

HAM HUM is the official newsletter of the AK-SAR-BEN Amateur Radio Club, Inc. in Omaha, Nebraska. It is printed monthly and is distributed to members of the club, local disaster officials, local electronics outlets, and editors of other ham radio newsletters.

Articles about activities of members are solicited. The subject matter must be of general interest to radio amateurs and be understandable to a significant portion of the membership. No payment will be made to contributors and submissions will be subject to the usual editorial review. Articles containing statements that could be construed as libel or slander will not be accepted. No guarantee can be made that an accepted article will be published by a certain date. Send your contributions to Ham Hum, P.O. Box 24551, Omaha, NE 68124-0551 or email hamhum@aksarbenarc.org. Please contact the editor for permission to reprint anything appearing in the Ham Hum.

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Other Contacts

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EC Sarpy County	Dennis Mitchell	KCØYKN		
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Address Change?

If you've changed your mailing address, or would prefer to receive the *Ham Hum* via email, please contact Mary NØTRK (Membership) or Bill KCØSVZ (Publications) with your new information.

AARC on the Web

Club Web Site: <http://www.aksarbenarc.org/>

Facebook: <https://www.facebook.com/aksarbenarc>

Yahoo! Groups: <http://groups.yahoo.com/group/AKSARBENTalk/>

Club Calendar

May 8	7:30 PM LARC Meeting, 4647 Superior St., Lincoln, NE.
May 10	7:00 PM AARC Meeting, Red Cross Building, 81 st & Spring St, Omaha, NE.
May 11	11:00 AM HBQRP, Bredeaux Pizza, 1425 Silver St., Ashland, NE.
May 11	1:00 PM BARC VE Session, 11111 S. 84th St., Papillion, NE.
May 15	6:00 PM Field Day meeting, Perkins, Omaha, NE.
May 15	7:00 PM Heartland Hams, 403 Railroad Ave., Glenwood, IA.
May 16	7:30 PM BARC Meeting, Masonic Hall, 1908 Franklin St, Bellevue, NE
May 17	9:00 AM State track meet. Burke Stadium, 12200 Burke Blvd, Omaha, NE.
May 18	9:30 AM State track meet. Burke Stadium, 12200 Burke Blvd, Omaha, NE.
May 18	6:00 PM AARC Coffee. Perkins Restaurant, 108 th & L Streets, Omaha, NE.
May 23	11:00 AM QCWA Meeting. Old Country Buffet, 14525 W. Center Rd., Omaha, NE.
May 23	7:30 PM PARC Meeting. 1900 E. Military Ave, Fremont, NE.
May 23	7:30 PM SWIARC Meeting. 705 N 16 th , Council Bluffs, IA.
May 27	6:30 PM AARC Directors' Meeting. Village Inn, 78th & Dodge Streets, Omaha, NE.
May 28	6:30 PM AARC VE Session, Red Cross Building, 81st & Spring St, Omaha NE.
Jun 4	6:30 PM Technician Class, Red Cross Building, 81st & Spring St, Omaha NE.
Jun 8	11:00 AM HBQRP, Bredeaux Pizza, 1425 Silver St., Ashland, NE.
Jun 11	6:30 PM Technician Class, Red Cross Building, 81st & Spring St, Omaha NE.
Jun 12	7:30 PM LARC Meeting, 4647 Superior St., Lincoln, NE.
Jun 14	7:00 PM AARC Meeting, Red Cross Building, 81 st & Spring St, Omaha, NE.
Jun 15	6:00 PM AARC Coffee. Perkins Restaurant, 108 th & L Streets, Omaha, NE.
Jun 18	6:30 PM Technician Class, Red Cross Building, 81st & Spring St, Omaha NE.
Jun 19	7:00 PM Heartland Hams, 403 Railroad Ave., Glenwood, IA.
Jun 20	7:30 PM AARC Meeting. Masonic Hall, 1908 Franklin St, Bellevue, NE.
Jun 22	FIELD DAY
Jun 23	FIELD DAY
Jun 24	6:30 PM AARC Directors' Meeting. Village Inn, 78th & Dodge Streets, Omaha, NE.
Jun 25	6:30 PM Technician Class, Red Cross Building, 81st & Spring St, Omaha NE.
Jun 27	11:00 AM QCWA Meeting. Old Country Buffet, 14525 W. Center Rd., Omaha, NE.
Jun 27	7:30 PM PARC Meeting. 1900 E. Military Ave, Fremont, NE.
Jun 27	7:30 PM SWIARC Meeting. 705 N 16 th , Council Bluffs, IA.
Sep 7	AARC Flea-esta. Sarpy County Fairgrounds, Springfield, NE.

For more details and the latest updates, see the *Calendar* section of the AARC web site (<http://www.aksarbenarc.org/>).

BOARD MEETING NOTICE

The next AARC Board Meeting is scheduled for May 22, 2013, 6:30 PM at the Village Inn on 78th and Dodge Streets. Unless noted otherwise, Board meetings take place at that time and location on the fourth Monday of the month. For any changes to this schedule, check for an announcement at the next Club meeting, or on the AARC web page at <http://www.aksarbenarc.org/>.

You may be a ham radio operator if... Your Go-Bag has more clothes in it than your dresser does.

Area Nets

Monday

7:00 PM 145.290 South-West Iowa ARES Glenwood, IA.
8:00 PM 144.250 NE Missouri SWOT.
9:00 PM 146.940 AARC Chat Net. Ak-Sar-Ben ARC Omaha, NE.

Tuesday

7:00 PM 147.360 QCWA Hams who have been hams for at least 25 years.
8:00 PM 50.200 6m SSB Net.
9:00 PM 145.310 Washington Co. ARES Washington Co, NE.

Wednesday

7:00 PM 146.670 Dodge Co. ARES Dodge Co, NE.
7:30 PM 7.122 CW Four State QRP Comfortable Net.
8:00 PM 3.564 CW Four State QRP Comfortable Net.
8:00 PM 145.310 Saunders Co. ARES Saunders Co, NE.
8:30 PM 7.122 CW Four State QRP Comfortable Net.
9:00 PM 3.580.5 PSK Four State QRP Comfortable Net.
9:00 PM 146.820 Pottawattamie County ARES Council Bluffs, IA.

Thursday

8:00 PM 144.250 2-Meter SSB Net.
8:00 PM 146.360 Heartland DX Association.

Saturday

12:00 PM 146.82 Swap Net Council Bluffs, IA.
8:30 PM 3.921.000 QCWA Chapter 20.

Sunday

8:00 AM 3.902.500 Swap Net.
8:30 AM 3.896.000 3900 Club.
8:30 PM 443.925+ (103.5 tone) IRLP Net.
9:00 PM 146.940- Douglas Co. ARES net, KØUSA repeater.

Please let us know of any updates or corrections to the above.

You may be a ham radio operator if... You have thought you were still hearing CW, SSB, or SSTV tones, even when your ham radio was off.

Weather Radio Volunteers Needed

The weather radio programming project for 2013 began last month. We need volunteers to work with members of the KETV Weather Now team to help program the radios. These events occur at the Hy-Vee locations below on the listed dates.

- May 11: 3410 N. 156th Street (156th and Maple)
- May 25: 11650 S.73rd Street, Papillion (Highway 370 & 72nd St.)
- June 1: 1745 Madison Ave., Council Bluffs (Mall of the Bluffs)
- June 22: 7910 Cass Street (Peony Park Hy-Vee)

Time is from 10 AM to 1 PM on all dates. If you are interested in volunteering for this event, please let me know, and I'll pass on the information to the folks at KETV.

Gary Wiese KBØKYM, email: GAWWIECOX.NET



Veep Speaks

For our May program we are doing something a little different. A lot of us have built all sorts of interesting things related to our shared hobby, now is your chance to show off your creation. Please bring it, a picture of it, or at least a description of it, and tell us all about it.

There are many different ways to enjoy ham radio and one of them that I've wanted to try for a while is a fox hunt, so this summer I would like to organize one. However, I don't have any experience with them, so if anyone would like to help please let me know. Also, if someone would like to give a program on radio direction finding before the event, I would appreciate it.

If there is anything else you would like to see the Club do, or any program you would like to see put on, please let either me, or any member of the board know. We are always looking for entertaining things to do. Have a good May and try to keep warm.

Adam KDØMMG, Vice President AARC



(Field Day Procedures *continued from page 1.*)

Adam discussed the major features while demonstrating them on his laptop. This includes displaying data on a station after entering the call sign and state (including map), flagging duplicate entries, listing all sections (with color codes to indicate which have been worked), and summarizing the data for log submission, among others. The software also interfaces to most major transceivers and can be networked so that it can log the activity of all Field Day participants.

Adam concluded that Field Day is a low-stress way to get into operating a station, and there are lots of experienced people willing to help the beginner. He also stated that it's fun, you get lots of fresh air, and there's food—with priority given to the operators.

Finally, the Club still needs some volunteers to help make Field Day a success. If you'd like to help, go the Ak-Sar-Ben Amateur Radio Club web site (<http://www.aksarbenarc.org/main/>) and click on the Field Day link for more information and a sign-up form.



www.arrl.org

Bill KCØSVZ

Club Meeting Minutes – March 8, 2013

Bill WA9ASD, Secretary AARC

The meeting was called to order at 7:05 PM by Adam, KDØMMG in Tomas's absence with introductions by name and call followed by saying the Pledge of Allegiance. There were 27 attendees.

Officers and Board members present included: Adam, KDØMMG; Mary, NØTRK; Bill, WA9ASD; Dave, NØJSB, Barb, KCØHLB and Mitch, WBØGBI.

Secretary's Report - A motion was made by Mary, NØTRK, seconded by Pat, KØCTU, to accept the March club meeting minutes as published in Ham Hum. There were no corrections required and the motion passed unanimously.

Treasurer's Report - Dave, NØJSB - Dave reported that there were deposits of \$199 from dues payments of \$104, donations \$10, cook book sales \$15 and equipment sales of \$70. There were payments totaling \$253.24 including \$72.24 for Ham Hum, \$100 donation to the Maritime Radio History Society, \$78 for the Post Office Box rental and \$3 for bank fees. The balance of all accounts is \$21,954.10.

President's Report - Tomas, NW7US - not available.

Vice President's Report - Adam, KDØMMG - The program for tonight's meeting will be about Field Day logging and the software we use at the Aksarben ARC Field Day. Next month we will be talking about cool things we have built.

ARES - Steve, NØUP - There will be an ARES meeting within the next 2 months and training.

COMMUNITY EVENTS - Pat, KØCTU - The annual MS Walk will be tomorrow April 13. The State Track Meet will be May 17 and 18 and volunteers for that need to contact Pat.

OMMRS - Mary, NØTRK - Although the Offutt Air Show has been canceled there will be MARE on June 8 and possibly another date.

Education Committee - Mary, NØTRK - We are planning an 8 week class starting in June and running through July.

Membership Committee - Mary, NØTRK - We have applications for membership from Cameron Cushing, KDØOOB, Doug Olson, KCØIGO and Joel Schneider, WBØSIF. There was a motion by Barb, KCØHLB and John, WBØCMC, seconded by Ralph, WØSMY to accept these 3 as members of the club. Passed unanimously.

Ham Hum - Bill, KCØSVZ - There were no problems with printing this month's *Ham Hum*.

Web Site - Mary, NØTRK - The club web site works.

Repeater Committee - John, WBØCMC - It's working.

Field Day - Rob, AI7Q - Mary, NØTRK reported that Field Day is June 22 and 23 at

(Meeting Minutes continued on page 5.)

Contest Calendar

May 2013

ARS Spartan Sprint	0100Z-0300Z, May 7
CWops Mini-CWT Test	1300Z-1400Z, 1900Z-2000Z, May 8 & 0300Z-0400Z, May 9
NAQCC-EU Monthly Sprint	1800Z-2000Z, May 8
NAQCC Straight Key/Bug Sprint	0030Z-0230Z, May 9
NCCC Sprint Ladder	0230Z-0300Z, May 10
EUCW Fraternalizing CW QSO Party	1000Z-1200Z, May 11 & 1800Z-2000Z, May 12
CQ-M International DX Contest	1200Z, May 11 to 1159Z, May 12
SKCC Weekend Sprintathon	1200Z, May 11 to 2400Z, May 12
VOLTA WW RTTY Contest	1200Z, May 11 to 1200Z, May 12
FISTS Spring Sprint	1700Z-2100Z, May 11
50 MHz Spring Sprint	2300Z, May 11 to 0300Z, May 12
RSGB 80m Club Championship, Data	1900Z-2030Z, May 15
His Maj. King of Spain Contest, CW	1200Z, May 18 to 1200Z, May 19
Feld Hell Sprint	1600Z-1800Z, May 18
Baltic Contest	2100Z, May 18 to 0200Z, May 19
Run for the Bacon QRP Contest	0100Z-0300Z, May 20
SKCC Sprint	0000Z-0200Z, May 22
CWops Mini-CWT Test	1300Z-1400Z, 1900Z-2000Z, May 22 & 0300Z-0400Z, May 23
RSGB 80m Club Championship, CW	1900Z-2030Z, May 23
NCCC Sprint Ladder	0230Z-0300Z, May 24
CQ WW WPX Contest, CW	0000Z, May 25 to 2359Z, May 26
SARL Digital Contest	1300Z-1600Z, May 26
MI QRP Memorial Day CW Sprint	2300Z, May 26 to 0300Z, May 27
NCCC Sprint Ladder	0230Z-0300Z, May 31

June 2013

10-10 Int. Open Season PSK Contest	0000Z, Jun 1 to 2400Z, Jun 2
Wake-Up! QRP Sprint	0600Z-0800Z, Jun 1
Maritimes QSO Party	1200Z-2400Z, Jun 1
SEANET Contest	1200Z, Jun 1 to 1200Z, Jun 2
Alabama QSO Party	1600Z, Jun 1 to 0400Z, Jun 2
ARS Spartan Sprint	0100Z-0300Z, Jun 4
NCCC Sprint Ladder	0230Z-0300Z, Jun 7
VK Shires Contest	0600Z, Jun 8 to 0600Z, Jun 9
Asia-Pacific Sprint, SSB	1100Z-1300Z, Jun 8
SKCC Weekend Sprintathon	1200Z, Jun 8 to 2400Z, Jun 9
Portugal Day Contest	1200Z, Jun 8 to 1159Z, Jun 9
GACW WWSA CW DX Contest	1500Z, Jun 8 to 1500Z, Jun 9
REF DDFM 6m Contest	1600Z, Jun 8 to 1600Z, Jun 9
ARRL June VHF Contest	1800Z, Jun 8 to 0259Z, Jun 10
NAQCC Straight Key/Bug Sprint	0030Z-0230Z, Jun 12

Sources: <http://www.hornucopia.com/contestcal/index.html> & <http://www.aksarbenarc.org>



(February Haiti Trip *continued from page 11.*)

They are intended for program production rather than photography. There is so much that can be done with them and the video switcher (also got from KETV) that I hope there is enough time to do adequate training.

For those who have never been there, the path to the studio is/was across a section of sloping roof with no walls. That section is getting walls and will be a new room with a level floor for equipment and extra studio area. It wasn't nearly finished by the time I left but will be a big plus for the facility when it is.

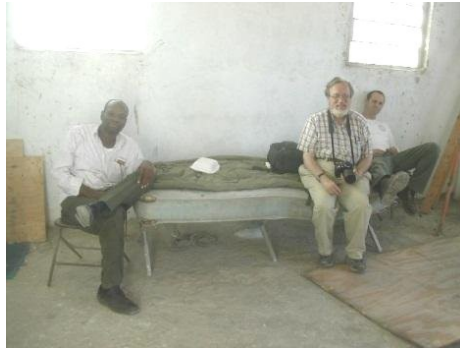
While there, I found out that there had been a man from the Dominican Republic doing some research at the quarry. It appears that there is a lot of high quality marble there and Revenel has most of the heavy equipment to dig it out. The first or second week of March they were supposed to take some core samples and send them to the DR for analysis and from there to Italy. If the results are favorable it could mean more and significant income for the mission.

Several of the volcanoes were oozing, gurgling, and burping while I was there. They are pretty at night with the orange flocs running down the mountainsides. By volcanic standards, they are quite tame. They seem most active during the few days around the full moon. Maybe its gravity has something to do with it. Just guessing, though.

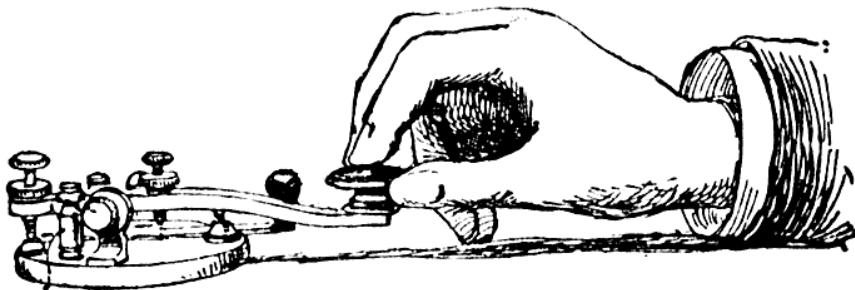
All things considered, I'd say it was a successful trip. I left a very happy pastor. He's back on the air with both the radio and TV and is getting reports from much of the country on coverage. He has his path back into the Voodoo culture again to do evangelization. The semi-official figures I have seen are that 60-70% of the population practice Voodoo. Revenel tells me that in the Gonaives area it's only about 50% or less thanks to the radio and TV, even though it's been off the air for a bit over a year.

We'll see how it works in the future. We have great hopes and expectations.

John WBØCMC



Pastor Revenel, Dave Blodget and Joe Francis in the transmitter building on the mountain.



(Meeting Minutes *continued from page 4.*)

the 911 center and the Douglas County Crime Lab. There is a sign-up form for all positions and activities on the club web site.

QSL and Technical Committee - Eddy, KØIL - no report.

Courtesy Committee - KEØXQ - Steve Schmidt, KEØSS mother passed away.

Trailer/Equipment Committee - Mary, NØTRK - We had a meeting and we have a game plan for finishing the N6KVA trailer.

Flea-Esta - Pat, KØCTU - The Flea-Esta is planned for September 7, 2013 at the Sarpy County Fairgrounds. We are considering renting the building next door for an additional \$25 with no additional deposit.

Old Business - none.

New Business - none.

Announcements

- Ralph, WØSMY announced that he has arranged for a meeting room at Maple Crest that is available on Mondays, Wednesdays, and Fridays for an Extra Class License class. Those interested should let him know which day of the week they prefer and he will arrange for the room. They would like to work from a variety of study materials.
- Gary, KBØKYM announced that the Channel 7 weather people will be available to program weather radios at several area Hy Vee store from April 27 through May 11. Club members who would like to assist with this should contact him.
- John, WBØCMC announced that there will be an amateur barbeque contest at the Benson Farmers Market in conjunction with Benson Days on July 27.
- Norm, WAØJYD mentioned that the Nebraska QSO Party will be sometime this month and that it's not listed in the operating events calendar in the current *Ham Hum*.
- Mary, NØTRK announced that there is equipment for sale on the club web site.
- Pat, KØCTU reported on participation in the Upper Midwest Collegiate Sprint, a rowing competition sponsored by Creighton University. This was the first time for radio support of the event and future events will have more involvement.

Rollie, ABØNN was not present so there were no drawings for good door prizes. Nonetheless, our two newly accepted members that were present were awarded the 'other' door prizes. Cameron, KDØOB was awarded the Brown Bag Door prize which consisted of 50 brown bags. Joel, WBØSIF received the Mr. Reeh Door Prize which was a QRP Transmitter Kit with power supply and instruction. The kit consisted of a can of smoked ham, a 9 volt battery, and battery clip.

At 7:33 PM a motion was made by Greg, WØAAI, seconded by Jim, KAØKCV to end the meeting. Passed unanimously.

Bill WA9ASD, Secretary AARC

April Door Prizes

Rollie ABØNN wasn't able to make it to the April meeting, so the usual batch of door prizes weren't available.

Unfortunately, the Brown Bag and Mr. Reeh Door Prizes still were—so it was decided to ~~unleash~~ award them to the two new

members who were present at the time: Cameron KDØOB and Joel WBØSIF.*

The Brown Bag prize went to Cameron, who discovered that he'd received a brown bag full of brown paper bags. The Mr. Reeh Door Prize, a QRP ham radio kit, was awarded to Joel. The kit consisted of a can of smoked ham, a 9 volt battery, a battery clip, and the following instruction manual:

QRP Transmitter Kit (Power Supply Included)

Required: Ears-centered computing device, engaged, quantity at least one.

Instructions

1. Open can.
2. Remove contents (eating is okay).
3. Add components.
4. Apply power.
5. Tune for maximum output.

Warning: The essential essence that lives inside of all electronic parts is smoke. If the smoke is allowed to leave the device, it will no longer work. The smoke can never be put back again.

Note that the proceeds for each month's tickets go for buying next month's prizes. Also, all tickets are kept and included in the Grand Prize drawing in December. The more tickets you buy, the better your chances of winning at the end of the year.

Bill KCØSVZ & Bill WA9ASD

* See *Club Meeting Minutes* in this issue for details.

Community Service Thanks!

A big thanks goes out to Adam KDØMMG, Corby KØSKW, Mary NØTRK, and Pat KØCTU for providing communications support to the MS Society's "MS Walk" event on April 13th. This has been a service provided by the Ak-Sar-Ben Amateur Radio Club for more than 20 years.

The 2013 Edition started at Stinson Park and followed along the Keystone Trail to the turnaround point at Kohl's parking lot. The trail was often crowded with walkers, but everyone made it safely back to Stinson Park.

If you weren't able to help out with this event, there will be more in the future. Check the AARC web site (<http://www.aksarbenarc.org/>) and the weekly ARES net for more chances to volunteer.

(Source: AARC Web Site)

February Haiti Trip

John Gebuhr, WBØCMC

[This is Part II of a two-part article on John's latest trip to Gonaives, Haiti, where he did volunteer work upgrading the TV and FM stations belonging to Pastor Revenel Benoit's Lutheran Church.]



Studio cameras from KETV.

Back to the studio cameras. It turned out that the power transformer out on the pole outside the church had burned out sometime before we got there and they had hay-wired power from somewhere else. I turned one of them on and it was not happy. In checking the voltage at the outlet it was only 98 volts. The camera promptly got turned off and we did some serious electrical work.

With most of the equipment off the outlet now read 180 volts, another only 40. Someone didn't hook up the neutral. We finally got that straightened out and had 115 at both outlets. Due to the apparently long wires to wherever the source was, as equipment was turned on this sagged to around 100-105 volts.

These are the three studio cameras donated by KETV in Omaha, including the pedestals. The one with the skirt off needs some more counterweights. One of the welders at the quarry is making some out of iron. The originals are lead. He had 6 done when I was still there and did a really good job. This pedestal also has a bad ring gear in it that I'm going to try and find. It doesn't steer too well.

With the bad power situation we decided not to try and run them till we get a new transformer for the church and have reliable voltage again. Even though Revenel is itching to get them going, It was easy to convince him to wait till the new transformer gets installed. We don't want to take a chance of damaging \$250,000 (new price) worth of equipment with bad power. Once we get good power I still need to time all three for both color and sync. Then comes a lot of training. These cameras are clearly professionals and will do lots of stuff that your home camcorder won't.



The mason working on the new room. The street is four floors down through the tree.

(February Haiti Trip continued on page 12.)

(What I Made *continued from page 7.*)

I put a 12 volt pilot lamp in series with the output of the rectifier to the string of diodes to limit the current. The lamp serves as a pilot light and it limits the current the charger will put out and you can sort of tell how much current is flowing. If the light is not quite regular brightness there's barely any current flowing and if it's so bright it looks like it's going to burn out because there's a lot of current flowing. Actually, with a dead short (there's no such thing as a live short) the charger puts out 140 mA, which is real close to the current you would want to use with AA NiCads; and the current tapers off nicely as the cells come up to full charge.

So the next time you need a transformer, just rewind one you already have.

Not so fast, grasshopper. Beg, borrow or steal a small transformer to replace or make what you need. You'll never be able to find, let alone afford, the magnet wire to rewind the transformer. One pound is probably the smallest you can buy. Do you know how many feet of wire are on a one pound spool of tiny magnet wire? Let's see - 200 mA means #36 wire. Let me see, in the table here it says, oh yeah, there it is - one pound of #36 magnet wire is 12,380 feet. Geez, how many transformers do I have to rewind?

Yeah, cut to the chase - buy a wall wart. By the way, many wall warts now have a fuse in the primary or secondary. When it dies just split the case along where they glued it together (I like to carefully cut it open with a hacksaw) and see if there is a fuse. They're usually wired-in, so bridge it with another fuse or live dangerously and jumper the fuse.

I still have and use my universal NiCad charger.

Bill WA9ASD

You may be a ham radio operator if... You have answered the telephone with your call sign, and then finished the conversation with "73" and your call sign.

Ham Radio at the Boston Marathon

[Thanks to Mary NØTRK for bringing this to our attention.]

There were nearly 150 amateur radio volunteers maintaining communications along the 26-mile course of the Boston Marathon last month. Things were going as expected until the bombs went off; but even amid the confusion, the hams operated in a professional manner: procedures were followed and nobody panicked. Though cell phones were down, the people in Net Control were able to contact the hams along the course and stop the race. First aid people and other emergency workers were able to quickly get to where they were needed.

For details, see the excellent first-hand report by Tim Carter, W3ATB, on his web page at <http://w3atb.com/66-boston-marathon-2013-bombs-carnage-and-amateur-radio-operators> (<http://tinyurl.com/cc8tql3>).

Bill KCØSVZ

When is a Metal Pipe in the Ground not Grounded?

Cliff d'Autremont, K6LH

[If selecting a pipe to ground your antenna, make sure it's actually grounded!]

My study of "ground" began when I was 12 years old. My brother Dick (KBØKJV, Ak-Sar-Ben ARC) is 12 years older than I am and he was working for AT&T Long Lines in Davenport, Iowa where we grew up, before he moved to Omaha. I would absorb as much telephone, radio, electricity, and electrical wiring education as I could from him.

One particular facet that he would talk about is "ground." Specifically, he said that ground is a conductor. Whoa, say what? Dirt conducts? He told me that when he was my age he strung a single wire from our house across an empty lot to a neighbor's house for a telegraph system with a key and a sounder on each end and a battery, using ground as the return path, same as telegraph systems have done since the 1800s.

I had two old handsets and a battery and scrounged enough wire to run a single wire from my house to a neighbor kid's house and we tried it out, one wire and a ground. Sure enough, it worked, although it was rather noisy, but we could talk. I concluded that ground indeed conducts. Albeit noisily.

So, if ground conducts, how much resistance is there? Dick had given me a nice VOM to encourage my interest in electricity. I took it outside and poked the probes into the dirt about 6 feet apart and measured the resistance of ground. About 1000 ohms. (Only about an inch of metal on each probe stuck in the ground.)

Fast forward to a few months ago when I decided to put up an OCFD (Off-Center-Fed-Dipole) wire antenna. I would take down my 30-foot TV mast that supported a two-meter antenna and put up a heavier pipe and this time pay attention to grounding, both for lightning/electrical fault protection and RF grounding.

First thing I noticed was that the gas pipe wasn't strapped to the nearby electrical panel ground rod, which had been recently installed with the new solar panels. So I probed between the gas pipe and the ground rod to check for continuity and found not only that it wasn't connected, but I measured about 600 millivolts between them. The solar panel electrician said that gas pipes are strapped to electrical ground. I went to the other side of the house where there is an electrical sub-panel for the spa and found that the electrical panel and the gas pipe were a dead short. What gives?

A ham friend (Scott, N6LEM) who had worked as a Motorola radio tech, solved the mystery for me. Buried gas service pipes (mains) have insulation wrapped around them to isolate from ground and they also have a voltage applied to prevent galvanic corrosion, which occurs when two dissimilar metals are in contact, or when a metal is in contact with earth. Wikipedia has two nice articles, one on Galvanic Corrosion and one on Cathodic Protection, and in particular, buried pipes. Mystery solved.

As it turns out, there is electrical isolation between the buried insulated gas pipe from the street, and the gas pipe into the house. The isolation takes place at the gas meter. When I measured the house side gas pipe to the ground rod, I measured a dead short. For the mains service side to the ground rod, I measured 600 mV.

(When is a Metal Pipe in the Ground not Grounded? *continued on page 10.*)