



The Wave Bender

April 2016



WRARC PREZ SEZ

2016 Officers:

President: Bob Mitzel, N8RCM n8rcm@wrarc.net
VP: Joe Wojtowicz W0JO w0jo@wrarc.net
Secretary: Jo Wilms, KD8SNW kd8snw@wrarc
Treasurer: Rose Marko, KD8TII kd8tii@wrarc.net
Past President: Roy Haren, KD8IJF kd8ijf@wrarc.net

Trustees:

Harry Harker, KD8PQK kd8pqk@wrarc.net
Russ Williams NR8W nr8w@wrarc.net
Darrin Cannon, N8DMC n8dmc@wrarc.net

Appointed Positions:

Social: Amanda Faron, KC3GFU kc3gru@wrarc.net
Publicity: Joe Wojtowicz, W0JO w0jo@wrarc.net
Nets: Steve Fabry, KC8SOY kc8soy@wrarc.net
Classes/Testing: Al Avnet ab8aa@wrarc.net
Newsletter/Web: Jane Avnet K8JAA k8jaa@wrarc.net
Facebook/Badges/logo Design:
John Fabry, KC8SPF kc8spf@wrarc.net
Historian: Terri Mitzel, KD8YEE kd8yye@wrarc.net

Officer's Meeting:

April 12, 2016, 7:00 P.M. At
Austintown, Eat 'n Park,
5451 Mahoning Ave
All members welcome

Regular Meeting:

April 19, Davidsons
3636 Canfield Rd., Cornersburgh

Speaker: SM, Scott Yonally, N8SY
Topic: ARRL & a Question & Answer Session

<http://www.wrarc.net/>

I sit here in the shack tonight, where I have spent most of the day. The difference now is that I feel relaxed and satisfied once again. It is nice to see a group of people get together and do something they love and to make pulling together all day nets on three different bands look so easy, and sound so good.



I am beginning to expect every event we do to go as smoothly, because we have proved we can do it so many times. I have seen the skills our members possess and use with ease. And this is just one of the accomplishments that have happened this month.

Last week we were presented with the opportunity to work with a group of Boy Scouts at Austintown Park. Dave Beatty, KC8WY, passed the invitation to Chris, WF8U, who took the challenge, recruited Steve, KC8SOY, and with only a day or two they managed to pull it together. I worked with Chris and we made certificates for the Scouts that participated in the program.

I believe it was 12 Scouts that made their first ever Amateur Radio contact on Radios provided by, and under the instruction of, members of WRARC. There were 4 members at the park, Steve, KC8SOY, Chris, WF8U, Darrin, N8DMC, and Amanda, KC3GFU. The Scouts were put in contact with Stan, KB3WPD, Dave, KC8WY, Frank, KD8YZE, Joe, W0JO and myself who fielded a couple of questions from each of the Scouts.



The scoutmaster came on the air and personally thanked all those involved and plans on telling the other scoutmasters

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what this group did. This was put together and the invitation to attend came through Austintown Parks to Dave Beatty who passed it to us. All involved were extremely pleased with the way things were handled and I think we will hear more from them in the future.

Congratulations to Nancy Brett, KD8QNY, who passed her Extra class upgrade on March 2. Just think, it is only March 20, we are still in our slow time of the year, I can't wait to see what the rest of the year brings!

Again, Thanks to all the members that make our club the Best Amateur Radio Club in Mahoning Valley.

FROM OUR VP

EASTER SEALS "MAKE THE FIRST FIVE (YEARS) COUNT" EVENT

Thanks to all of our members who participated in our 6th anniversary HF/VHF net that we had on March 20th, 2016. Your help was greatly appreciated by your club officers and trustees.

Please mark your calendars for Saturday, April 30th, 2016. Many thanks to Rose Marko, KD8TII, our Treasurer, who located this charitable community fund-raising event. The event I'm referring to is the "Make The First Five (Years) Count" 5K Run/Walk sponsored by the local Easter Seals Disability Services to be held in Boardman Park. With the celebration of the Easter holiday the end of March, this is a fitting community service event for our club.



The Easter Seals organization states that the first five years of life lay the foundation for a child's long-term well-being and overall success. Because children learn and grow at different rates, even the most attentive parents can miss some important milestones. As a leading provider of child development services, Easter Seals is there to be a partner in raising a healthy and happy child. The organization helps parents be aware of the five key growth areas during these critical years before their child starts kindergarten.

Every year, more than 1 million children will enter school with an undiagnosed development delay. Easter Seals Disability Services wants to change that. They want to ensure ALL children start kindergarten with the right skills to succeed alongside their peers. Together, we can "Make The First Five (Years) Count". For more information about this worthy cause, please visit www.easterseals.com.

At this time, we do not have the actual times for the event, but it will start mid-morning and shouldn't be more than a few hours. As we get closer to the date of the event, we'll notify our membership of the time(s) and place where we'll meet. We need more volunteers for this, so if you could spare a few hours that day, we'd greatly appreciate it. These community events get our club's name out there to the general public to become more aware of our hobby and service. Please contact me at (330) 544-5865, or email me at W0JO@arrl.net if you can help.

Our next club meeting will be held on Tuesday, April 19th, 2016 at Davidson's Restaurant, 3636 Canfield Road, Canfield, OH 44406 starting with dinner at 6:00pm EDT and our meeting starting at 7:00pm EDT. Our guest speaker will be Scott Yonally, N8SY, the American Radio Relay League's (ARRL) Section Manager. We welcome all amateur (HAM) radio operators to our meeting and those who are interested in learning more about the hobby/service. Until then . . .

73, Joe, W0JO, VP/WRARC

ARRL Introduces 3 New E-Books for Radio Amateurs

<http://www.arrl.org/news/arrl-introduces-3-new-e-books-for-radio-amateurs>

HF RESULTS FOR THE 6TH ANNIVERSARY OF WRARC.

On March 20, 2016 at 1400 Z the WRARC club started a HF Special Event station. Al, AB8AA started out on 20 meters at 14.310 MHz. Band conditions were somewhat spotty at best. However, contacts were being made about every 2-minutes. After about 1 ½ hours, Joe, W0JO called and he took over the 20-meter spot. At that time I went to 40 meters at 7.170 MHz.

Around 1700 Z Roy, KD8JMO called and asked if I wanted a break. At that point he took over for about 45 minutes. After my break, I continued working 40-meters for the rest of the day. During the afternoon Greg, K2GRG came over and helped operate till around 2130 Z. The HF operators made a total of 137 contacts.

When we do this next year I hope we will have more HF operators so we can cover other bands. Thanks to everyone that helped, Allan, AB8AA

Video of Solar Eclipse from 35,000 Feet

<http://cosmicpursuits.com/803/video-of-solar-eclipse-from-35000-feet/>

6TH ANNIVERSARY NET RECAP

Wow!!!! What a Celebration!!! - Thank you to Steve KC8SOY and Darrin N8DMC for working together with the club and board to have the Anniversary Net celebrating the 6th year of our Great Club. Also, Thank you To Al Avnet for listing the Anniversary net with ARRL, and for having the net on 20 and 40 meters. For the HF net Al Avnet had 118 Contact with our new Member Greg Jackson, , assisting him for about 4-hours. Joe W0JO had about 19-20 contacts. I have not heard how many Darrin had.

Our 2 Meter was hosted by Steve, KC8SOY. Kicking the net off at 10:00. Mike, KC8WUX, jumped in at 10:30. Terri, N1TAM, followed along for a wonderful time. Bob, N8RCM, hosted at 11:30. Jane Avnet, K8JAA, hosted for Al, since he was on HF running the 20/40 meter nets. Mike, KC8WUX, relieved Jane, K8JAA, so she didn't have to run a full hour. Thank you Mike!! Darrin, N8DMC, followed at 13:00. Steve, KC8SOY, Covered the 13:30 slot with Russ, NR8W, at 14:00 to add so humor! Past President Roy, KD8IJF, ran from 14:30 'till 15:00 when Russ, NR8W, jumped back in to give everyone more laughs..... Our Vice President Joe, W0JO, hosted the 15:30 slot followed by Frank, KD8YZE, who added to the net today by asking the net operators how they became hams. That was very interesting. Thank you Frank!! Our President, Bob N8RCM, jumped back to cover the 16:30 slot followed by Stan, KB3WPD at 17:00. Stan also brought some humor with him to the net, trying to give something away, which I didn't ever figure out what he was giving away . . . Guess I won't be winning what he had to give away. And to wrap the day up we had Chris, WF8U.



We had members and non members that checked in. I know that at least one person liked what he was hearing about the club as we shared who and what we do and stand for, he expressed interest in the club and we hope (speaking for all the club) that he does come join us as we are always looking for new members.

A great job by all . . . Thank you again for participating in the Anniversary net, and Making this a GREAT EVENT. I'm proud to be apart of this Awesome club!!

73, Terri, N1TAM

GOD BLESS MY FAMILY AND FRIENDS . . . PRAY FOR OUR COUNTRY, FREEDOM IS AT STAKE . . .

The greatest discovery of my generation is that a human being can alter his life by altering his attitudes of mind. - william James US Pragmatist philosopher & psychologist (1842 - 1910)

WHAT'S COMING UP?

- April 12 Board meeting - Eat'n PARK, Austintown
open to all interested members.
- April 19 Meeting at Davidsons'
Speaker: Scott Yonally, N8SY, Ohio Section Manager
- April 16-24 National Parks Week
- April 20 Testing at ITT
- April 22 Earth Day
- April 24 First Kent State Mini Maker Faire®
www.kent.edu/launchnet/news/creativity-be-celebrated-first-kent-state-mini-maker-faire%C2%AE
- April 30 Easter Seals 5K Walk/Run
- MAY 20-22 Dayton Hamvention .
- MAY 21 Armed Forces Day



IMPORTANT LOCAL WEB SITES

<arrrl-greatlakes.org/> ARRL Great Lakes Division Web Page

<www.arrrlohio.org/> ARRL Ohio Section Web Page

The complete W1AW Operating Schedule may be found on page 103 in the April 2016 issue of QST or on the web at, <http://www.arrrl.org/w1aw-operating-schedule> .

**Back to Basics - From shopping for your first radio to
putting up your first antenna,
here is some tried and true advice.**

<<http://www.wrarc.net/backtobasics.pdf>>

From August 1995 QST, Volume 79, Number 8

CONTACT WRARC ELMERS WITH YOUR QUESTIONS - QUESTIONS@WRARC.NET

Avnet, Allan AB8AA

Antennas, radio setup, mobile,
grounding, classes, anything
anything

ab8aa@arrrl.net

Beatty, Dave KC8WY
Fabry, Steve KC8SOY
Haren, Roy KD8IJF
Williams, Russ NR8W
Wojtowicz, Joe W0JO

Yaesu FT8900, FT8800, Mobile
???
Electrician, tele-data, Amateur Extra
ICOM radios, D-Star

kc8wy@zoominternet.net
kc8soy@yahoo.com
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rwiliams@neo.rr.com
w0jo@arrrl.net



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He who is afraid of asking, is afraid of learning

Articles from members for the Wave Bender are encouraged. They must be received by the editor one week before the end of the month. Please send your articles to: k8jaa@arrrl.net, and put WRARC on the subject line of your email. You may also send your articles to the editor: Jane Avnet, 2050 E. South Range Rd., New Springfield, OH 44443

HOW I BECAME A HAM

Before Dennis & I moved to Austintown, I knew of Ham Radios, but I wasn't interested in them. He had always been interested in Ham Radios, but could never get involved with them because of his hearing. He had problems doing Morse code.

The year after we moved here, we went to the Home and Garden show at the Austintown Plaza where we spotted the Ham Radio booth. We got to talking with Al and Russ to find out all about it. Dennis was pleased with the changes made to the business, and he was very interested in getting back into it. I, on the other hand, was still not interested in knowing anything about it. Dennis got a schedule from Al, showing us when the meetings took place. We went to the first meeting in March of 2012 to see what it was all about, and because he thought it would be the way for us to meet new friends. While at the meeting, we found out about the Hamvention taking place in Dayton, Ohio in May of that year, and decided to go to see what it entailed.



Dennis started studying for his tech license so he could take the test at the Hamvention. While there waiting for him to finish with the testing, I started browsing through the Tech book. It seemed very interesting. During that summer, I decided that I wanted to get my Tech license, too, so I kept reading and testing myself all summer and took the test in October of 2012. I surprised myself by passing the test with only three wrong answers.

After attending all the meetings and listening to the speakers over the years, I decided I wanted to become more involved with the club. So on December 18, 2015, I took the plunge and signed up to do the net. I was nervous about doing it but afterwards, I felt I did a fairly good job and I wanted to continue doing it. In April 2016, I will be doing the net for my third time, April 5th, to be exact. I am looking forward to the experience and hope to continue getting better each and every time I do it.

I also decided in Nov. 2015, to run for the Treasurer's position, because I felt I could do a good job doing something I enjoy. I feel that if I can do this, anyone can do it. It's another way you, the members, can get involved with the club and learn new and exciting things that take place at the meetings.

73, Rose, KD8TII



NATIONAL PARKS ON THE AIR UPDATE

National Parks Week is April 16-24, a happy alignment for National Parks on the Air operators, as World Amateur Radio Day is April 18. This would be a prime day to get out and operate from an NPOTA unit, promoting both the National Parks and Amateur Radio simultaneously. If you plan to be on the air from an NPS site for World Amateur Radio Day <<http://www.iaru.org/world-amateur-radio-day.html>>, e-mail the details to npota@arrl.org.

There are 28 NPOTA activations scheduled for March 24-30, including Big Bend National Park (NP04) in Texas, and the Tuskegee Airmen National Historic Site (NS71) in Alabama.

Details about these and other upcoming activations can be found on the NPOTA Activations calendar.

Keep up with the latest NPOTA news on Facebook. Follow NPOTA on Twitter (@ARRL_NPOTA).

**Join us for the WRARC Friday night Net 9:00 P.M.
145.270, PL -110.9
Upcoming Net Control Operators**

Apr 01	Steve, KC8SOY
Apr 08	Terri, KD8YYE
Apr 15	Rose, KB8TII
Apr 22	Frank, KD8YZE
Apr 29	Dave, KC8WY
May 06	OPEN
May 13	Joe W0JO

**Contact Steve, KC8SOY to take a turn at Net Control
330-774-6346**

WRARC Simplex Frequency 146.565



Mahoning County ARES® Nets

1st Monday 8.30 PM ET W8QLY Repeater - 146.745 (PL 110.9)

&

3rd Monday 8.30 PM ET W8QLY Repeater - 146.745 (PL 110.9)

We thank MVARA for the use of their repeater

W8SGT is facilitating The Ohio HF net every Tuesday - 7:00 PM

The net is run from the State of Ohio EOC on the

Ohio ARES Admin frequency 3875 kHz LSB

moves to 7240 Khz after 20-min.

All are welcome to check in.



**The Ohio ARES/OES Digital Emergency Net held every Tuesday at 8:00PM.
held on 3585 kHz USB.**

Please note all digital communications are Upper Side Band.

<http://www.http://ohden.org/> for net details. Net Manager Gary NJ8BB

COLUMBIANA COUNTY DIGITAL NET

Wednesdays 8:30 pm - 9:30 pm

145.510 MHZ SIMPLEX

**NBEMS/FLDIGI is being used training on message handling
capabilities of FLDIGI/FLMSG. Start with BPSK-125 other modes may be used for testing**

**First Wednesday of the Month Mahoning County Skywarn Net
is held on the W8QLY repeater 146.745 (-) at 8:30P.M.**

All of our members (and others) look forward (hopefully) to getting this newsletter every month, so keep sending those articles, jokes, and suggestions!

Thanks goes out to this month's contributors; W0JO, N8SY, K8DJM, W5YI, the ARRL and the World-Wide Web. 73

NEW PUBLIC SERVICE EVENT



SAVE THE DATE...EASTER SEALS 5K WALK/RUN TO "MAKE THE FIRST FIVE COUNT

"Easter Seals Annual 5K Walk/Run to "Make the First Five Count" will be held at Boardman Park on Saturday, April 30th. Registration to begin at 9:00 a.m. in the Lariccia Family Community Center, with the walk/run beginning at 9:30 a.m.

Each year one out of every five children begins the school year behind his or her peers. Through our Make the First Five Count walk/run we not only raise critical funding for our services but raise awareness of the importance of the first five years of a child's life.

Through the generous support of the CVS Caremark Charitable Trust, Easter Seals provides FREE access to the AGES & STAGES QUESTIONNAIRE to parents. The questionnaire serves as a screening tool to help parents monitor their child's development. Easter Seals encourages parents to complete the Ages and Stages Questionnaire and to seek help if they feel their child may have a developmental delay.

To Volunteer contact Joe, W0JO <w0jo@wrarc.net>



**I am happy to report that, thanks to Rosemary Marko's finding this community fund-raising event,
73, Joe Wojtowicz, W0JO**

"I wish I could go back and tell myself that not only is there no trade-off between living a well-rounded life and high performance, performance is actually improved when our lives include time for renewal, wisdom, wonder and giving.

That would have saved me a lot of unnecessary stress, burnout and exhaustion."

-Arianna Huffington

FCC SEEKS COMMENTS ON PETITION TO GRANT LIFETIME AMATEUR RADIO LICENSES

The FCC is seeking comments on a Petition for Rule Making (RM 11760 - available on the web at, <http://apps.fcc.gov/ecfs/document/view?id=60001333714>) that asks the FCC to grant lifetime Amateur Radio licenses. Mark F. Krotz, N7MK, of Mesa, Arizona, filed his request with the FCC last November. He wants the FCC to revise Part 97.25 of its rules to indicate that Amateur Radio licenses are granted for the holder's lifetime, instead of for the current 10 year term. Krotz noted that the General Radiotelephone Operator License (GROL) already is issued on a lifetime basis, and he maintained that not having to renew licenses would lighten the FCC's workload.



"It would be mutually beneficial for the FCC and Amateur Radio operators to update Part 97 to grant operator licenses for lifetime, Krotz said in his filing. "The FCC would benefit by reducing administrative costs."

In 2014 the FCC granted lifetime credit for examination elements 3 and 4, but applicants seeking relicensing under that provision still must pass examination element 2.

Individuals may submit comments (<http://apps.fcc.gov/ecfs/proceeding/view?name=RM-11760>) via the FCC's Electronic Comment Filing System (ECFS).



Amateur Radio Operator "Amateur means we're simply professional volunteers" ARRL reflector

MARCH 12 WRARC DEMONSTRAIGHTS AR TO BOYSCOUTS



On Saturday, March 12, 2016, members of the Western Reserve Amateur Radio Club had the opportunity to demonstrate to local Boy Scout Troop 184. The troop is based out of St. Joseph's Church in Austintown.

Troop 184 was on a camp out in Austintown Park led by Committee Chair, Todd Miller. WRARC member Chris, WF8U, led the demonstration to 12 Scouts aging in range from 11 to 16. Helping him in instructing was fellow members Amanda, KC3GFU, Steve, KC8SOY, and Darrin, N8DMC. Chris, WF8U taught the scouts about what amateur radio is, the basics of RF and RF safety, the basic components of antennas, antenna safety, station ground-

ing, the components of a radio and how they work, the difference between VHF, UHF, and HF, call-signs, radio etiquette, and the basics of how a repeater works. After plenty of intriguing questions from the scouts, it was time to get them on the air for the first time.

Chris WF8U called up a net, checking in 5 members to help the scouts. Thank you to those members: Bob, N8RCM; Frank, KD8YZE Joe, W0JO; Stan, KB3WPD, and Dave, KC8WY. Each scout received a Certificate of Achievement for making their first contact.

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TROOP 184 - CONTINUED FROM PAGE 8

It was great fun to see a younger generation so eager to learn and engage in Amateur Radio. WRARC hopes to continue working with the community in positive ways. Special thanks to Dave, KC8WY and Liz, KD8DWV for making this opportunity possible and allowing us to use your repeater, 145.270!

73, Amanda, KC3GFU

Thanks from WRARC to all who participated!

WE FINALLY GOT THERE!



We are happy to report that Mark, KD8YMK, after a long and arduous process, finally achieved the rank of Eagle Scout with the Boy Scouts of America, in Nov. of 2015. Mark has been a member of Troop 44 out of Poland Presbyterian Church since crossing over to Boy Scouts from Webelo Cub Scouts in Feb. of 2009 when he was a fifth grader. It's hard to picture him as that young pre-middle schooler from all those years ago. The boys work hard as they advance to each rank along the way. This advancement is called the Boy Scout Trail and each level has its own requirements that they have to complete.



Each boy advances at his own pace. Not all strive to reach Eagle, the highest level for Boy Scouting. All the Eagle requirements must be done before the scout's 18th birthday day. After that, there is no going back. Mark managed to finish up all of his just days before his 18th birthday on Aug.1, 2015. Pushing it this close seems to be a common thing anymore as so many kids have so many things in their lives.

One of the biggest requirements is the Eagle Scout Project. This is a hands-on type of project that is to benefit the community in some way. Mark's project was the construction of a tee-pee made from all the different types of logs that are found naturally in Mill Creek Park. The tee-pee is at the Fellows Riverside Gardens family garden area and is intended to be a quiet reading area for children who visit there. Once again we extend many thanks to Al AB8AA and Chris W8FU for being part of the work crew. This could not have come about without your efforts.

After completion of all requirements and merit badges, the scout fills out a form for the Council then asks people he knows to write letters of recommendation for him. These are sent to the Boy Scout Council offices where they have a committee read them and then come out to the troop to conduct an oral board of review that the scout must pass. This is a period of questioning of the scout by this committee. They are looking for certain responses and only the scout and one troop adult leader is allowed in the room with them. Again, WRARC members were instrumental in this process. Al AB8AA and Roy KD8IJF very graciously wrote two of these letters for him and even rewrote them when the Council lost the entire first batch. Many thanks!

Now Mark will have an official Court of Honor in late April where he will receive all the patches, the medal, and letters of commendation from government leaders. It really is a big achievement and if you wish, when you see him next, say congrats! He would be thrilled. Oh, and don't forget to remind him that he still needs to push forward and study hard for his Extra. He's not done yet with what he needs to achieve! In fact, he's just getting started as a young adult (LOL)!

73 to all, Maureen KD8NXS

**Effectively highlights Amateur Radio's preparedness. Great quotes
from Michael, KI1U, from CT and Reid, N1VCU, from VA.**

<http://www.theatlantic.com/technology/archive/2016/03/ham-radio-disaster-preparedness/473598/>

WRARC SCHEMATICS CLASS 3/19/16

Eleven WRARC members met 9:00 A.M., Saturday morning, at ITT in Austintown. Dave, KD8NZF, was the instructor. He was helped by two of our Elmers, Al, AB8AA, and Bob, N8RCM. Those members who came out that cold morning were; Terri, N1TAM; Jane, K8JAA; Nancy, KD8QNY; Maureen, KD8NXS; Mark, KD8YMK; Roy, KD8IJF; Harry, KD8PQK; Joe, W0JO; and Stan, KB3WPD. Dave went over the free software that is available online. MultiSIM BLUE <<http://www.mouser.com/multisimblue/>> was the program we used for this class. The other program he touched on was Eagle. A program developed in Europe.



Dave showed us how to design a simple circuit using MultiSIM BLUE. He showed us where to look for the symbols, in the program, we were going to need to draw a schematic of the circuit we were going to build. Yes, everyone did the same circuit. We all learned how to use the tools provided by MultiSIM.

Dave had a couple pieces of fiber optic cable that he showed us. You held one end up to a light, it was curved, you could see the light at the other end. When I asked how it worked, I went home with homework, look up Total Internal Reflection.

When our design was complete, we were given a bread board with a LN555CN installed, and three resistors, a LED, and a capacitor. We also were given various wires, different colors cut to length, that we were going to need. We learned what a change order is and why it's needed. Using our schematic, and lots of help, we put together the circuit. It actually worked!

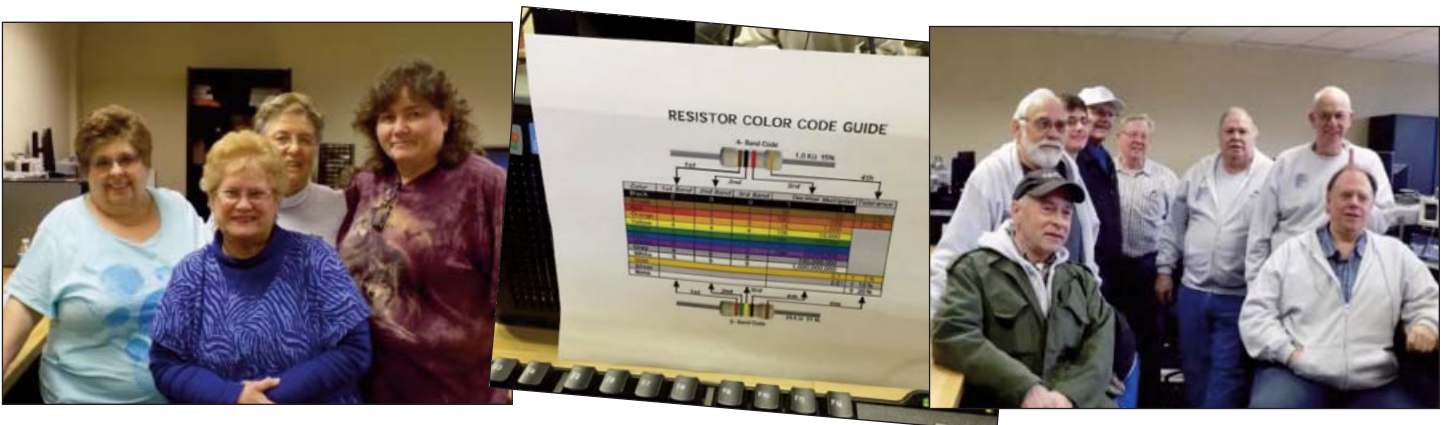
The class wasn't all work, we all had fun and a few laughs. I for one learned a lot, and now wonder, what class we will do next.

73, Jane K8JAA

Total internal reflection is a phenomenon which occurs when a propagating wave strikes a medium boundary at an angle larger than a particular critical angle with respect to the normal to the surface. If the refractive index is lower on the other side of the boundary and the incident angle is greater than the critical angle, the wave cannot pass through and is entirely reflected. The critical angle is the angle of incidence above which the total internal reflection occurs. This is particularly common as an optical phenomenon, where light waves are involved, but it occurs with many types of waves, such as electromagnetic waves in general or sound waves.

When a wave reaches a boundary between different materials with different refractive indices, the wave will in general be partially refracted at the boundary surface, and partially reflected. However, if the angle of incidence is greater (i.e. the direction of propagation is closer to being parallel to the boundary) than the critical angle – the angle of incidence at which light is refracted such that it travels along the boundary – then the wave will not cross the boundary, but will instead be totally reflected back internally. This can only occur when the wave in a medium with a higher refractive index (n_1) reaches a boundary with a medium of lower refractive index (n_2). For example, it will occur with light reaching air from glass, but not when reaching glass from air.

From Wikipedia, the free encyclopedia





MARCH SPECIAL TEST SESSION



There were three people testing at our March special test session, held for our Extra Class which finished February 24. We want to congratulate the two who passed the test they came for. One, Ralph Smalley, KE8DLJ, passed both Tech. and General, and Nancy Brett, KD8RNY, is now an Extra. Congratulations to you both!

VEs that came out to help Allan, AB8AA, contact VE, at the March 2 test session were: Bob McCully, AB8OP; Dave Beatty, KC8WY; Pete Finamore, N8XOE; Roy Haren, KD8IJF and Jane Avnet, K8JAA. Thanks for your help.

Terri and our President, Bob Mitzel N8RCM, stopped by to cheer on our testees. Terri wanted to let us know she now has a new call - N1TAM.

The Western Reserve Amateur Radio Club provides VE exams for all classes of Amateur Radio Licenses on the third Wednesday of each even-numbered month. Exams are held at ITT Tech, 1030 North Meridian Road, Youngstown, starting at 6:30 P.M. Our next Test Session will be April 20. Don't forget the Extra class exam question pool changes the end of June, with new, more difficult, questions. We will have two test sessions in June - June 15, at ITT, and June 25, at our Field Day Site.



The March issue of the Orange County Amateur Radio Club "RF" Newsletter has an interesting Article about Building a CERT and Emergency communication Battery Box. Thought it would interest you - Go to www.wrarc.net/buildanemergencycommbatterybox.pdf to read all about it. It is about 12 pages long.

Tony, W6TNY

SWAP 'N SHOP

FOR SALE

Kachina 505DSP In great shape, original DSP SDR radio,	\$400
Kenwood TS-811A, 440 Mhz All Mode,	\$300
Kenwood SP430 Spkr,	\$ 40
Swan-250 6 Meter radio,	\$ 50

or make offer

Kenwood TS-711A, 2 Mtr All Mode, In original box with mike and manual	\$300
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Gwinstek Function Generator,	\$ 25
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Gwinstek Digital Multimeter,	\$ 25
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Albia Power Supply Dual Variable +15 & -15,	\$ 25
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EZ Oscilloscope 60MHz Dual Channel,	\$ 50
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MFJ-4225, Switching PS, New,	\$ 85
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Mosley CL-33-M 10, 15, 20 MTR BEAM antenna,	\$200
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Nye Viking, MBI-001 Tuner,	\$100
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Vibroplex Bug,	\$ 50
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Misc tower parts, lots contact me if interested. Will accept reasonable offers.

Allan Avnet, AB8AA
E-Mail ab8aa@arrl.net
"www.ab8aa.com"
call or text 330-207-3296

US AMATEUR RADIO NUMBERS CONTINUE TO SOAR

Amateur Radio is alive and well! Growth in the US continued in 2015, with a record 735,405 licensees in the FCC's Universal Licensing System (ULS) database by the end of the year. That's up 9130 over December 2014, a 1.2 percent rise, continuing a steady increase in the US Amateur Radio population in every year since 2007. In 2014, the ranks grew by a net 8149 licensees. The figures, compiled by ARRL Pacific Section Manager-elect Joe Speroni, AH0A, on his FCC Amateur Radio Statistics web pages, exclude expired licenses within the 2-year grace period and club station licenses. Over the past 10 years, the Amateur Radio population in the US has expanded by 72,805 licensees -- or nearly 11 percent. The trend was onward and upward in 2015 for Amateur Radio numbers in the US.

As expected, the biggest growth by license class was in Technician licensees, which rose by 6570 in 2015. Technician licensees still comprise a little less than one-half of the US Amateur Radio population.

General ranks increased by 3079, and Amateur Extra numbers went up by 3496.

The 2015 overall numbers faltered a little in April, before rebounding in July. The introduction of a new General class question pool on July 1 appeared to have only a slight effect on month-to-month numbers in that license class. ARRL VEC Manager Maria Somma, AB1FM, said 2015 was another banner year for ARRL VEC-sponsored test sessions.



[Rick Lindquist, WW1ME, photo]

"For the second year in a row, we have conducted more than 7000 Amateur Radio exam sessions in a year, an important milestone for the ARRL VEC Manager Maria Somma, AB1FM.

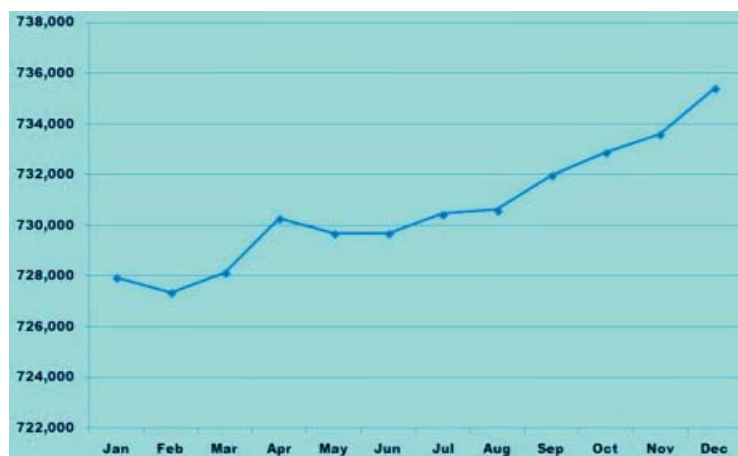
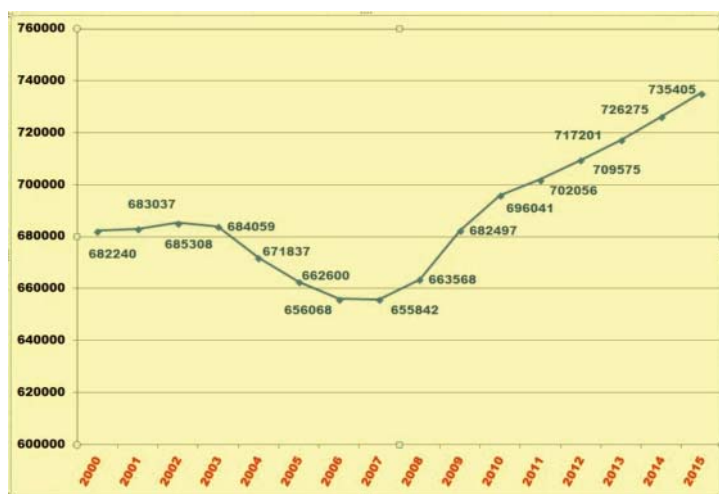
ARRL VEC," she said. "A total of 7358 ARRL-sponsored exam sessions were administered in 2015, compared to 7216 in 2014. The number of exam applicants was down slightly in 2015, compared to the previous year, and the number of examination elements administered also dipped slightly, she noted.

"Since 2014 was a record-setting year, the numbers of 2015 examinees didn't drop so much as return to more typical levels," Somma explained.

As of December 31, some 47,850 Advanced and 10,800 Novice licensees remained in the FCC database. The FCC no longer issues Advanced and Novice licenses, and their numbers continue to decline.

Read more. -- <<http://www.arrl.org/news/us-amateur-radio-numbers-continue-to-soar>>

Thanks to Joe Speroni, AH0A; FCC ULS licensing statistics
The ARRL Letter for March 3, 2016



Failure is simply the opportunity to begin again, this time more intelligently. - Henry Ford

91 YEARS-OLD HAM

UNIVERSITY HEIGHTS, Ohio -- Jack Goldfarb is what's known as an amateur radio operator. It's a shame he's stuck with that descriptive handle for ham radio enthusiasts because, after one has done what he has for so long, the word "pro" should be found somewhere in the title. Unfortunately, the term "professional" is reserved for the radio you hear while driving in a car, or the television signals seen broadcast from a TV station.

Goldfarb, of University Heights, has been talking on his ham radio since he was 16. It was at that age he studied to pass the test given for one to obtain an amateur radio license. And, when did he get that license? "I got my license in April, 1941," Goldfarb replied. "I went downtown (Cleveland) to the FCC office that was in the old post office building. I still remember Mr. Russ was the FCC radio inspector there. "I was the only one there that day. I was the only kid there taking the test."



Now, most certainly one of the worldwide deans of ham radio operators, the 91 year old -- he turns 92 later this month -- remains dedicated to his hobby. He's also not letting time pass him by as Goldfarb is not afraid to take on the latest radio trends. "It keeps my mind active," Goldfarb said.

On the second floor of Goldfarb's home are several pieces of modern radio equipment and two computers. A couple of months ago he took down and sold the 40-foot tower and antenna that had been standing in his back yard the past four decades. The tower allowed Goldfarb to speak with fellow radio operators, or contacts, from Slovenia to Japan. He got rid of the neighborhood landmark because he now uses his radio, in conjunction with the internet, to speak with people abroad.

"Some people say (critically) that that's not radio," he said, "but it is. It is."

On a desk are three radios, two high frequency and one VHF, or very high frequency. Goldfarb can speak to people in Ohio and Pennsylvania with the three radios, minus the computers. In order to reach people in the two states, he has rigged his radio room with what's known as a vertical J-pole antenna. Goldfarb made the antenna, which resembles a wire and was constructed from TV cable.

Goldfarb said one of the biggest differences in ham radio is that participants used to build their own equipment, now they buy most of it. "They used to razz you back then if you didn't make it yourself," he said.

Near his radios is a scanner, from which Goldfarb listens in on police calls from University Heights and South Euclid police. "They use the same frequency," he said of the two departments.

Goldfarb, who for decades, until 1984 owned his own industrial electronic parts company in Cleveland and Solon, has long been enamored of things electrical. "I was always interested in electronics," he said. "When I was in elementary school I would fool around with telephones, automobile horns and light bulbs. I used to build little kits. They were called Heathkits."

Those kits led to Goldfarb building his first transmitter. "I started a radio club in high school, but it only last that one year. When I was gone, it disappeared." Goldfarb graduated from Glenville High School and when the Army and World War II came calling, his radio skills put him in demand.

"They put us on a train at the Terminal Tower and took us to Columbus," he said of himself and his fellow Army recruits in January, 1943. "When we got to Columbus, (Army officers) asked me, 'What hobbies do you have?' "When I told them I was a licensed radio operator, they said, 'We need you, we need you.'"

Goldfarb never saw combat during the war, instead, he taught others to become proficient in operating radios. He and other troops were sent to Europe on the Queen Elizabeth. Of that memory, he said, "It took six days to get there and, I'll admit, I was seasick every day."

Continued page 15

91 YEARS-OLD HAM - CONTINUED FROM PAGE 14

Overseas, he worked teaching Russians radio communications and, two weeks after D-Day in June, 1944, as Allied troops closed in on Berlin, Goldfarb was ordered to set up a phony radio stations to fool the Germans into thinking no advances were being made.

The radios also came in handy after the war. "My brother, Marvin (now a Beachwood resident) is five years younger than me," Goldfarb said. "After the war, he was drafted and was in Europe. My parents and I were able to talk with him there."

A "confirmed bachelor," Goldfarb has been a presence on ham radio for more than seven decades. He enjoys talking with people from all walks of life. "There was a dip in the number of amateur radio operators for a while," he said. "But when they removed the Morse Code part of the testing, more started to get into it again."

The FCC once required that a license applicant be able to copy 13 words in a minute using Morse Code.

"When I was in the Army, I could do 25," he said. Deciphering Morse Code was as easy to Goldfarb as listening to English is to most Americans. He rarely uses it these days, but a wood-based Morse Code tapper, the one he used 70 years ago, still rests by his radios.

On a recent day, Goldfarb demonstrated how he goes about checking the airwaves for contacts. One man, from Medina, talked to Goldfarb, fretting about the new piece of radio equipment he bought, equipment that was not working out as hoped in that he wasn't finding many people with it with whom to converse.

Goldfarb assured the man that, in time, the equipment would pay off. "Thanks," the man said, "I feel a little better about what I bought."

With his experience, Goldfarb does a lot of such coaching with his contacts. It makes him feel all the better about his hobby. And keeping in touch with others is good for his well being.

"When I'm on the radio, when people ask me how old I am, they don't believe it," he said. "My doctor will ask me how I look so young at my age. I tell him, 'If I knew, I would tell everyone.'"

Whatever the magic potion may be, one ingredient that has always kept Goldfarb in touch with his boyhood self, has been his radio.

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STUDENTS BUILD A CUBE\$AT

When I was watching the News one Saturday, it was CBS News on or about March 5. I saw a report about two young school students who built a CubeSat which is set to be deployed in the very near future by the ISS. The story started with "Satellite, built by St. Thomas More Cathedral School, Arlington Virginia students, to be deployed in space." Needless to say I was hooked! The students at this school, have a satellite in space - and they built it themselves, reported by CBS News' Mark Albert.



Building a satellite, even a small one, doesn't come cheap. It cost about \$50,000, and the school and students had to raise every penny. Eleven-year-old Gabriel MacPhail and 13-year-old Rebecca El Choueiry took on this galactic school assignment with gusto. "My thoughts were, 'Wow, this is a big deal and can we really do this?'" MacPhail said. "I was like, 'OK, we can do this. We can do this. 'Cus once you've started, there's no going back,'" El Choueiry said.

It all started nearly four years ago when Felix Pellegrino's dad, Joe, heard about a NASA competition to build small, cube-shaped satellites called "CubeSats." Pellegrino happens to be a NASA engineer . . .

To read the entire story, go to:

www.cbsnews.com/news/cubesat-satellite-nasa-arlington-virginia-school-students-to-be-launched-space 

WOW! - K3LR's SHACK SHOTS



Pictures Stolen from Facebook



Bob Naumann's Pictures

Team K3LR

And the K3LR cafeteria staff:
Chef Sal WM2H, and Sous Chef
Olivia — with Liv Marburger and
Sal Anastasio.

EXPERIENCE THE WORLD'S LARGEST GATHERING OF AMATEUR RADIO ENTHUSIASTS



Hamvention, an Amateur Radio Tradition since 1952, will be held 20-22 May 2016, at the Hara Arena Complex in Dayton, Ohio.

For more information, go to
<<http://hamvention.org/>> please use the navigation menu to visit pages of interest. If you have a specific question that isn't answered on the site, please contact us.

*BIRTHDAYS THIS MONTH*

KD8YYF
KC8SOY
KD8NXR

Jeremy Miller
Stephen Fabry
Kevin Stein

N8YMZ
KD8YFO
N3DZH

David Ruck
Rebecca Davis
Noah Kindl

ARMED FORCES DAY 2016 COMMUNICATION TEST TO INCLUDE DIRECT MILITARY-HAM CONTACT ON 60 METERS

This year's Armed Forces Day Crossband Communication Test on Saturday, May 14, will include a significant new wrinkle: Select military stations will be using 60 meter interoperability channels to communicate directly with Amateur Radio stations on the band. Back this year, select military stations will use crossband Automatic Link Establishment (2G ALE) communication as well as MIL-STD Serial PSK to send the Secretary of Defense Armed Forces Day message. Armed Forces Day 2016 is Saturday, May 21, but the radio event is held earlier to avoid conflicting with Dayton Hamvention, May 20-22.



The annual Armed Forces Day Communication Test is an opportunity to exercise two-way communication capability between Amateur Radio and military stations using a variety of modes, including SSB and CW as well as digital modes. The annual event gives participants -- including shortwave listeners (SWLs) -- an opportunity to demonstrate their technical skills, and to receive recognition from the appropriate military radio station.

The Army, Air Force, Navy, Marine Corps, and Coast Guard cosponsor the joint military/Amateur Radio, with military stations transmitting on military frequencies and listening on Amateur Radio bands. Amateur Radio stations and shortwave listeners interested in trying the MIL-STD Serial PSK mode can download the software program, MS-DMT. Full details about this year's Armed Forces Day radio will be posted by April 12 and will also appear on the US Army MARS Facebook page.

DMR (DIGITAL MOBILE RADIO) GUIDE

[HTTP://WWW.TRBO.ORG/DOCS/AMATEUR_RADIO_GUIDE_TO_DMR.PDF](http://www.trbo.org/docs/AMATEUR_RADIO_GUIDE_TO_DMR.PDF)

Space station astronauts ham it up to inspire student scientists

<http://m.phys.org/news/2016-03-space-station-astronauts-ham-student.html>

NEVEC RELEASES 2016 - 2020 EXTRA CLASS QUESTION POOL



NCVEC Announces Third Public Release of 2016-2020 Amateur Extra Question Pool - The National Conference of Volunteer Examiner Coordinators (NCVEC) has released the third revision of the Amateur Extra class (Element 4) question pool that goes into effect on July 1. This revision supplants the Element 4 question pools released on January 8 and February 5, and includes corrections, modifications, and various editorial changes. The Element 4 question pool diagrams are in a separate document.

"We would like to remind the public that users of question pool documents are free to correct minor typographical or punctuation errors, including obvious minor omissions of same," the NCVEC Question Pool Committee said in releasing this revision. "Such corrections must not cause a change in the meaning of a question or any of the proposed answers to the questions."

The QPC notes that FCC Part 97 rule citations are not a part of the exam question itself, but are included for reference purposes, and that errors in or changes to Part 97 are not considered adequate reason to remove a question from the pool.

The QPC invites comments and questions. -- Thanks to the NCVEC Question Pool Committee

"Fate rarely calls upon us at a moment of our choosing" - Optimus Prime

NPOTA News - stolen from the Morning Message

Wow! I have some Huge news! but, I can't tell you about it yet. I'll give you a hint. Do not miss the upcoming issue of the Ohio section Journal. You don't receive it? No problem! you can read it online at arrrl-ohio.org. You can sign up thee to receive it monthly as well.

This week, I'll be taking my NPOTA program on the road to the Canton ARC Meeting on Wednesday night. I might just give a hint then.

I went out last Saturday to do an activation and was faced with either dead bands. It turns out that I had a bad PL-259 on my antenna cable. I'm just glad I found it while I was close to home. Till next week, Good hunting!

73, DE John, KD8MQ
Affiliated Clubs Coordinator (ACC)

To receive John's Monday Morning Message in your email inbox contact him at:
John Myers, KD8MQ
Phone / text: 330-936-5021
E-mail: kd8mq1@gmail.com
Twitter: [kd8mq](https://twitter.com/kd8mq)



THE AMATEUR RADIO PARITY ACT OF 2015

The Amateur Radio Parity Act of 2015 -- H.R.1301 in the US House of Representative and S-1685 in the US Senate -- would direct the FCC to extend its rules relating to reasonable accommodation of Amateur Service communications to private land use restrictions. US Rep Adam Kinzinger (R-IL) introduced HR 1301 on March 4 with 12 original cosponsors from both sides of the aisle -- seven Republicans and five Democrats in the US House. US Senator Roger Wicker (R-MS) introduced S 1685 on June 25, with Senator Richard Blumenthal (D-CT) as the original cosponsor, into the US Senate.



The Amateur Radio Parity Act would require the FCC to amend its Part 97 Amateur Service rules to apply the three-part test of the PRB-1 federal pre-emption policy to include homeowners association regulations and deed restrictions, often referred to as "covenants, conditions, and restrictions" (CC&Rs). At present, PRB-1 only applies to state and local zoning laws and ordinances. The FCC has been reluctant to extend the same legal protections to include private land-use agreements without direction from Congress.

H.R. 1301 recently had a hearing before the House Energy and Commerce Committee's subcommittee on Communications and Technology. Rep Greg Walden, W7EQI (R-OR), chairs the subcommittee. A Committee mark-up session and vote will be scheduled shortly. S 1685 has passed the Senate Commerce, Science and Transportation Committee's subcommittee on Communications, Technology, Innovation and the Internet, which is chaired by the bill's sponsor, Wicker. Full consideration has not been scheduled yet.

ARRL members are urged to contact their members of both the House and the Senate, asking them to sign on to the bill as a co-sponsor. Route letters for your member of Congress to:

ARRL
Attn Amateur Radio Parity Act grassroots campaign
225 Main St
Newington CT 06111

Listen to this: <https://www.youtube.com/watch?v=AMY-5U1cJ6E>

Clarity on Amateur Radio Parity

Some misconceptions about the Amateur Radio Parity Act are being circulated. Please read the document "Clarity on Amateur Radio Parity" here.

<<http://www.arrrl.org/files/file/Regulatory/Clarity%20on%20Parity.pdf>>

FIRST SOLID-STATE TRANSMITTER TO SPAN THE ATLANTIC NOW PART OF ARRL HISTORICAL COLLECTION

02/22/2016 - A flea-powered transistorized ham transmitter built in the 1950s and used to make a transatlantic contact has become part of the ARRL Historical Collection. The noteworthy historical artifact was donated by Andy Stewart, KB1OIQ, on behalf of the estate of Gus Fallgren, W1OG (SK), the ham at the key for the momentous event. Fallgren — then W1OGU — and two other Raytheon Engineers, Al “Hank” Hankinson, W1OSF, and Dick Wright, W1UBC, built the little transmitter in the summer of 1956 on a lark, to see if they could achieve Work All Continents (WAC) with it. The 20 meter, 78 mW transmitter was designed around a pair of Raytheon 2N113 transistors — one as a 7 MHz oscillator, the other as a frequency-doubling power amplifier. On September 18, 1956, Fallgren, in Chelmsford, Massachusetts, running the transistor transmitter into a 3 element wide-spaced Yagi, worked OZ7BO in Copenhagen, Denmark. His signal report was 339.

The transmitter was the first to run Raytheon transistors on 20 meters. Hams had previously constructed low-power, solid-state transmitters for 40 meters and made contacts spanning up to 800 miles. Fallgren’s 3800-mile contact worked out to approximately 47,500 miles per watt. Raytheon documented the historic contact in the February 1957 edition of Radio and Television News — with a feature banner and cover photo of W1OGU in his shack with the battery-powered transistor transmitter — and it was reported in other publications as well, including Raytheon’s own publication and the Boston Globe. A November 1956 QST “Stray” reported that Fallgren had “worked KP4, TI2, OZ7, and G3, and has reportedly been heard in VK” with the little rig and included a photo.

Assistant ARRL Laboratory Manager, Bob Allison, WB1GCM, staff liaison to the ARRL Historical Committee, accepted the donation.

“We are all delighted that this well-documented transmitter was donated to the ARRL Historical Collection,” Allison said. “It tells the story of its important role in the development of Amateur Radio technology. The ARRL wishes to thank Andy Stewart, KB1OIQ, for arranging this donation.”

The donation to the ARRL’s collection of Amateur Radio historical artifacts consists of the original transmitter and a 7.013.4 kc crystal, the Vibroplex bug used for the contact, W1OGU’s station log documenting the contact, newspaper clippings reporting the event, and other ephemera associated with the DX feat.

The transmitter will be placed on display in the ARRL Laboratory, along with the bug, station log, and the issue of Radio and Television News with Gus Fallgren on the cover.

The ARRL Letter for March 3, 2016

SUPPORTING DISASTER COMMUNICATIONS FROM SPACE

A photo of two members of Virginia Tech’s Hume Center for National Security and Technology’s staff working to build radio antennas that will work to assist amateur radio operators in disaster response.

Hume Center Director of Research Robert McGwier (right) and research associate Zachary Lefke are building radio antennas that will be used in the Virginia Tech Ground Station. Photo Credit: Virginia Tech

Conventional lines of communication can be impacted after a disaster. This we know. Phone lines can go down, cell service can be overrun with calls, texts, and emails and it can be difficult for survivors as well as first responders to get in touch. This isn’t a far-fetched scenario or intellectual exercise. It’s a reality we’ve seen happen over and over during disasters small and large.

Enter Amateur Radio—or what those involved in the hobby refer to as “Ham radio.”

Amateur radio enthusiasts—or “Hams” as they’re often called—often step in during emergencies to help bridge communication gaps between first responders to keep people safe when smartphones, cell towers, and internet technologies we rely on every day go down. Volunteer Hams also serve as a valuable source of information during the initial states of an emergency. Often, Hams provide this public service in association with volunteer groups like Community Emergency Response Teams, who are always ready to spring into action quickly and effectively.¹

We owe it to these volunteers to do everything we can to support their work to help communities *Continued page 20*

COMMUNICATIONS FROM SPACE - CONTINUED FROM PAGE 19

bounce back when disaster strikes. That's why we've partnered with the American Radio Relay League and researchers from Virginia Tech's Ted and Karyn Hume Center for National Security and Technology in Blacksburg, Virginia—one of the leaders in amateur radio technology—to develop a new communications satellite that will help amateur radio operators transmit radio signals across the United States 24 hours a day, 365 days a year. After all, disasters can happen any place and any time.

With this new satellite, scheduled to launch in 2017, Hams involved in supporting disaster communications will have a more reliable connection and a new level of capability in their communications.² Right now, radio signals used by amateurs must often be bounced off the ionosphere to accommodate communication over long distances. Unfortunately, this type of radio propagation isn't reliable because signal reach and quality can be impacted or even halted by space weather events like solar flares and geomagnetic storms.² This satellite is unique because it will provide another layer of support for emergency services by providing a dedicated communications hub for Hams orbiting above the U.S. in geosynchronous orbit every day. It will help emergency managers deployed to disasters support long-term communications for first responders on the ground—and become another invaluable tool at their disposal.²

Amateur radio operators have come to the rescue on more than one occasion—like during Hurricane Sandy—when landlines and cell phones were left out of commission throughout New York and New Jersey.

Hams also made a difference in 2013, when Colorado was hit with historic flooding. As floodwaters ravaged areas across the state, they threatened a wastewater plant that served over 80,000 people. Volunteers from the Amateur Radio Emergency Service—the American Radio Relay League's disaster communications arm—leapt into action, creating a network to monitor the situation and collect data. As a result, they were able to take remote control of the facility and helped prevent any wastewater from spilling out with the floods.³

This new partnership with Hams will help make our communities more resilient, and we look forward to a successful launch.

Author: Rafael Lemaitre

Take time to laugh for it's the music of the soul Author: --From an old English prayer

Some Random Thoughts -

- I changed my car horn to gunshot sounds. People move out of the way much faster now!
- I don't like making plans for the day because then the word "premeditated" gets thrown around in the courtroom.
- I decided to change calling the bathroom the John and renamed it the Jim. I feel so much better saying I went to the Jim this morning.
- Last year I joined a support group for procrastinators. We haven't met yet...
- I don't need anger management. I need people to stop irritating me!
- Old age is coming at a really bad time!
- When I was a child I thought Nap Time was a punishment... now, as a grown up, it just feels like a small vacation!
- The biggest lie I tell myself is... "I don't need to write that down, I'll remember it."
- My people skills are just fine. It's my tolerance of idiots that needs working on.
- If God wanted me to touch my toes, he would've put them on my knees.
- The kids text me "plz" which is shorter than please. I text back "no" which is shorter than "yes."
- I'm going to retire and live off of my savings. Not sure what I'll do the second week.
- I've lost my mind and I'm pretty sure someone took it!
- Even duct tape can't fix stupid... but it can muffle the sound!
- Why do I have to press one for English when you're just gonna transfer me to someone I can't understand anyway?
- Of course I talk to myself, sometimes I need expert advice.






April 2016

PREPAREDNESS LEADS TO READINESS - MATT W8DEC



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	3/28 National Black Forest Cake Day				1 WRARC Net 9:00PM 145.270 	2
3	4 Tell a Lie Day	5	6 Skywarn Net 8:30 P.M. 146.745	7	8 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	9
10	11 ARES Net 8:30 PM 146.745 PL 110.9	12 Ham Breakfast Eat'n Park Boardman 8:30 A.M. Board Meeting Eat'n Park Austintown 7:00 P.M.	13	14	15 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	16 Start National Parks Week 
17	18 National Columnists Day So Write One For the NL	19 WRARC Meeting 7:00P.M	20 Testing @ ITT 	21	22 WRARC Net 9:00PM 145.270 	23  WaveBender Articles Due
24 End National Parks Week 	25 ARES Net 8:30 PM 146.745 PL 110.9	26 Eat'n Park Boardman 8:30 A.M. Ham Community Breakfast	27	28	29 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	30