



The Wave Bender

January 2017



WRARC PREZ SEZ

I sit here tonight thinking over the past year, at times it seems to have gone by so fast, and at other times it has really dragged by. Through this year the circle of life has continued relentlessly, friends have been lost and new lives entered the world as it has happened for centuries. Life constantly evolves and yet remains the same except for the players involved.

Our club is much the same as life; it was started by a dedicated group of people striving for something better for them, a group held together by a love of Amateur Radio. Time goes by, and our club is evolving, some member's enthusiasm wanes, and new members join and bring with them a new perspective, new ideas, and at times, a new way of doing things. Because something is new or unfamiliar, does not make it bad. Because something is different does not mean it should be rejected without careful scrutiny.



I know that my way of running the club is different from the way Al did, or Roy did, and I hope that as I leave office, when my term is up, WRARC will still be a strong and vibrant group of people as good as or better than when I was elected.

I am proud to say that I am a member of the Western Reserve Amateur Radio Club, and I hope you are also. We have a great club which is a reflection of the members that make it up.

I just presided over our last official function of 2016; our monthly meeting which consisted of a mix of good food, good friends, laughter and of course, talk of radios and antennas. Our Vice President surprised us with a very nice musical interlude in place of the normal speaker which was a very nice change and set a very cheery atmosphere for the meeting.

At this point, I feel that I would be remiss in not taking the time to thank all the members of the club that put their faith in me, putting me in a position to lead WRARC. The officers, who do so much and usually without much fanfare, or recognition for the important work they do in making everything run as smoothly as it does 99% of the time. The board members, some of which wear many hats and put in a lot of their free time helping with all the things our club does. Our trustees who also wear several hats, and are tasked to help with things that come up unexpectedly and usually have to be handled right then, and someone always steps up to help and make sure we get it done.

I guess basically what I am saying is that without every member of the club helping in their own special way we would not be the quality club we are, and are continuing to evolve into. It is with sincere appreciation that I thank each and every one of you for everything you have done this past year helping our club to be what it is.

Finally in closing I would like to wish everyone that reads our newsletter a very Merry Christmas, and a safe and Happy New Year.

I plan on continuing to try and build greater co-operation in the coming year with the other clubs in our area, and want to extend the same good wishes to them and their members as we close out 2016 and start a brand-new year in 2017.

73, Bob N8RCM

2017 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:**

Russ Williams NR8W	nr8w@wrarc.net
Darrin Cannon, N8DMC	n8dmc@wrarc.net
Roy Haren, KD8IJF	kd8ijf@wrarc.net

Appointed Positions:

Social: Maureen Stein, KD8NXS
kd8nxs@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

Historian: Rose Marko, KD8TII
kd8tii@wrarc.net

Badges: Al Avnet, AB8AA ab8aa@wrarc.net

Facebook: Terri Mitzel, N1TAM
n1tam@wrarc.net

Chris Monske, WF8U
wf8u@wrarc.net

Harry Harker, KD8PQK
kd8pqk@wrarc.net

Officer's Meeting:

January 10, 2017, 7:00 P.M. At Eat 'n Park,
Austintown, Eat 'n Park,
5451 Mahoning Ave
All members welcome

After the Holidays & Annual Meeting:

January 8, Davidsons
3636 Canfield Rd., Cornersburgh



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

OTHER IMPORTANT WEB SITES

For the ARRL searchable Hamfest calendar,
<<http://www.arrl.org/hamfests-and-conventions-calendar>>

The ARRL exam search page
<<http://www.arrl.org/find-an-amateur-radio-license-exam-session>>

Ohio Single Sideband Net
<<http://www.ossbn.org/index.html>>

FREE TO GOOD HOME

2014, 2015, 2016
QST MAGAZINES

CONTACT AL
AB8AA@ARRL.NET



FROM OUR VP



We ended up our year with something different at our last monthly meeting. Our guest was Joe Natoli, from Howland, who demonstrated and entertained us with holiday music on the Roland FR-8X digital V-accordion which produces an infinite number of very realistic sounds like pianos, strings, horns and, obviously, numerous accordion sounds. Joe earned both a Bachelor's and Master's Degree in music composition on the free-bass accordion from the University of Toronto and has won many national and international accordion contests. If you search his name, "Joe Natoli Accordionist" on YouTube, you'll find many videos of his performances of all types of music including classical, pop and jazz. I posted a brief video of him performing "Have Yourself a Merry Little Christmas" on our FaceBook page. Many thanks to him for sharing his time and talents with us.

Please mark your calendars for Saturday, May 6, 2017. We have confirmed that DX Engineering, 1200 Southeast Avenue, Tallmadge, OH 44278, will host the Western Reserve Amateur Radio Club on that day from 9:00am EDT to 11:00am EDT at their new showroom. Coffee and donuts will be served and our members will have the opportunity to "test-drive" the latest amateur radio gear along with some good deals on other equipment and accessories. Our appreciation for this event goes out to Tim Duffy, K3LR, their Chief Operating Officer and General Manager and Teri Grizer, K8MNJ, their Special Projects & Promotions – HamFest/DXPeditions Coordinator.

There will be no regular monthly meeting in January, but we will be having our annual After the Holidays dinner meeting, and to install officers for 2017 on Sunday, January 8, 2017 at 3:00pm at Davidson's Restaurant, 3636 Canfield Road, Canfield, OH 44406. If you plan on attending, please contact Maureen Stein, KD8NXS, at (330) 398-1303, or mfstein@zoominternet.net as she needs a head-count to give to the restaurant by 12/26. We will order off the regular menu and will also have door prizes.

Our next regular meeting will be on Tuesday, February 21, 2017. On behalf of your club officers and trustees, we look forward to having another great year in 2017 and welcome and encourage your participation. Wishing all of you a happy, healthy and prosperous New Year in 2017.



73, Joe, W0JO
WRARC/VP

AFTER THE HOLIDAYS ANNUAL DINNER MEETING AND INSTALLATION OF OFFICERS

Time is going by so quickly. It will already be the New Year when you are reading this, or nearly so anyway. I hope everyone had a really nice holiday and I send out my best wishes to all for a very happy New Year. Coming right up in this new year is our annual after the holiday's dinner meeting. It is on Sunday, January 8, 2017, at 3:00 P.M. at Davidson's Restaurant. We will be doing the same thing that we did last year - everyone orders individually from the menu and each family or individual attending pays their own bill to the restaurant. There will be no up-front cost for a buffet style dinner.

We are now upon the time when I have to give Davidson's a head count so that they can have the proper amount of staff scheduled. If you have not already signed up or contacted me and are planning to attend, please get in touch with me at 330-398-1303 ASAP so that I can have as accurate a count as possible. I hope to see you all there! It really is a lot of fun. We are having a basket raffle with some really nice prizes, so remember to bring a little extra cash with you. There will also be the regular 50/50 as well - Join us!

73 Maureen, KD8NXS



WHAT'S COMING UP?

Happy 2017

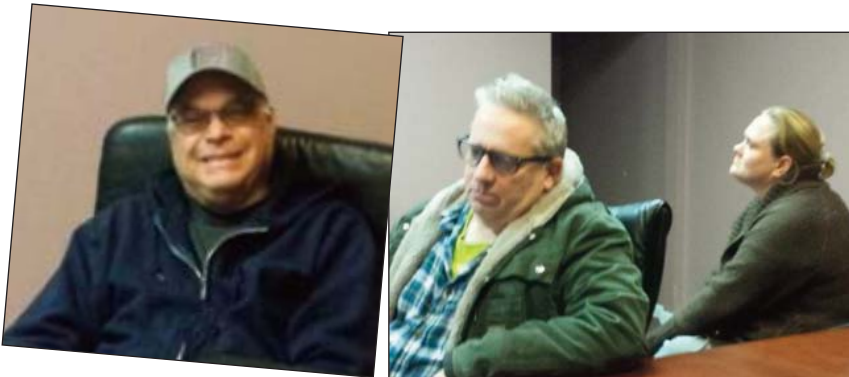
Jan. 07	Orthodox Christmas Day YL Breakfast @ Landmark in Boardman
Jan. 08	After the Holidays Annual Dinner meeting 3 P.M.
Jan. 10	Board meetings are open to all interested members.
Jan. 17	NO REGULAR MEETING
Feb. 14	Board Meeting
Feb. 15	Testing
Feb. 21	Members Meeting
May 06	WRARC Day at DX Engineering



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

DEC.21 TEST SESSION

WRARC Test sessions are over for 2016 and we now have two new General Licensed Hams and one new Technician. Albert (Rocky) LeRoy, KE8ENM, and John Ricci, KT8TAT, both passed their General, both came out of Bob's class, and Kescha Ayres passed her Tech. Unfortunately I don't have her call. Too close to Christmas I guess. Congratulations to the three of you.



Those VE's helping Al, AB8AA, contact VE with the test session were Bob, N8RCM, Terri, N1TAM, and Jane, K8JAA. Thanks for your help so close to Christmas. Thank you Terri for the pictures.

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

Avnet, Allan AB8AA

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

ab8aa@arrl.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
harens@juno.com
rwiliams@neo.rr.com
w0jo@arrl.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 on the 20th each month. Please send your articles to: k8jaa@arrl.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

Join us for the WRARC Friday night Net 9:00 P.M.

KD8DWV - 145.270, PL -110.9

Upcoming Net Control Operators

Jan. 06 Bill, KD8HCQ
Jan. 13 Brian, AD8BL
Jan. 20 This could be you
Jan. 27 Rose, KD8TII

Feb. 03 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)

ARES thanks 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

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

Thanks & 73

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; AB8AA, W6UMH, KB6MYR, N8SY, W5YI, The Ohio Section Journal, the ARRL and the World-Wide Web.

A NOTE FROM ROSEMARY

'Tis the season of new beginnings, and I am proud to be a part of this new year.

I have enjoyed immensely working alongside all the board members in our first term and hope our second term is just as successful as the first because they are a great group of people.

They have given me the support, and insight into what my job, and what the Club is all about. This Club is about commitment, cooperation and support in learning what it takes to be an Amateur Radio Operator.

Besides just attending the meetings, you can learn the mechanics of using your radio from the Elmers from our Club and other clubs around the valley. They do test equipment workshops, help you build whatever you want radio-wise, or answer any questions you may have about Ham radios.

They also do test sessions for obtaining your technician, general and extra class licenses. I started the third chapter in my life as part of the Club the last two months, November and December, by attending the General class sessions to get my General Class License. It was an uphill battle for me, because I waited four years to try for it. Whether or not I passed the exam, it was worth the effort and I will continue to strive for it until I succeed. Hopefully that won't take too long.

In closing, I hope everyone has a Happy New Year, and hope to see you in the field.

73 Rose, KD8TII



DECEMBER YL BREAKFAST

The first Saturday of each month WRARC YL's get together for Breakfast and fun conversation at 9A.M. Not always WRARC related, but we are Ham-etts. Although WRARC YL's started this event, we welcome all YL's and interested ladies in the valley to join in the fun. You don't have to be a member of WRARC. In January we will meet at Landmark in Boardman. We like trying different places.



2016 HOLIDAY PARADE & CHRISTMAS TREE LIGHTING!



Photo courtesy of Youngstown CityScape and David Pokrivnak

The holiday season in Downtown Youngstown opened on Friday, December second. The festivities began on the Central Square and 20 Federal Place at 4:30 P.M., followed by the annual parade at 6:00 P.M..

Amateur Operators from the Mahoning County area helped ARES with communication chores such as keeping the parade officials up to date on changes in the parade order. The operators on hand for the Christmas Parade included: NCO Doug KB8TPG, Alan KE8ADY, Dave KD8NZF, Dean W8YSU, Frank WB8YHD, Joe W0JO, John KA8YTS. Mike KA8WMF, Nancy KD8QNY, Randy W3PCF, Rich

KB8GAE, Roy KD8IJF, Rocky KE8ENM and Stan KB3WPD.

Thanks to all for your help with another successful parade.

73, Nancy, KD8QNY

"You cannot do a kindness too soon, for you never know how soon it will be too late."

SWAP N'
SHOP

Cushcraft Model XM-520 20 Meter 5 El Beam	\$200
Yarsu FT-757GX-II HF Radio	\$250
Kenwood SP-430 Speaker	\$ 25
Nye Viking, MBI-001 Tuner,	\$100
Sencore TF151, Transistor tester	\$ 15
Shure model PE515, Microphone	\$ 15
Shure model 444D, Microphone	\$ 15
AEA model QT-1, Antenna tuner	\$ 25
Radio Shack 2 meter HTX-202	\$ 25
Astron Power Supply Model RS-20M	\$ 50
Heathkit VTVM Model IM-11	\$ 25
Variable Voltage Power Supply +18 and -18	\$ 20
Digital Multimeter	\$ 15
Pyramid Power Supply model PS-25	\$ 50
Brand new in the box Icom IC-2720H	
Dual Band FM/CVR	\$125 SOLD

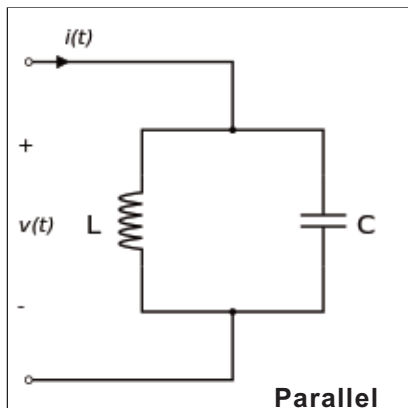
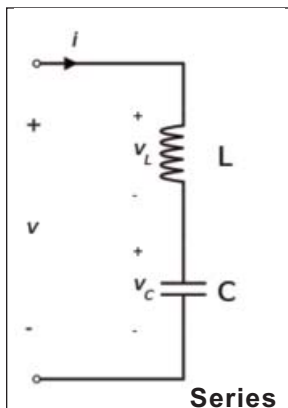
Misc tower parts, lots contact me if interested. Will accept reasonable offers.

Al, AB8AA, 330-207-3296 or ab8aa@arrl.net

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FREQUENCY MULTIPLIERS - CONTINUED FROM PAGE 8

Tank circuits are named for an interesting effect that occurs when you put an inductor and capacitor in parallel.



C2 is the capacitor and L1 is the inductor. We can tell they are in parallel because they are mounted side by side. (series would be in a line)

When they are in parallel, if the tank is hit with a pulse it will “ring.” Ring means produce a sine wave at a frequency determined by the values of the inductor and capacitor. We can pick values of L and C to tune it to whatever frequency we want, in this example, 2 MHz.

To summarize, the input to the circuit is a 1 MHz sine wave, turned into a pulse by Q1, and restored to a 2 MHz sine wave by the tank. Pretty darn cool!

Ok let's get real techy for a couple minutes. Capacitors and inductors store energy, capacitors in the form of a charge and inductors in a magnetic field. If we connect the parts in parallel and apply a pulse to it, the capacitor charges. If you look at the wave shape of a pulse, it is there for a moment then goes away until the next pulse. During the time the pulse is gone, the capacitor discharges. Since the inductor is right beside the capacitor, the discharge goes into the inductor and charges its magnetic field. But the magnetic field can only be maintained while the cap is discharging. Once the cap is drained of its charge, the fields on the inductor collapse and create a discharge current out of the inductor. Since the cap is right beside the inductor, this current recharges the cap. But once the magnetic fields are drained, the cap once again discharges into the inductor, and the back and forth continues. Each time the parts discharge and charge, they lose a little energy, so the charges and fields are getting smaller until they will finally stop if we wait long enough. When these circuits are taught, the back and forth current is called a recirculating current and an analogy is made to water swishing back and forth in a water tank if it is agitated, hence the name tank circuit.

The loss of energy each time we swish is what limits us to a practical maximum of 5 for multiplier circuits, beyond that the signal is just too small to work with.

Now that we have a grip on a Doubler, what should we do to the circuit to turn it into a Tripler? Hope you said change the value of C2 and L1 to retune the tank to 3MHz.

Next time let's update our circuit to the digital age with a Phase Locked Loop to do the multiplying.

73 Dave, KD8NZF



A friend gave me a drone with a camera in it, if anyone wants a photo or video of their antenna or tower, they can contact me at this email address.

<k2grg@outlook.com>

Greg Jackson, K2GRG

SALT WATER DUMMY LOAD

Cheap and Simple

I don't know if any of you have ever wondered if there was an easier and cheaper way to build or acquire a dummy load for your amateur radio equipment.

I have purchased several different types of dummy loads at various hamfests. I have some that are just large carbon resistors capable of around 100-150 watts. I also have 2 of the cantennas which consist of a metal can with a gang of resistors immersed in oil. All of these dummy loads work just fine. However, some drawbacks of these dummy loads are:

1. They are rather expensive for my limited budget
2. These resistive loads can and do burn out with use
3. Oil filled dummy loads invariable begin to leak and you end up with a puddle of oil on the ground
4. Sometimes I need to be able to tune a 1kw amp on a dummy load and the smaller ones can't handle the wattage.

Well, here is the solution!

It is possible and actually very simple to construct a dummy load using the resistance in salt water.

All you need are some really basic items:

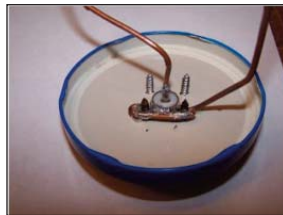
1. a good size glass jar
2. Some 10 guage or any heavy guage wire
3. an so239 coax connector
4. Drill and soldering iron

All you have to do is bolt the so239 to the lid of the jar. Solder the electrodes to the so239, and then use an MFJ or other brand antenna analyzer to monitor the resistance and SWR as you begin to add the salt to the water. Begin with a small amount of salt. For a gallon jar, begin with about 1/2 teaspoon. Be sure to mix well before testing. Below you will find step by step pictures of the project:

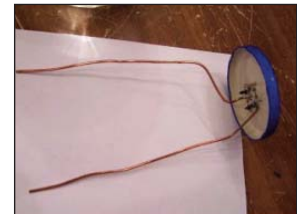
The finished Salt Water Dummy Load



Solder the copper electrodes to so239



Make sure copper electrodes are long enough to reach to the bottom of jar.



Add salt slowly to the water in the jar.



SALT WATER DUMMY LOAD - CONTINUED FROM PAGE 10

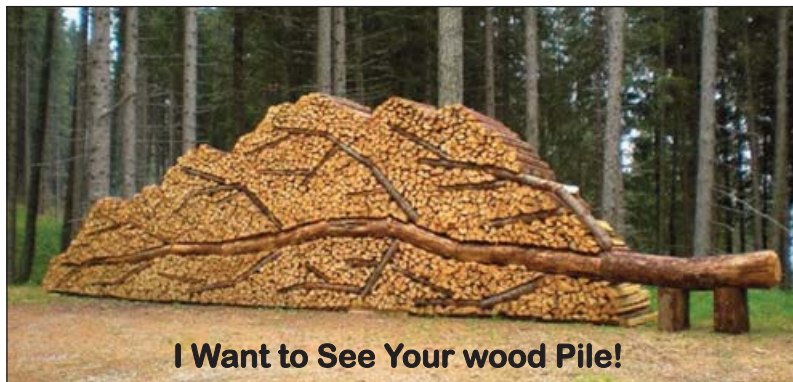
Slowly bring the solution up to 50ohms and 1:1 SWR

The first time I added the salt too fast and went way beyond 50 ohms. All I had to do is pour it out and start with fresh water. If you only go a little too far, you could just pour out a little water and add some fresh.

So far, I have been very pleased with the operation of the dummy load. I hope that this information will be of interest or help to others. Very simple and cheap to build.

Happy Hamming from ND4jS Jay

From the internet



I Want to See Your wood Pile!

AMATEUR RADIO PARITY ACT BILL UNABLE TO OVERCOME FLORIDA SENATOR'S OBJECTIONS



The Amateur Radio Parity Act, H.R. 1301, suffered an unbecoming demise on December 9 as the 114th Congress drew to a close. After passing the House of Representatives on a unanimous vote earlier this fall, the bill stalled in the Senate due to the intervention of only one member, Sen. Bill Nelson (D-FL). The measure would have directed the FCC to extend its rules relating to reasonable accommodation of Amateur Service communications to private land-use restrictions, such as covenants, conditions, and restrictions (CC&Rs) imposed by homeowners associations.

"[During 2016] Nelson received thousands of e-mails, letters, and phone calls from concerned constituents asking for his support of H.R. 1301. Numerous meetings were held with his senior staff in an effort to move the legislation forward," ARRL said in a news release. "Negotiations, which led to an agreement with the Community Associations Institute (CAI), the national association of homeowner's associations and publicly supported

by CAI and ARRL, were brushed aside by Sen. Nelson as irrelevant."

In a final meeting with Nelson's staff as the 114th Congress neared adjournment, it became clear that no matter what was said or done, the Senator would oppose the bill and refuse to allow it to move forward. Because the measure had not been put on the floor schedule, the only way it could have passed the Senate would have been through a process called "unanimous consent." A Senate member may request unanimous consent on the floor to set aside rules and expedite proceedings. If any single Senator objects, though, the request is rejected.

The unhappy ending followed nearly 2 years of intense effort on the part of ARRL and thousands of its members, who contacted their Congressional representatives to urge their support of the measure on Capitol Hill. The ARRL Board of Directors is expected to discuss the future of the initiative at its January meeting.

IARU CONTINUES PREPARATIONS FOR WORLD RADIOCOMMUNICATION CONFERENCE 2019

12/08/2016



Work is already under way by the International Amateur Radio Union (IARU) to address agenda items of interest to Amateur Radio during the run-up to the 2019 World Radiocommunication Conference (WRC-19). The International Telecommunication Union (ITU) convenes WRCs every 3 or 4 years in Geneva; the last WRC was in 2015. The IARU's prime focus is spectrum privileges — gaining or retaining spectrum for the amateur radio services and spectrum protection — making sure that amateur spectrum remains available for use and free from serious man-made interference. The IARU works within international standards organizations and with regional telecommunication organizations to accomplish its goals.

In the past month, IARU representatives have attended the European Conference of Postal and Telecommunications Administrations (CEPT) Electronic Communications Committee (ECC). This is CEPT's policy-making body and just one of the many CEPT committees at which the IARU has a seat at the table. IARU was also present at ITU Working Parties under Study Group 5 (SG5), which is charged with studying matters related to terrestrial radiocommunication services. Working Party 5A met November 7-17, preparing for WRC-19 with a focus that included the Amateur Radio services. The panel:

“ Completed revisions to Recommendation ITU-R M.1732 dealing with parameters to be used in sharing studies regarding the compatibility of Amateur Service operations with other radio services, mainly in the 50–54 MHz band. It also generated four liaison statements to other groups. “Liaison statements” are how working parties alert each other to matters of common interest.

“ Continued work on sharing and compatibility studies required for WRC-19 Agenda Item 1.1, which addresses an Amateur Radio allocation at 50–54 MHz in ITU Region 1 in common with those already available in Regions 2 and 3. Sharing studies consider criteria under which spectrum can be shared among different radio services.

“ Addressed other WRC-19 agenda items that could impact the Amateur Service.

“ Updated the WP5A web document, “Guide to the use of ITU-R texts relating to the Amateur and Amateur-Satellite services.”

“ Reviewed liaison statements from other ITU working parties on topics of relevance to the Amateur Services and generated some liaison statements of its own.

IARU will continue to be active in ITU and regional telecommunication organizations as preparations go forward for WRC-19. In the coming weeks, IARU plans to participate in CEPT's Conference Preparatory Group for WRC-19 and in its Project Team meetings.

WRC-19 will take place in Geneva from October 28 to November 22, 2019.



BIRTHDAYS THIS MONTH

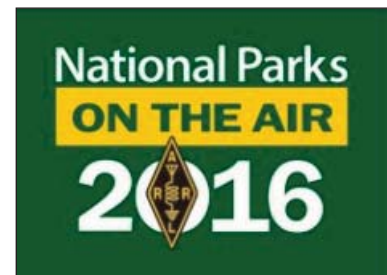


W0JO Joe Wojtowicz
KD8YMI Candy Davis
NR8W Russ Williams
KD8YZE Frank Crozier

KD8PBW Ted Baylog
KC8WY Dave Beaty
KD8DWV Liz Beaty
KC8WUX Mike Austin

NATIONAL PARKS ON THE AIR UPDATE

The ARRL National Parks on the Air (NPOTA) program is on the verge of making history. With less than 2 weeks to go until the program concludes on December 31, NPOTA Activators have made more than 995,000 contacts from National Park Service units this year, and it appears certain that the count will top 1 million before year's end.



National Parks on the Air has proven to be one of the most successful and popular on-air activities ARRL has ever created. Tens of thousands of radio amateurs made at least one contact with an NPOTA Activator in 2016, and nearly 1,400 Activators went out and transmitted from a park. One million contacts from portable operations -- many of them using under 100 W and simple wire antennas -- is an amazing feat. Congratulations to every NPOTA Activator who hit the trail this year and helped NPOTA to reach its goal!

But the fun isn't over yet! More than 30 NPOTA activations are scheduled through the end of 2016, including Fort Scott National Historic Site in Kansas, and the Amistad National Recreation Area in Texas. NPOTA Activators have promised a burst of activity all across the country in the final week, especially all day on Saturday, December 31. Work as many NPOTA stations as you can!

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).

Way cool video with music.

Tired of boring car ads? This Russian one is great!

**The U.S. Car Manufacturers make 'zillions' of boring car commercials,
and most of us have to 'mute' the hyped sound.
The Russkies make one commercial a year, 3 minutes long, and this is it.
Very classy! _This is an amazing car ad on ice.
You'll like it. And at the end they
actually give credits and the drivers bow in their car_**

[http \[1\]://www.youtube.com/embed/ rv7d6hj5UIA \[1\]](http://www.youtube.com/embed/rv7d6hj5UIA)

FREEZE YOUR ACORNS OFF

Get Out Of The House!

Each year, Several PCARS members gather on a cold Saturday in February to thumb their noses at mother nature. This year is no different - February 1, mark your Calendars.

Our purpose for this insanity? To have fun, and to prove that we are all lunatics! We've had as much as a foot of snow on the ground during this event, but even that isn't enough to deter these intrepid souls from their task of making as many QRP QSOs as possible while trying not to freeze their extremities off. These Hams need your Help - Contact them!

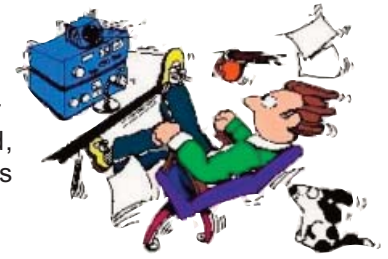


This Years event is exped to be brutal, with the temps peaking in the mid 20's in the AM, then dropping throughout the rest of the day. No one will freeze anything off that we know of, and a lot of fun will be had. Will we do it again next year? You bet!

SECOND ANNUAL OHIO ARES VHF SIMPLEX CONTEST

ANNOUNCING >> The Second Annual Ohio ARES VHF Simplex Contest!
January 14, 2017.

After a lot of requests, we are opening this up to 6 meters as a part of your score as well! There is a lot of potential for wide-area coverage on that band, and we need to cultivate some interest- so, for the sixers out there, burn eggs on your beam!!



Some questions, and answers:

- On the bonus situations, the EOC bonus is exactly what it says- operation must be from an EOC, not a nearby trailer or remote location. EOC ops, add 50 points to your total contact score. Operation from any portable location (trailer, tent, park bench, igloo) is 100 points added to your total contact score. Contact an ARES officer of any type, add 5 points to that contact (in other words, if your contact says he's an EC, it's worth 6 points.)
- On digital. All modes are open, we've had some questions as to "which" mode. Any of the modes commonly accepted for NBEMS work!
- Frequencies haven't been mentioned. Grab any you like- if your district has a prescribed simplex frequency, try that first. Anything except a repeater. Make sure you get the county or location of your contact- the whole point is to be able to plot your best coverage area. Look for "real" signal reports.
- You know what? If you get bored and want to fry some eggs on your six-meter antennas, go for it. DO INCLUDE your six contacts in your score!
- HAVE FUN!

Here are the rules again!

Purpose - ARES is tasked with being able to provide communications "When all else fails" Local communication is critical and typically takes place on the VHF or UHF amateur band. In order to improve our ability to perform on these bands, Ohio Section ARES is sponsoring the ARES VHF Contest (Yeah, we know, but calling it the Ohio VHF / UHF Contest got a little long-winded). Participants in the contest are encouraged to make as many contacts as possible within the time-frame of the contest, with as many different geographical locations as the bands permit. The contest is open to all amateur operators, ARES members are strongly encouraged to participate. How else are you going to win the "bragging rights" session of your next ARES meeting?

When did you say it was? The contest is January 14, 2017. The start time is (for those of us who sleep in) 10 AM through 6 PM Eastern. Yeah, a civilized time-frame that doesn't rob sleep, and allows time with the family. Why, you can even watch a few cartoons in the morning!

Where you gonna be? You may operate this contest from anywhere. There are certain benefits for venturing out from your warm, comfortable home station. EOC stations can gain extra points. Portable stations can gain even MORE extra points that is, if your frozen fingers will still be able to operate a keyboard. Portable stations MUST use portable antennas, nothing permanently attached...kind of like Field Day on ice. We are not going with any mobile operation this time. The image of a bunch of vehicles running around with portable towers, 150 pounds of antenna hardware and an occasional grounding anchor is best left to the ARRL contesters.

Da Bands a la Mode Because local emergency communication takes place primarily on the two meter and 70 centimeter bands, the contest is limited to those two bands. Within each band, we will have these modes: FM Simplex, "Everything else" Simplex; DIGITAL simplex contacts will make up a third mode on each band. Contacts with a station count once per mode- if you can talk the other guy into abandoning "his frequency" and meeting you on SSB or CW, more power to ya! NO REPEATER CONTACTS WILL COUNT. If you get bored, you certainly are welcome to chat amongst yourselves on repeaters, or simplex, or cell phones, or smoke signals.

Da Contacts The goal is to contact as many different stations in as many different counties as possible. You can make as many overall contacts as you like, they will then be multiplied by the number of *Continued page 15*

SECOND ANNUAL OHIO ARES VHF SIMPLEX CONTEST - CONTINUED FROM PAGE 14

counties you've reached. Extra points will be available for contacting an EC, AEC, DEC, ADEC, ASEC or SEC. Pretty simple- any more complex and we'll confuse the scorekeepers.

Da Score Each FM Simplex contact counts as 1 point. Each non- FM simplex contact counts as 1 point. Each digital simplex contact counts as 1 point. (Detect a pattern here?) Contact with EC, AEC, DEC, ADEC, ASEC or SEC adds 5 points. Contact with an EOC or with a portable station adds 5 points. Operation from an EOC add 50 points to your total contact score. Operation from a portable location add 100 points to your total contact score. Total contact score (all bands/modes added together) will be multiplied by the total number of counties you contacted.

Da Logs Please use any of the appropriate computer logging programs, paper dupe sheets, a well-worn slide rule or rusty abacus. Just keep all that to yourself, we can't find anyone with the time to go through all the detail contacts. Submit an email to: contest@delares.org with the following:

Your name:

Group name:

Location: (City, county)

FM Simplex Contacts:

"Everything else" Simplex Contacts:

Digital Simplex Contacts:

EOC bonus:

Portable bonus:

Total Contact Score (Add above together, but you figured that out already):

Multiply by total number of counties contacted (include your own!):

ask in the glory of a well thought out, well executed effort!

Definition of acronyms..

EOC = Emergency Operations Center

NBEMS = Narrow Band Emergency Messaging System

ARES = Amateur Radio Emergency Service

SM = Section Manager

SEC = Section Emergency Coordinator

ASEC = Assistant Section Emergency Coordinator

DEC = District Emergency Coordinator

ADEC = Assistant District Emergency Coordinator

EC = Emergency Coordinator

AEC = Assistant Emergency Coordinator

CW = Continuous Wave

SSB = Single-Side Band

FM = Frequency Modulation



Space Weather News for Dec. 21, 2016

SOLSTICE GEOMAGNETIC STORM: Around the Arctic Circle, the longest night of the year has arrived with perfect timing. A high-speed stream of solar wind hit Earth's magnetic field on Dec. 21st (the northern winter solstice) filling the long hours of darkness with Northern Lights. At the time of this alert, a moderately strong G2-class geomagnetic storm is underway, and more storms are in the offing. Flowing from a huge hole in the sun's atmosphere, this solar wind stream is broad. Earth could take days to cross it. Check Spaceweather.com for updates. <http://spaceweather.com>



FROM THE TECHNICAL COORDINATOR

Hey gang,

In October, I was invited by Medina County ARES to see a presentation about Winlink. I had heard of it as a way to send email messages over the HF bands. There were rumors around whether specialized hardware was needed and I really wanted to see what it was all about. Rick - K8CAV gave a great presentation on how it all works and some tips that really helped me get operating on Winlink.



Winlink, in short, is a way to send email via radio circuits frequently used by RV campers, boaters, and mariners where the Internet may not be available or reliable. It is a store and forward system meaning your messages will be held and delivered when you call into a gateway, much like the dial-up or BBS days. There are a number of ways the software will operate: connect to a remote gateway station over the air, operate peer-to-peer over-the-air, connect via the

Internet using Telnet (yeah, yeah 'telnet isn't secure' but neither is your email going out over the air), or webmail. Winlink has regional Central Messaging Servers (CMS) which connect to the Radio Messaging Servers (RMS) over the Internet. The RMS is the gateway your client connects to for sending and receiving messages over-the-air.

There is little privacy as other stations can read your messages but the intent is to have a worldwide emergency email messaging system. Messages can be exchanged with any email address (Gmail, your ISP) on the Internet using the assigned callsign@winlink.org email address. Stations conducting business will likely get blocked from the RMS gateways. Attachments can be included with messages but due to bandwidth, these should be kept to small files like CSV or TXT files – no multi-megapixel images or videos.

There are three pieces to the Winlink client software: RMS Express is the '90's looking email client, Winmor - the modem, and ITS HF Propagation is a third party software program that works with Winmor to determine propagation for connection reliability. I got Winlink setup and working with my radio and Signalink so no specialized hardware is required. A lot of back-and-forth transmit and receiving happens between the client and gateway. The TX/RX turn-around time needs to happen quickly (under 200ms), longer will require a high number of retransmissions. One tip to help minimize the delay: set the Signalink delay control no further than the second hash mark (8 o'clock position). To get started, go to ftp://autoupdate.winlink.org. Click "User Programs." Download and install "Winlink Express Install," and "itshfbc" to their default locations. To get an account created on the system, you need to send one email to an Internet address such as your personal email. In addition, Winlink has an "APRSLink" where you can check for messages, read, compose, forward, and delete all by sending APRS messages. Feel free to send me a message to "my call" at winlink.org. More: <http://www.winlink.org/>

I've also been playing around with a new device from Shark RF called the OpenSpot. It's a small company with two guys in Estonia (South of Finland). Production is done on a batching basis so there is a waiting list. It seems like they're shipping units close to once per month. Once I got the shipping notice, I had the device within a week. They say 3-6 business days shipping time and it arrived certainly within that range. The OpenSpot is a standalone digital radio gateway otherwise known as a hotspot. It currently supports DMR (Brandmeister, DMR+), D-STAR (DPlus/REF, DCS, XRF/DExtra, XLX), and System Fusion (FCS, YSFReflector). If the mode or network isn't supported, they do take requests and will make additions available via firmware upgrades. Since it is a hotspot device a transceiver capable of operating that mode is required. They are doing something cool since DMR and Fusion use the AMBE2 codec. A DMR radio can be used to access the Fusion network and vice-versa (DMR Talk Groups with a Fusion radio).



The OpenSpot has a lot of flexibility, very well designed, and is superior to the DV4Mini. It doesn't need different Raspberry Pi images for different modes like the DVMega. The device comes with everything: the OpenSpot hotspot, Ethernet cable, USB cable, USB power adapter, and antenna. It runs an internal webserver for device configuration. I even like how they do the firmware update process. The OpenSpot shows up as a drive to the computer and using the copy command - copy the firmware to it and voilà - done. For DMR, it will operate like a DV4Mini with the radio configured in TG 9 (talk-group) or it will operate like a repeater (my preference) where the Talk Groups are push-to-talk. All the TAC groups are available (310, 311, 312, etc) and call routing works.

THE TECHNICAL COORDINATOR - CONTINUED FROM PAGE 16

I could not get these to go on the DV4Mini. D-STAR works great too. You can link and unlink to reflectors using radio commands. It does not have a drop down for linking directly to a D-STAR repeater on the network. The only systems listed are reflectors. Forum posts describe how to link to a D-STAR repeater (like a DVAP or DNGL would do) using the "Advanced Mode" screens.

It's not great for portability as it comes (in a car, for example). I have not tried any of the USB to Ethernet adapters with my smartphone or tried a Raspberry Pi as a Wi-Fi to Ethernet bridge. OpenSpot requires an Ethernet cable connection meaning no Wi-Fi though there are plans to add this and uses USB for power and firmware upgrades. As with these devices in DMR mode, they do not transmit a valid call sign. The radio ID is not valid identification. If you listen to a repeater in FM it will ID in CW. Unfortunately, the cost is about twice that of the DV4Mini 182.50 € which, when I ordered, was about \$235 including shipping. More: <https://www.sharkrf.com/>

Other new tech (Christmas gifts?). With advancements in Software-Defined Radios (SDR) I'm seeing a new breed of devices hams can use as radios: your smartphone. Well, at least something that resembles a smartphone or tablet – still need the additional hardware. A device out of the UK called "MyDel Hamfone Smartphone Transceiver" is available. It offers a 3G cellphone, 70cm transceiver (500mw/1W) with camera, expandable SD card, and GPS. The few reviews are positive but there is some question if its FCC certified in the US. More: <http://www.hamradio.co.uk/amateur-radio-handheld-radio-mydel-handhelds/mydel/mydel-hamfone-smartphone-transceiver-pd-6093.php>



Bob - W2CYK and the guys over at RFinder (the online repeater directory of the ARRL) have released the "RFinder Android Radio." Their device integrates 4G LTE & GSM cell technologies alongside FM (DMR is also available) radios into a device with the RFinder repeater directory database. The directory offers coverage maps and switching repeaters is a point-and-click away. They also boast the elimination of codeplugs for DMR. This is great as finding codeplugs, or the information for one, is not always readily available. More: <http://androiddmr.com>

This past month, the Parma Radio Club invited me to their meeting to give the Raspberry Pi presentation. There was a lot of good discussion and questions. This is always good to hear because you know the audience is engaged, thinking, and ultimately providing real-time feedback on the presentation. Thanks for having me at your meeting. More: <http://www.parmaradioclub.com/>

Starting this past fall with the kickoff of new TV seasons, the CW is airing a show called "Frequency" loosely based off the 2000 Sci-Fi thriller of the same name. It starred Dennis Quaid and Jim Caviezel as father and son, Frank and John Sullivan. This was big with hams because the movie incorporated something that resembled ham-radio which allowed the father and son to talk 30 years into the past and future. The TV show has gotten positive reviews with a Rotten Tomatoes score of 74% with the biggest criticism being the back-and-forth between now and 20 years in the past. It airs Wednesday nights at 9pm (Ham Nation time so it gets the DVR treatment here) with the last couple episodes available on the CW website and on Netflix streaming. More: <http://www.cwtv.com/shows/frequency/>

Thanks for reading. Happy holidays, Merry Christmas, and Happy New Year!

73... de Jeff – K8JTK
Jeff Kopcak – TC
k8jtk@arrl.net



SB DX @ ARL \$ARLD051 ARLD051 DX NEWS

SB DX @ ARL \$ARLD051
ARLD051 DX news

To all radio amateurs

This week's bulletin was made possible with information provided by QRZ DX, the OPDX Bulletin, 425 DX News, The Daily DX, DXNL, Contest Corral from QST and the ARRL Contest Calendar and WA7BNM web sites. Thanks to all.

KENYA, 5Z. Sila, AK0SK plans to be QRV as 5Z4/AK0SK from Taveta from December 22 to January 6, 2017. Activity will be on 80 to 10 meters using SSB. QSL to home call.

PHILIPPINES, DU. Robert, DU7ET is QRV as 4F7OC from Negros Island, IOTA OC-129, until January 15, 2017. QSL direct to home call.

ST. LUCIA, J6. Bill, K9HZ will be QRV as J68HZ from December 17 to January 2, 2017. Activity will be on 160 to 6 meters using CW, SSB and RTTY. QSL direct to home call.

MINAMI TORISHIMA, JD1. Take, JG8NQJ will be QRV as JG8NQJ/JD1 from Marcus Island, IOTA OC-073, from December 19 to March 15, 2017 while on work assignment. Activity will be in his spare time on 20 to 6 meters using CW and RTTY. QSL to home call.

ANTARCTICA. Alex, RD1AV is QRV as RI1ANC from Base Vostok, IOTA AN-016, until February 15, 2017. Activity is in his spare time on the HF bands using CW, SSB and various digital modes. QSL via RN1ON.

INDIA, VU. Special event station 8T1VWN is QRV until the end of 2017 to honor the memory of K. R. Vasantha Kumar, VU2VWN. QSL via VU2ACC.

ROMANIA, YO. Horia, YO3IMD will be QRV with special call sign YP2017HNY from December 20 to January 20, 2017. QSL via YO3KPA.

ZIMBABWE, Z2. Herbert, 7Z1HB is QRV as Z21LS until January 2017. Activity is on 40 to 10 meters using SSB, RTTY and PSK. QSL via the Bureau.

The ARRL National Parks on the Air event runs during all of 2016 to mark the 100th anniversary of the National Park Service.

NNNN
/EX



GREAT LAKES DIVISION HAMFESTS

The following is the listing of currently ARRL Sanctioned Hamfests for the first 4 months of 2017. Hamfests not listed have not yet submitted their Sanctioning requests.

1/15/17 SCARF Hamfest	Nelsonville, OH
1/29/17 Tusco	Strasburg, OH
1/29/17 Hazel Park	Madison Heights
2/4/17 HARA	Negaunee, MI
2/11/17 Cherryland	Traverse City, MI
2/19/17 Mansfield	Mansfield, OH
2/19/17 Livonia	Livonia, MI
3/4/17 Cave City	Cave City, KY
3/11/17 Lowell ARC	Lowell, MI
3/18/17 Crossroads	Kalamazoo, MI
3/18/17 MOVARC	Gallipolis, OH
4/8/17 Cuyahoga Falls	Cuyahoga Falls
4/29/17 Jackson County	Jackson, OH
4/30/17 Athens	Athens, OH
5/6/17 Cadillac	Cadillac, MI
4/22/17 Chassell Hamfest	Chassell, MI

 ARRL Great Lakes Division
 Director: Dale R Williams, WA8EFK
 wa8efk@arrrl.org

NEWS OF A SoCAL FRIEND FROM ARRL



For a California ARES Hospital Communications Group, it gets real after participating in a major statewide medical drill -- The 2016 Statewide Medical and Health Exercise took place on November 17 and was scarcely over for a month when the Hospital Disaster Support Communications System (HDSCS), a specialized ARES group in Orange County, California, was called out for the real thing. On Monday, December 12, around 1:15 PM, phones went down at Anaheim Global Medical Center. In accordance with the hospital emergency plan, HDSCS was contacted using the HDSCS Call-Up sheet. The hospital's assistant disaster coordinator informed the HDSCS contact of the problem and the request for multiple operators to back-up communications. A call over a local repeater used by HDSCS yielded two operators ready to put the system into action. Within a few minutes a base station was established and a lead communicator was on his way to the hospital.

The base station and an assistant emergency coordinator made calls using the HDSCS "first wave" sheet. Over the next 15 minutes another three operators were identified and began their responses to the hospital. An additional three operators were contacted in case more would be needed and indicated their availability. As the first operator arrived, a hospital command center had been established. In under an hour, four communicators were on site with one operator staying in contact with the base station and the other three backing up internal communications.

Training in Hospital Incident Command System protocols was helpful for the radio operators in working with the 213 and 214 ICS forms and the hospital staff knowing about the job action sheet preferred by Orange County hospitals. While this facility did have a back up phone system that provided some coverage for the most critical departments and some hand-held radios, the radio amateurs were wanted also: while some patient care staff could make a call on a hand-held radio, they couldn't always listen and preferred the HDSCS operators to handle communications.

Continued page 20

SOCAL FRIEND - CONTINUED FROM PAGE 19

A relief operator, identified from the initial call-up, did come on site about 4 1/2 hours into the incident. The system was declared stable just over 6 hours after the activation, and with that, the communicators on site were asked to participate in the debriefing with the hospital staff. This phone outage was the 123rd emergency and the 97th phone outage to which HDSCS has responded since 1980. -- April Moell, WA6OPS, District Emergency Coordinator, ARRL Orange Section, ARES Hospital Disaster Support Communications System



Moell added this commentary: "Many groups may drill with hospitals but typically the hams show up prior to the start of the drill and when the activity starts everyone is already in place. That is not the real world case when it hits the fan. The fact that we are always, and I mean always, making sure hospitals have current activation procedures and names, more than one, is why we have had timely responses to our hospitals over the years. We were on site before the phone technicians were in this incident, and it's not the first time. Our first wave sheets really help make call-up more efficient. Our first calls are to those who are closer and most likely available at certain times of day to hospitals. Being educated about hospitals and EMS organization and disaster plans make us valuable additions to the hospitals in the little and big disasters."

April's Husband, Joe Moell, KØOV, wrote the book on T-Hunting - <http://www.homingin.com/>



IS CHRISTMAS STILL ON YOUR MIND?
TAKE A LOOK AT THESE -

Filmed in the lobby of Union Station in Washington DC.2015
<https://www.facebook.com/l.php?u=https%3A%2F%2Fwww.youtube.com%2Fembed%2FkhQN5ylb3H0&h=SAQGImtsX&s=1>

Click here: Sleigh Ride Andre Rieu | 1Funny.com
<http://1funny.com/sleigh-ride-andre-rieu/>

SEE YA IN
DECEMBER
2017



THIS IS YOUR LIFE.
DO WHAT YOU LOVE,
AND DO IT OFTEN.

IF YOU DON'T LIKE SOMETHING, CHANGE IT.
IF YOU DON'T LIKE YOUR JOB, QUIT.
IF YOU DON'T HAVE ENOUGH TIME, STOP WATCHING TV.
IF YOU ARE LOOKING FOR THE LOVE OF YOUR LIFE, STOP;
THEY WILL BE WAITING FOR YOU WHEN YOU
START DOING THINGS YOU LOVE.

STOP OVER ANALYZING, ALL EMOTIONS ARE BEAUTIFUL.
WHEN YOU EAT, APPRECIATE
LIFE IS SIMPLE. EVERY LAST BITE.

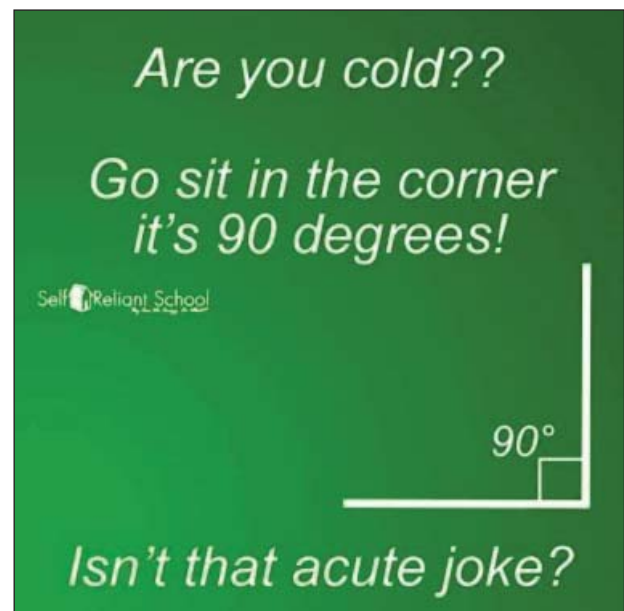
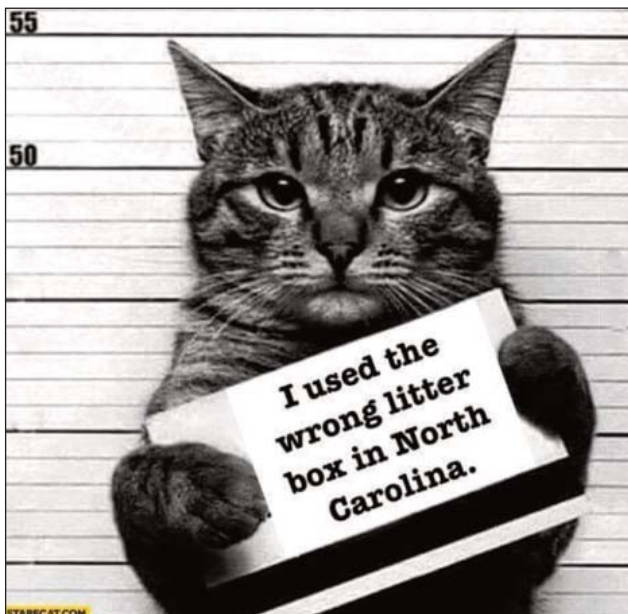
OPEN YOUR MIND, ARMS, AND HEART TO NEW THINGS
AND PEOPLE, WE ARE UNITED IN OUR DIFFERENCES.
ASK THE NEXT PERSON YOU SEE WHAT THEIR PASSION IS,
AND SHARE YOUR INSPIRING DREAM WITH THEM.

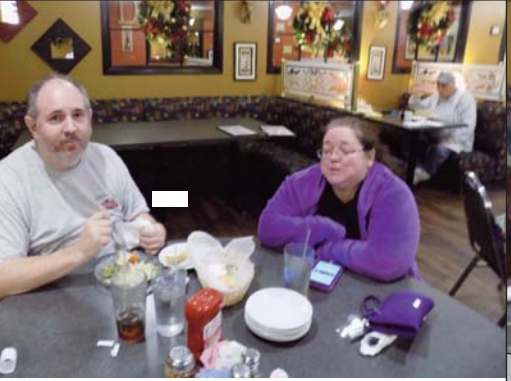
TRAVEL OFTEN; GETTING LOST WILL
HELP YOU FIND YOURSELF.

SOME OPPORTUNITIES ONLY COME ONCE, SEIZE THEM.
LIFE IS ABOUT THE PEOPLE YOU MEET, AND
THE THINGS YOU CREATE WITH THEM
SO GO OUT AND START CREATING.

LIFE IS LIVE YOUR DREAM,
AND WEAR
SHORT. YOUR PASSION.

"Pray as if everything depends on God...prepare as if everything depends on you."





New Member
Scott Stengloin

January 2017

PREPAREDNESS LEADS TO READINESS - MATT W8DEC



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	2 ARES Net 8:30 PM 146.745 PL 110.9	3	4	5	6 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	7 YL Breakfast 9A.M. Landmark in Boardman
8 Annual After the Holidays Meeting 3:00 P.M.	9	10 Ham Breakfast Eat'n Park Boardman 8:30 A.M. Board Meeting Eat'n Park Auatintown 7:00 P.M.	11	12	13 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	14
15	16 ARES Net 8:30 PM 146.745 PL 110.9	17	18	19	20 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	21 WaveBender Articles Due
22	23	24 Eat'n Park Boardman 8:30 A.M. Ham Community Breakfast	25	26	27 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	28
29	30	31			WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	