

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



FIRST CLASS MAIL



THE COMMUNICATOR

THE COMMUNICATOR

February 2015

Upcoming Events

- Sleigh Bell Race: Saturday Feb 7, 9:00 a.m. for radio ops.: Greenfield
- E-Board Meeting: Monday, Feb 9, 6:00 p.m.: GCC Room S301 Main Building
- Program Meeting: Monday, Feb 9, 7:15 p.m.: Dennis Markell, maritime radio history, GCC Room S301 Main Building
- Club Breakfast: Saturday, Feb 14, 8:00 a.m.: Denny's, Greenfield
- VE License Tests: Monday Feb 23, 7:00 p.m.: Northfield Unitarian Church
- Club Breakfast: Saturday, Mar 14, 8:00 a.m.: Denny's, Greenfield
- MTARA Hamfest: Saturday Mar 7, 8:30 a.m.: Chicopee Moose Lodge
- E-Board Meeting: Monday, Mar 16, 6:00 p.m.: GCC Room S301 Main Building
- Program Meeting: Monday, Mar 16, 7:15 p.m.: GCC Room S301 Main Building

February 2015

Calendar

SLEIGH BELL ROAD RACE, SATURDAY FEBRUARY 7

For many years, the FCARC has provided communications support for the Sleigh bell Road Race, part of the Greenfield Winter Carnival. This year the race has a new name, Sven's Reindeer Run, but we will once again help. To volunteer or for more information contact Rich Stewart, KB1NOX, stwricha@aol.com.

The race starts at 10 a.m. and pre-registration for the race opens at 8:15 a.m. We expect radio volunteers will need to check in at 9 a.m. With a new name the race route may have changed.

FEBRUARY MEETINGS

Note because of President's Day in February, the e-board and program meetings that would normally take place on the third Monday of the month are scheduled on February 9, the second Monday.

The February FCARC program meeting will feature a talk by Dennis Markell N1IMW on maritime ops history with concentration on the Chatham MA RCA maritime ship to shore station WCC.

VE LICENSE TESTS

FCARC will hold VE License Tests on Monday Feb 23 at 7:00 p.m. at the Northfield Unitarian Church. Contact Al Woodhull N1AW for more information.

MTARA HAMFEST AND FLEA MARKET, SATURDAY MARCH 7, 8:30 A.M., CHICOPEE

The Mt Tom ARA Hamfest and Flea Market will take place on Saturday March 2nd at the Moose Family Center/Chicopee Falls Moose Lodge 1849, 244 Fuller Road, Chicopee, MA. More information at <http://mtara.org/wp-content/uploads/2015/01/Flyer15.pdf>.

MTARA have invited FCARC and other local clubs to have tables, and we will do so. We plan to sell some surplus club equipment and club members with things they would like to sell can put them on our table.

We need volunteers to help out at the FCARC table and we will try to sell items on behalf of members who can't make it there for a small commission; we also are willing to accept and try to sell items donated to the club for possible sale with the provision that if an item doesn't sell and the club has no use for the item the donor will take it back. Contact Al Woodhull N1AW to volunteer.

Secretary's Report

E-BOARD MEETING SATURDAY, JANUARY 17, 2014 AT 10:00 AM, AT GCC EAST BUILDING

The meeting had been postponed due to foul weather. Jeanne Dodge graciously offered use of a meeting space outside her office at GCC East Building; the meeting was held immediately following our monthly Denny's breakfast.

1. Board members Al N1AW, Ron K8HSF, and Belle KB1NOG administered Technician license test to Jeanne Dodge concurrently with E-board meeting - she passed with flying colors!
2. Bob WA1QKT asked whether it might be a good idea to hold club meetings on weekends instead of weeknights, to make it easier for working people and students to attend. This question will appear in newsletter, and a survey may be taken.
3. Meeting topics:
 - 3.1. Feb. 9: Dennis Markell N1IMW will speak on maritime communications and Marconi Cape Cod station WCC.
 - 3.2. Mar. 16: Al N1AW and Bob W1SRB will speak on Wired West and Fiber Optic Internet buildout in our area.
 - 3.3. Apr. 13: Bruce KB1TLX, Jeanne KC1DCQ, Belle KB1NOG will present a talk on "What Should a Go-Kit Consist Of?" Will ask Chris KB1NEK, Chet N1XPT, Tim Van Kleefe, and Mary KB1ME if want to help.
 - 3.4. May 23: Bob WA1QKT will contact Cady Coleman and ask if she would like to attend picnic meeting, since is on weekend.
 - 3.5. June 15: Annual Election, Field Day prep.
 - 3.6. Other Ideas: Ron K8HSF suggested session on antenna modeling on the computer; Bob W1SRB tentatively offered to present this in the fall.
4. 2 m repeater status: Bob WA1QKT found the problem with 2 m repeater Mitrek receiver - was faulty transmit/receive relay with high resistance relay contacts. Presume contacts oxidized after many years with no actuation; manually energized relay to clean contacts, but contact resistance still somewhat high and variable. May need to remove relay and connect directly to receiver or otherwise improve contact resistance for reliable operation.
5. 440 MHz repeater status: The 440 repeater tower is up, but repeater has distorted audio when transmitting, cause may be faulty receiver. Al N1AW will give radio to Bob WA1QKT to look at.
6. Ron K8HSF reported on ARRL New England Division Meeting in Springfield, led by Tom Frenaye, K1KI, and Mike Raisbeck, K1TWF
 - 6.1. Hams population is generally increasing in New England, but Western Mass. has decreased.
 - 6.2. ARRL is considering holding Boxboro Convention this year, and yearly (vs. traditional every other year)
 - 6.3. Much discussion of digital voice modes; adoption of D-STAR (Digital Smart Technologies for Amateur Radio) seems to have plateaued, other standards may supplant this as dominant digital voice
 - 6.4. Some discussion of repeater frequency coordination; ARRL stance is that they do not want to get involved, will leave it to Northeast Spectrum Management Council (NESMC, covers ME, NH, MA, & RI) and mish-mash of others in VT & CT to decide who uses what freq. pairs for which repeater. These groups do not typically coordinate. Al N1AW (who is member of NESMC) was not inclined

to approve NESMC's last proposal for freq. pair changes, because cut into 2 m simplex frequencies. Bruce KB1TLX suggested having many members join NESMC so can vote down unsatisfactory proposals.

7. Jeanne Dodge suggested that GCC engineering students might be interested in club activities, will contact.

News, Activities & Articles

CONGRATULATIONS TO JEANNE DODGE, KC1DCQ

Jeanne Dodge took her Tech exam from our VE team during our rescheduled E-board meeting after the club breakfast on January 17. Her new call is KC1DCQ. Look for her on the air soon.

BOSTON MARATHON NEEDS HAM VOLUNTEERS

From AB1RL (VIA Reddit.Com/r/amateurradio and Hampden County RA website)

For years, the Boston Marathon has relied on a big group of ham volunteers to provide communications support for the race. For 2015, they've even put together a Communications Committee to review event plans and make sure we're as useful as possible to the race. I'm one of seven hams on that committee.

We need almost 300 volunteers to keep all the communications running smoothly. If you can make it, I hope you'll sign up to join us. I've worked at the Marathon for a few years now. You really get put to work, and the energy of the race and the community around it makes it really rewarding.

Race day is April 20, and there are assignments available all along the course. The Boston Athletic Association has more information about volunteering on their site. That's also where you sign up to volunteer. The registration deadline is February 10, so don't put it off. If you have any questions, feel free to send me a message. Thanks, and I hope I'll hear you there!

NEW GENERAL CLASS QUESTION POOL

The question pools from which Amateur Radio license exams are generated are revised every four years. On July 1st 2015 a new set of questions for the General Class exam will start to be used. If you are currently studying for your General license you may want to consider taking the test before then. If you won't be ready to take the General test before July you should be aware that there will be changes. Also, the study guide you now have will be out of date - not enough that it won't be useful, but new editions should be expected from ARRL and other organizations that publish these guides.

The question pools are available to the public. The new General Class Question Pool was released on December 15, 2014, and can be found at the website of the National Conference of Volunteer Examiner Coordinators: <http://ncvec.org/>. There is a Yahoo Ham Radio Instructor's Group at https://groups.yahoo.com/neo/groups/ham_instructor/info.

Recently Dan Romanchik, KB6NU, publisher of the No-Nonsense License Study Guides (and whose columns we frequently print here) offered an analysis of the changes in the 2015 version of the General Question Pool:

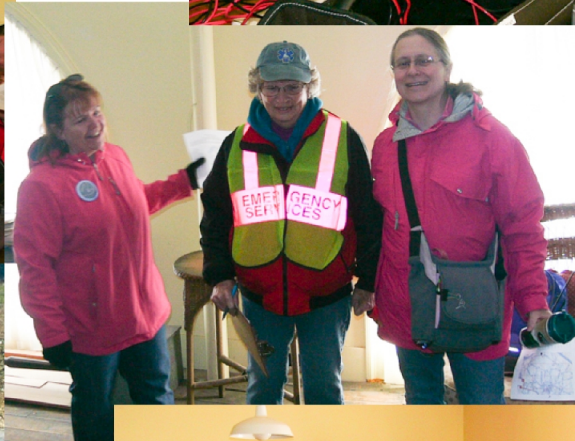
Here's the summary:

- Removed questions: 37
- New questions: 44
- Updated questions: 52
- Previous Total questions: 456
- Total questions: 464

Romanchik concludes: "imho, this is quite a substantial change, and if I were studying for the test, I would purchase a new study guide. And, yes, it is true that the question pool is freely available online, but I would say that most people would learn more and learn faster by using a study guide that attempts to explain the questions at least a little bit. That's what my study guides try to do."

SAW MILL RIVER RACE

FCARC again provided communication support and helped direct runners for the the Saw Mill River race on January 1st in Montague. Here are some photos of the event taken by Al Woodhull N1AW.

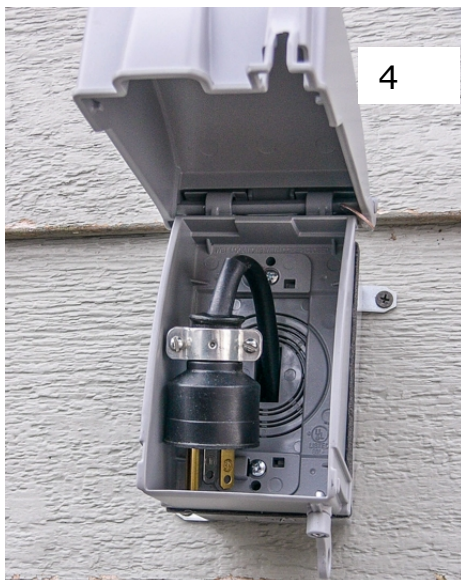
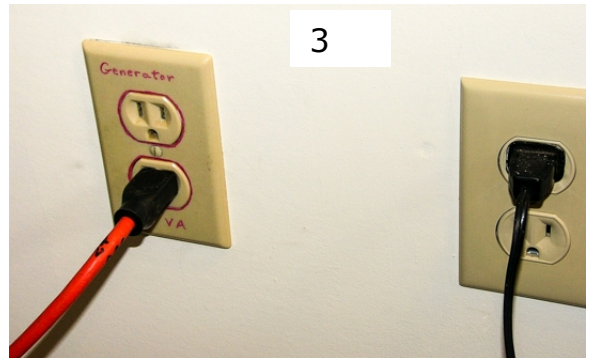
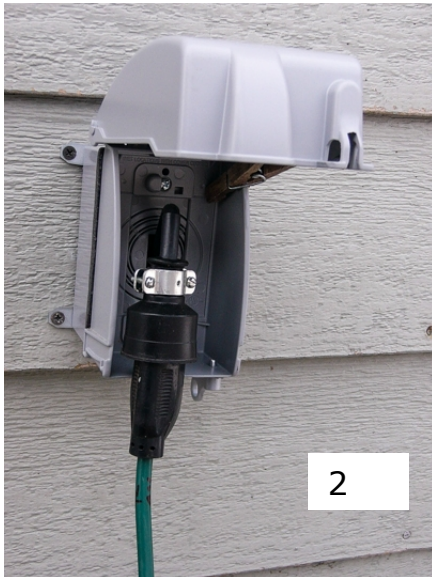
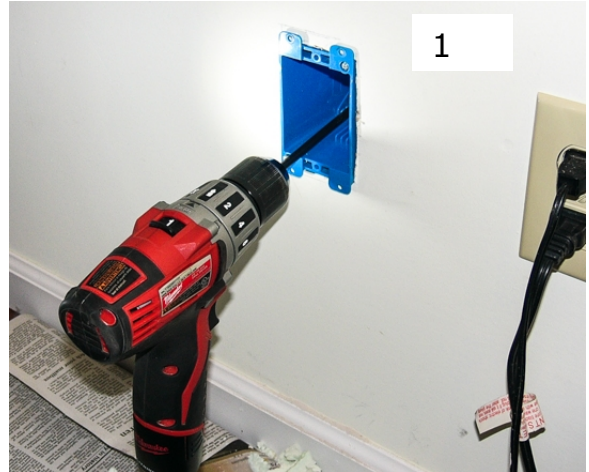


N1AW'S POWER HACK, AL WOODHULL, N1AW

We have a pellet stove, but it needs electric power, no more than 200 watts, for its blowers and controls. I have a small Honda generator that is adequate. My problem: in the winter when I might need to connect the stove to an emergency power source I don't want to have to open a door or window to bring an extension cord into the house.

My solution: install an outlet box on the wall inside the house. Use a long drill to make a hole through the sheathing and the siding (Photo 1). Mount a weatherproof outlet box on the outside wall, with a heavy duty plug on a short cable that can be packed inside when not in use (Photo 2). An

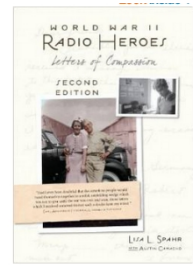
outdoor-rated extension cord goes to the generator, underneath the deck but in the open air where exhaust won't get into the house (Photo 3). The outlet box is rated for use in wet locations (Photo 4). Inside the house the special outlet is available for an extension cord to the pellet stove, with extra power for some lights and radios (Photo 5).



TWO BOOKS WORTH MENTIONING, RICH STEWART KB1NOX

Two books worth mentioning I received belated as Christmas presents

1. "World War II Radio Heroes & Letters of Compassion", Second Edition by Lisa Spahr & Austin Camacho



2. "Ham Radio Heroes and Some Not So Heroic", By Nunzio Addabo W4VYD

I have begun reading the second book. It took the author 58 years to produce, but it includes lots of history as well as some wonderful things have done to aid their communities with radio communications and some failures along the way. Both of these books are available at Amazon.com.

WITH JUST A WSPR, DAN ROMANCHIK, KB6NU

It's really amazing what you can do with computers in amateur radio, and there's been an explosion in the number of digital modes. One interesting mode that I've recently been introduced to is WSPR, which is short for Weak Signal Propagation Reporting. The protocol and the original WSPR program was written by Joe Taylor, K1JT, and is designed for sending and receiving low-power transmissions on the HF bands to test propagation paths.

I won't try to cover all the technical details here. There are several sites that cover them pretty well:

- Wikipedia: WSPR (http://en.wikipedia.org/wiki/WSPR_%28amateur_radio_software%29)
- G4ILO's Shack: WSPT - Distant Whispers (<http://www.g4ilo.com/wspr.html>)

I was introduced to WSPR by my friend, Joe, AC8ES. He posted a message to our club mailing list asking if anyone had a toroid core that he could buy to make a QRP balun for 10 MHz. When I asked what he was going to use it for, he said that he was making a WSPR transmitter with a Raspberry Pi, and the balun was for the dipole he built for it. He said that he'd gotten roped into doing this because he'd attended a local Raspberry Pi users' group, and when he mentioned he was an amateur radio operator, they encouraged him to try this project.

How could I refuse a request like that? I have a whole kit of ferrite cores, and after some back and forth, we found a small core that he could use.

The software he chose is WsprryPi (<https://github.com/JamesP6000/WsprryPi>). It's described as a "Raspberry Pi transmitter using NTP-based frequency calibration." It uses a GPIO port to generate WSPR signals anywhere from 0 to 250 MHz. Joe said that there are several Raspberry Pi programs that run WSPR, but that he chose this one because it seemed to have more features than the others.

Since the output generates a square wave, a low-pass filter is needed to filter out the high-frequency components. As you can see, the GPIO output is fed through a 0.1uF decoupling capacitor into a Mini-Circuits 10.7MHz low-pass filter, then to a 1:1 balun, which is connected directly to the dipole elements.

Joe says, "The antenna is just a dipole taped up to the walls of my living room and hallway." As you can see he made the balun and dipole from 24 ga speaker wire.

The performance of this setup has been kind of amazing. In one e-mail, Joe reported, "Your toroid seems to be working well. Got the balun and antenna finished and executed seven WSPR transmissions from the Raspberry Pi. The WSPR reporting website WSPRnet (<http://wspnnet.org>) came back with a couple dozen reception reports; typical distance is ~300+ miles, max was 593 miles." In a second e-mail, Joe writes, "Did a few more beacon transmissions and checked the WSPR signal reports again. Someone picked up my 5 mW signal from 1010 miles away in Canada."

Joe's turned into quite a WSPR fan. He's even written an Android app - WSPRnet Viewer (<https://play.google.com/store/apps/details?id=com.glandorf1.joe.wspnnetviewer.app>) to retrieve and displays report from www.wspnnet.org. Tapping on a specific report displays more details about it, along with a world map that shows transmitter and receiver locations.

Unfortunately, I don't have a Raspberry Pi, or I'd try this as well. I do have a BeageBone Black, but there doesn't seem to be software that I can download and install as easily as the Raspberry Pi software. That being the case, this might be a good excuse to purchase one of those new, cheaper RPis.

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 Bob Solosko at w1srb@arrl.net.