephone and power lines, etc. It is safe to say that any antenna just installed probably needs a little further treatment or "tweaking" to end up on the target frequency.

But from a practical viewpoint, does it really? (More on this subject at the end of this article). So, how did we determine what the proper length should be?

We connected a simple noise diode circuit between our antenna and our receiver. While, by today's standards, this was a pretty crude method, by watching "S" meter readings we were able to determine the maximum noise reading. At that point we knew we were tuned to the antenna's natural frequency. Then we calculated what the correct frequency per foot was,

and from this information we calculated what the true length should be.

Crude? Yep, but it worked well enough for us to work the world. Now, as hinted before, the question arises about whether or not this antenna work was really necessary? Theoretically, yes; practically, maybe not. The reason for the doubt comes from the research work of Weber and Fechner in the late 1800s. Their findings tell us that the response of the human ear is logarithmic, not linear. So in order for an increase in power to be practically sensed it must be at least doubled. So, squeezing a small number of extra watts out of your equipment may actually turn out to be an exercise in futility.

Of course, determining antenna length is simplified by using a modern antenna analyzer.

Edited by ASW 11/30/2015

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 (cmyers1@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: Jeanne A. Dodge, KC1DCQ (j.anndodge@gmail.com).