



# The Wave Bender

February 2017

## WRARC PREZ SEZ

By the time you read this, we will already be into the second month of 2017. We have had a rocky start to the New Year having added two silent keys to the Club roster, John Chapman WA8GLF and Frank Crozier KD8YZE. They will be missed by all in the club that knew them and enjoyed talking and spending time with them.

The After the Holidays party was a big success, and I would like to once again thank all of those involved with getting it set up and all the hard work that went into making it such a success. The Baskets were really nice, and there many nice table decorations for door prizes.

I plan on continuing to work on improving the cooperation between the ham clubs in our area. Interest has been shown by one of the other clubs in achieving this which I believe will benefit the clubs involved, and ham radio operators in our area in general. I also forwarded a request from the Red Cross to all the members regarding volunteers for a fund-raise at the Covelli Center that may be interesting. Check the email for all the details.

We are beginning to get the schedule for our public service events for 2017, and should be starting in April with the first event. There will be notices sent out as soon as we get the schedule set up. There will be a special Saturday from DX Engineering for WRARC Members coming soon, and Joe W0JO will be sending information on that also.

I look forward to seeing our members at the monthly meetings and enjoy talking to one and all. Stop by the Friday night nets and say hi, it is good to hear our members participating, and as we all know, our net is open to any licensed ham.

Speaking of nets, our anniversary net for WRARC will be Feb 18, 2017 with the 2-meter rag chew net starting at 10am and ending at 6:00 P.M. Contact Steve KC8SOY to sign up for one or more of the half hour slots. The HF net will run the same hours, and you can contact Al, AB8AA for more information on that.

I think that pretty well covers all the info I have at this point so I will say 73 until next time,

Bob, N8RCM



**February 18, 2017**  
**The Start of**  
**our Eighth Year**  
**Celebrate with Us!**



**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

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

**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:**

February 14, 2017, 7:00 P.M. At Eat 'n Park,  
Austintown, Eat 'n Park,  
5451 Mahoning Ave  
All members welcome

**Members Meeting:**

February 21, Davidsons  
3636 Canfield Rd., Cornersburgh

**Speaker:** Bob Dukis, KK8DX**Topic:** "Arduino. The perfect toy for amateur radio."[HTTP://WWW.WRARC.NET/](http://www.wrarc.net/)

## February 18, 2017 Celebrate with Us, Be part of the FUN!

Contact Steve, KC8SOY, to take part  
in our Anniversary 2M Net

Contact Al, AB8AA, to be a part  
of the HFSpecial Event Station.

Both run from  
10:00 A.M. to 6:00 P.M.

## WRARC

Testing and classes  
have moved to the  
American Red Cross,  
3530 Belmont Ave. #7,  
Youngstown, OH 44505

**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>>

## FROM OUR VP

I hope everyone had a great holiday season. I know I did and it's hard to believe we're already past the middle of January starting a whole new year. Your officers and board are trying to establish some new events for us to do this year and we'll keep you posted well in advance if anything develops. I know Jane, K8JAA, is always asking for our members to provide input to this monthly newsletter and one of the things she mentions are interesting contacts.

Recently, on a Sunday night, I was sitting in my car in the parking lot of Sam's Club, Howland, killing some time waiting and decided to turn on my mobile radio. I have an ICOM 5100 in the car which is a dual-band (i.e., 2 meters and 70 centimeters) FM radio, but also has D-STAR. For those of you not familiar with D-STAR, it stands for Digital Smart Technology for Amateur Radio and was originally developed by Amateur Radio Operators in Japan and was, until recently, exclusive to ICOM radios. I note recently that some other manufacturers are also making their newer radios D-STAR compatible.



I'm not going to go into the technicalities of the D-STAR mode, but if you're interested you can check out the website [www.DSTARInfo.com](http://www.DSTARInfo.com) which has a lot of information. Basically, with D-STAR, you can talk to other Amateur Radio Operators throughout the world and, unlike HF and some other modes, the sound is very clear and it's as if the person you're talking to is sitting in the car with you. That's how clear it is.

Anyway, I got on Reflector "30 Charlie" and some guy came on and said his call sign was W4OXH. We started talking and it turned out his name was Oscar Norris and he was talking to me from an assisted living center in North Carolina. Turns out he was 99 years old, blind and was speaking to me over an ICOM 880h and a mobile antenna. He was very interesting and I thanked him for taking the time to speak with me. A few days later, I heard other people on D-Star saying they, too, had spoken with him. If you look him up on [www.QRZ.com](http://www.QRZ.com), you'll note he has, as of this writing, 49,259 views, holds the old "Advanced" license and has been a HAM for a very long time. Guess it shows you're never too old to be an Amateur Radio Operator.

Just want to remind everyone that our next event coming up will be our 7th Annual Anniversary Celebration Net which is scheduled for Saturday, February 18, 2017. Last year was our first year with this event and everyone thought it went very well. It will be running from 10:00 A.M. EST to 6:00 P.M. EST and we will be running nets on 2 meters, 15 meters, 20 meters and 40 meters. Last I heard, we're still looking for members to be a net control operator for 30 minutes only on 2 meters sometime during the day and work HF, if you have the equipment.

If you have never been a net control operator before, this is a great opportunity to give it a try. Everyone who does the nets will tell you that, at first, they were somewhat intimidated and nervous to various degrees before they did their first net, but that is very common and natural with most people. In order to conquer your fears of anything . . . you just "have to do it." You'll have a written script, so all you really need to do is read the script. It's that simple. And, if you have questions or need additional help, just ask one of your officers or trustees. Once you do it, it's a piece of cake and gets easier the more you do it. Like anything else, you'll get better with practice. So, if you've been thinking about it and want to give it a try, let Steve. KC8SOY, <[kc8soy@yahoo.com](mailto:kc8soy@yahoo.com)> or Bob, N8RCM, our President, know at (575) 910-1456 or <[n8rcm@wrarc.net](mailto:n8rcm@wrarc.net)>.

One of our goals this year is to have more participation from our members in all our events. If you haven't done any or very much in the past, give it a try. We know you'll like it.

Our next monthly club meeting will be held on Tuesday, February 21, 2017. We hold our monthly meetings at Davidson's Restaurant, 3636 Canfield Road, Canfield, OH 44406. Dinner is at 6:00 P.M. EST and we start our meetings at 7:00 P.M. EST. We welcome all area Amateur Radio Operators to our meeting and those who may be interesting in learning more about the hobby/service of Amateur Radio. Until then . . .

73, Joe, W0JO  
VP/WRARC

## WHAT'S COMING UP?

Happy 2017

Feb. 11

Feb. 11

Feb.. 14

Feb. 15

Feb. 18

Feb. 21

CW Refresher/Learning sessions

FYAO <<http://www.portcars.org/wp/?p=7135>>

Board meeting

Board meetings are open to all interested members.

Testing American Red Cross 3530 Belmont Ave #7,

WRARC Anniversary net and Special Event station

Regular Meeting



May 06

WRARC Day at DX Engineering

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

**Frank Crozier, KD8YZE - SK**

December 24, 2016

Please join WRARC Members  
in expressing our  
feelings of sadness at  
Frank's passing

Losing a friend is  
never easy!.

**Jack Chapman, WA8GLF - SK**

January 11, 2017

Please join WRARC Members  
in expressing our  
feelings of sadness at  
Jack's passing

Losing a friend is  
never easy!.

CONTACT WRARC ELMERS WITH YOUR QUESTIONS - [QUESTIONS@WRARC.NET](mailto:QUESTIONS@WRARC.NET)

Avnet, Allan AB8AA

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

[ab8aa@arrl.net](mailto:ab8aa@arrl.net)

Beatty, Dave KC8WY

Yaesu FT8900, FT8800, Mobile  
???

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Wojtowicz, Joe W0JO

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ICOM radios, D-Star

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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](mailto: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**

Feb. 03	Joe, W0JO
Feb. 10	Roy, KD8IJF
Feb. 17	Bob, N8RCM
Feb. 14	Terri, N1TAM

Mar. 03	Rose, KD8TII
Mar. 10	Rocky, KE8ENM
Mar. 17	Jane, K8JAA
Mar. 24	This could be you
Mar. 31	This could be you

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



**WRARC Simplex Frequency 146.565**

### **Mahoning County ARES® Nets**

**1<sup>st</sup> Monday 8.30 PM ET W8QLY Repeater - 146.745 (PL 110.9)**

**&**

**3<sup>rd</sup> 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; KC8WY, KB8Y, N8SY, W5YI, the ARRL and the World-Wide Web.

## AFTER THE HOLIDAYS ANNUAL DINNER MEETING

Maureen, KD8NXS, and her crew did an excellent job putting it all together. The food was very good, but the Hams who attended are what brought it all together and made it a successful occasion. There was no planned program, just a lot of schmoozing, what Fun! There were four baskets that you could win in addition to the normal 50-50 - Kevin won that. Rose, KD8TII, did a wonderful display of pictures that were taken from 2010 through 2016, two books of QSL cards WRARC has received, as well as a book with every issue of the Wave Bender from last year. Gabbi, who is currently studying her Tech. so she can get Frank's call, was presented with a plaque in Frank's memory. Her mom, Jeannette, was also in attendance.

I hope any of you who were not able to attend this meeting, and haven't renewed your membership, will do so soon. There will be some fun and informative meetings in 2017. Stay tuned!



  
K8JAA


## INTO THE NEW YEAR

Here we are already nearly two months into 2017. Once again, I wish you all a very happy and prosperous New Year. Our first social event of the year is now past us. We had our Annual After the Holidays Party and Installation of Officers on Sunday, Jan. 8, at Davidson's Restaurant. It was a very nice event and everyone attending enjoyed themselves. We only had one installation this year that of Roy Haren, KD8IJF to trustee. Congratulations, Roy. We had a moment of silence to honor our 3 Silent Keys: John Fabry, KC8SPF; and Frank Crozier, KD8YZE; both lost in 2016; and Bill Wolfe, KA8TZX, lost in 2015. They are all truly missed. Rose, KD8TII made up a nice In Memoriam Section for us to view, as well as a display of the historian's photo album for us to see. Thank you, Rose.

We had a good turnout despite the snowy weather and slick roads. It is always enjoyable to sit and socialize with everyone there. It is nice to have that as the main focus of the gathering every once in a while. We missed those of you who were not able to come. Please plan to join us in the future. This year we had a couple of new things for the party a sweet ending to the day with a cake shared by all and some really nice table centerpieces/decorations that were door prizes. It gave us a little extra enjoyment.

We also had our regular 50/50 raffle. Congratulations to Kevin, KD8NXX for winning the 50-50. We had our Chinese Auction basket raffle with some really good prizes. All good stuff! The themes were as follows: a power drill with some accessories, a basket with everything related to coffee (with a small Mr. Coffee, coffee maker), a basket with everything needed for roadside emergencies for your car or truck, and a basket of an assortment of jams and jellies.

Congratulations to our winners Mike Stein, KD8YML, Jo Wilms, KD8SNW, Terri Mitzel, N1TAM, and Gabrielle Paine. I hope you all had fun with this activity too. I know it was fun finding bargains, and fun putting the baskets together with them.

Our next social event will be the evening meal at Field Day. More information will be coming about this a little closer to the time. However, please plan to participate in the entire Field Day experience. Come on out and try out operating on HF. You won't be sorry you tried! 'Til then, stay warm and Happy New Year!

73, Maureen KD8NXS

## A NOTE FROM ROSE

Ladies and Gentlemen, we have come to the end of January and now we look forward to February. Because you couldn't make it to the After the Holidays party on January 8, you missed a fun time. We enjoyed fine food, a good, constructive, general meeting, and a lot of good prizes, but most of all, good company. We hope to continue this next year with a lot more members attending than came this past year.

And now we look forward to having fun in February, beginning with our 7th Anniversary Net, which will be held on Saturday, February 18, starting at 10:00 A.M. and ending at 6:00 P.M. This is the time to get involved with the net, have fun talking to people from anywhere in the country and possibly overseas, and letting them know we are part of a great ham radio club here in Youngstown, Ohio. You can contact Steve Fabry, KC8SOY to take a turn on the net.

We hope we can count on you, our members, to join in the fun and sign up for a spot on the net on Saturday, Feb. 18.

One more item I neglected to mention. Our February YL Breakfast will be at C's Waffles on South Ave. in North Lima at 9:00 A.M. on Saturday, February 4. Jane, K8JAA, talked to the owner/manager of the restaurant and made arrangements for us for that date and time. I hope our group will be a little bigger this month. The manager and he said he would appreciate it if we can all meet at the restaurant between 8:45 and 9 A.M. that morning to be seated as a whole group. He cannot seat us individually. Please let me know a couple days in advance if you can make it so I can phone the manager on Friday to let him know how big our group will be. Thank you.

73 to all. Rose Marko, KD8TII



JANUARY YL BREAKFAST

The January YL Breakfast was Held at Landmark in Boardman. Seven YLs attended. We are hoping more Ladies attend in February. You don't have to have a license, just an interest in Amateur Radio or maybe your significant other is a Ham and you'd like to spend a morning with us. Hope you can make it in February. We will be having breakfast in North Lima, 2/4/17, at C's Waffles, 9:00 A.M. Thanks to Rose, KD8TII, for the pictures.

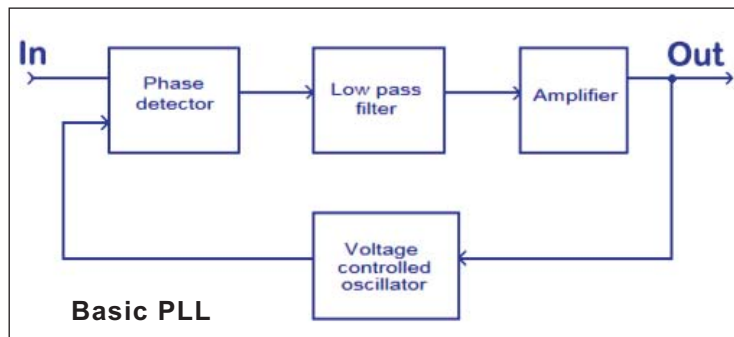




## DON'T PHASE ME NONE!

Last month we looked at multiplier circuits that could double or triple the frequency of a sine wave. That was a purely analog method. Let's walk a little farther down the road and look at the action of a Phased Lock Loop. PLL's are kind of a hybrid in that they are still mainly analog, but are combined with a digital counter to synthesize a new frequency.

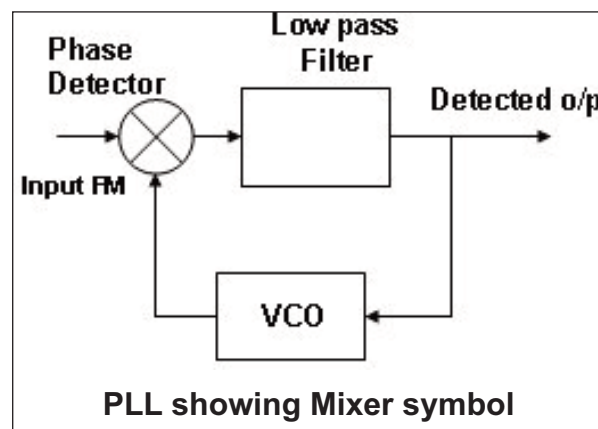
The block diagram of a basic PLL is shown to the right. Block diagrams are used to show the general flow of signals and the functions of circuits without going into the detail that a schematic will show. One of the first uses for PLL's was to demodulate FM signals. Modulation means to put a low frequency message onto a high frequency carrier. So if we think of our 2M HT's, the message is our voice and inside the radio the modulator circuits combine that message with a high frequency carrier signal. In the case of Liz's repeater, the carrier is 145.270 Mhz, a high frequency, and our voice, probably between 300 and 3000 Hz, is a low frequency. On the receive end we need to do the opposite operation and lose the high frequency carrier, leaving the original voice signal. That's the operation the PLL is doing.



## PLL showing Mixer symbol

Signal flow in the PLL is from the left input to the right output, with a secondary path from the output back to the input through the VCO block. So on the left we apply the FM modulated signal received by the HT and on the right out comes the demodulated audio. Let's take it block by block.

The first block on the left is labeled the Phase Detector. In a lot of references, you will see a slightly different symbol for the Phase Detector, such as the diagram here. In this case the circle with the X is the phase detector but this symbol is the usual symbol for a mixer. I think a mixer is a better way to look at the circuit. This mixer does heterodyning. Heterodyning means to mix two signals, but has an unusual output. The outputs are the two original signals, a new signal whose frequency is the sum of the input frequencies, and a new signal whose frequency is the difference of the input frequencies. If we put some numbers to this, suppose the input frequency is 1000 Hz and the second frequency (yep that's the output of the VCO) is 900 Hz. Then the outputs will be 1000 and 900, the original frequencies, and the new frequencies, 1900 and 100, the sum and difference signals.



Ok, now look at the next block in the diagram, the Low Pass Filter. A filter allows some frequencies to get through and blocks some frequencies. In this case it allows low frequencies to get through. Look at the four output frequencies from the mixer. What is the low frequency? Uh Huh, 100 Hz. So usually we just say that the mixer and the LPF work together to only let the difference signal through.

Back to the HT. We have it set to receive the carrier of the repeater, 145.270 Mhz. We don't like working with really high frequencies, so before we hit the PLL we will knock that down to what is known as an intermediate frequency, the IF. For instance, we could knock it down to 8.9875Mhz (I know, who the heck picked that? Um, Yaesu, it's a long story.) That's too weird a number, so let's call it 9Mhz. Now we will apply the 9Mhz signal at the input of the PLL. Remember this is an FM system which means that while we are talking in the mic, the carrier frequency is being swung above and below its rest frequency. If we are not talking but have the mic keyed, we will be at the rest frequency. For our example the rest frequency will be 9Mhz and as we talk that frequency will swing higher and lower according to the sound of our voice.

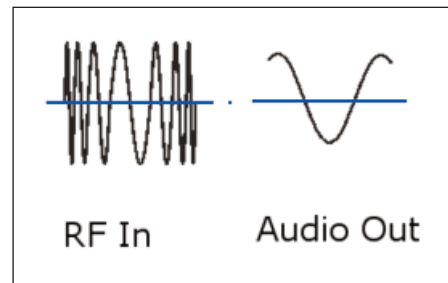
Meanwhile back in the PLL there is a block called the VCO. VCO means Voltage Controlled Oscillator. When the radio engineers design the PLL circuit, they set the VCO for a particular frequency. For our

*Continued page 9*



## DON'T PHASE ME NONE! - CONTINUED FROM PAGE 8

example we will set the VCO to 9Mhz also. Ok, the mixer sees two signals, the input 9Mhz and the VCO 9Mhz. We know the only output of the mixer we care about is the difference because of the Low Pass Filter. The difference between 9 and 9 is zero, so when you are not talking into the mic, nothing is heard. When you start talking you swing the rest frequency, let's say up a 100 Hz. Then the difference between the two is 100 Hz and it will come out of the circuit. The output will follow whatever change there is in the input signal frequency. We have converted changes in input RF frequency to an audio frequency. That is called demodulation and the signal is routed through an amplifier and to the speaker.



Well this was nice, but I thought we were talking about multipliers and synthesizers? Since we know the basics of PLL's now, next month let's modify the circuit by adding the digital counter and turn this demodulator into a synthesizer. Piece of cake after all this.

If you are about to email a list of the errors in this explanation, hang on one more moment, here comes the cop out. I am not a heavy duty mathematician, physicist, or engineer. But what I have been able to do is find some simplified ideas that helped me understand some complicated ideas. So if you are a mathematician, physicist, or engineer, you probably noticed I take some liberties with the theory. I know this can be disconcerting, so please send your comments to our complaint supervisor, Russ, NR8W, who will cheerfully record your thoughts.

73, Dave, KD8NZF


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CONGRATULATIONS

**Ohio Section Logo Mug ( Dec. 25 Handbook Drawing) Nancy Brett, KD8QNY, was one of two winners, not the handbook but this nice mug.**

**Congratulate Kescha Ayres, KE8FTN, on finally getting her new Tech. call. Kescha tested with us in December. Rocky LeRoy, KE8ENM, and John Ricci, KT8TAT, who passed their General at that session, were also finally posted as well.**





Met John Curea, KG8BC early January.  
John told us he lost his wife of 60 years late last year.

John is a friend of all Hams in this area.

Please join us in expressing our feelings of sadness at his loss.

K8JAA

## ARLS012 NEW AMATEUR RADIO FM TRANSPONDER CUBESAT NOW IN SPACE

SB SPACE @ ARL \$ARLS012  
 QST de W1AW  
 Space Bulletin 012 ARLS012  
 From ARRL Headquarters  
 Newington, CT December 30, 2016  
 To all radio amateurs

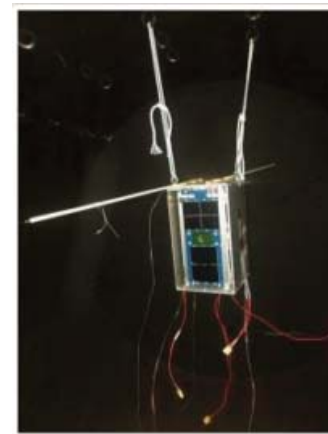
The BY70-1 CubeSat launched on December 28 from the Taiyuan Space Launch Center in China, but in a lower orbit than intended. The satellite carries an Amateur Radio FM transponder.

BY70-1 was intended to go into a 530-kilometer (approximately 329-mile) circular Sun-synchronous orbit, but it appears the orbit is 524 x 212 kilometers, which will give the spacecraft an orbital lifetime of just a month or two.

Paul Stoetzer, N8HM, reported working Wyatt Dirks, AC0RA, through the FM transponder during the 1709 UTC pass on December 28. "Uplink requires precise frequency adjustment, and there's a delay on the downlink, but the signal is strong," Stoetzer said.

BY70-1 is a 2U CubeSat project for education and Amateur Radio. It features 3-axis stabilization and deployable solar panels. In addition to the FM transponder, BY70-1 has a camera, and plans call for downloading images and telemetry via a 9600 bps BPSK downlink. The IARU Amateur Satellite Frequency Coordination pages list an uplink of 145.920 MHz, and a downlink of 436.200 MHz.

AMSAT-UK has more information online at, <https://amsat-uk.org/2016/12/27/by70-1-fm-transponder-satellite/>.  
 NNNN  
 /EX



BY70-1 CubeSat

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 MAYBE THIS IS YOU?

Could YOU be the one I'm looking for? This is the editor of YOUR Newsletter. We have plenty of room for YOUR article(s)! If something is of interest to you, odds are that we all will enjoy your thoughts and activities! Have a favorite radio? Have some reminiscing to do? maybe you have a question for one of our Elmers. OR, a Tip or Trick you learned that would help one of YOUR WRARC friends. You are warmly invited to contribute! Don't worry about writing or formality - we can help you with that. Your article could go in this spot, or one bigger, next month!!




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 BIRTHDAYS THIS MONTH

Darin Cannon



## THE RADIO AMATEUR'S CODE

**The Radio Amateur is . . .**

**Considerate** - He never knowingly operates in such a way as to lessen the pleasure of others

**Loyal** - He offers loyalty, encouragement and support to other Amateurs, local clubs, the IARU Radio Society in his country, through which Amateur Radio in his country is represented nationally and internationally.

**Progressive** - He keeps his station up to date. It is well-built and efficient. His *operating practice* is above reproach.

**Friendly** - He operates slowly and patiently when requested; offers friendly advice and counsel to the beginner; kind assistance, cooperation and consideration for the interests of others. These are the marks of the Amateur spirit.

**Balanced** - Radio is a hobby, never interfering with duties owed to family, job, school or community.

**Patriotic** - His station and skills are always ready for service to country and community.

— adapted from the original Amateur's Code, written by Paul M. Segal, W9EEA, in 1928

## TUNER

A Tuner can be the best first timer homebrew project. This one below I made for a whopping 1 dollar. Well maybe a little more.

The Box is the proverbial all steel painted "Bread Box" I do not even know if they make bread boxes anymore? Anyway I got that one at a garage/yard sale for a buck.



The insides I got at a hamfest. They were in a box of old junk that was like 2 feet by 2 feet by 1 foot in size a whole bunch of stuff for 5 bucks.

In the junk was an awesome roller inductor. and two caps, one wide spaced and a differential one. here is the insides.

A pair of relays and a switch to make a by pass path, and wham bam a tuner.

I have yet to find a match that it would not make absolutely flat 160 thru 10 meters. and have even ran legal limit power through it too with no problems.

Joe WB9SBD  
via email reflector

## 73

73 -- Ham lingo for "best regards." Used on both phone and CW toward the end of a contact.

The first authentic use of 73 is in the publication *The National Telegraph Review and Operators' Guide*, first published in April 1857. At that time, 73 meant "My love to you!"

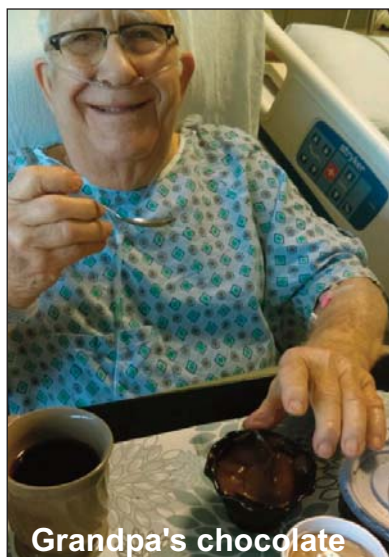
In the National Telegraph Convention, the numeral was changed to a friendly "word" between operators.

In 1859, the Western Union Company set up the standard "92 Code." A list of numerals from one to 92 was compiled to indicate a series of prepared phrases for use by the operators on the wires. Here, in the 92 Code, 73 changes to "accept my compliments," which was in keeping with the florid language of that era.

Over the years from 1859 to 1900, the many manuals of telegraphy show variations of this meaning. Dodge's *The Telegraph Instructor* shows it merely as "compliments." The *Twentieth Century Manual of Railway and Commercial Telegraphy* defines it two ways, one listing as "my compliments to you;" but in the glossary of abbreviations it is merely "compliments." Theodore A. Edison's *Telegraphy Self-Taught* shows a return to "accept my compliments." By 1908, however, a later edition of the Dodge Manual gives us today's definition of "best regards" with a backward look at the older meaning in another part of the work where it also lists it as "compliments."

"Best regards" has remained ever since as the "put-it-down-in-black-and-white" meaning of 73 but it has acquired overtones of much warmer meaning. Today, amateurs use it more in the manner that James Reid had intended that it be used --a "friendly word between operators."

The Ham etiquette says we greet one another in our writings using '73' (not best 73, or many 73), and not sincerely or other similar formal expression. Making this number plural (73s) is incorrect since it is already plural. 73s would mean best regardses, which make no sense.



Grandpa's chocolate

From a previous stay at rehab

**Special thanks to Frank, WB8YHD, Wes, W8IZC,  
and Dave Chapman, KC8EFN, for sending me  
pictures of Jack, WA8GLF.**

**Jack was a neighbor, and a long time special friend.  
He was a friend and member of both  
MVARA and WRARC  
Amateur Radio Clubs.**

**The family honored Jack's wishes and had  
private, Family only, Services for him.**

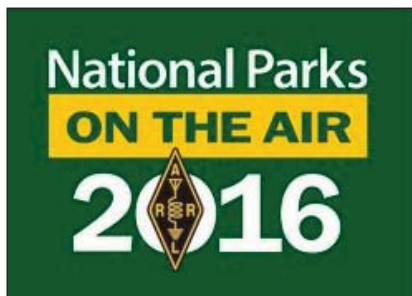
**Jack loved Amateur Radio, CW,  
Almost as much  
as he loved Chocolate.**

**I was told his passing was easy and that  
he had a chocolate milkshake after  
dinner that night.**





## EXCERPTS FROM THE MONDAY MORNING MESSAGE

**NPOTA News - 1/2/17**

Well, that's it; the fat lady has sung. The operating phase of NPOTA has ended. New Years Eve was pure bedlam on the bands. There were lots of parks on the air, and lots of chasers as well. Unfortunately there were more than a couple I heard calling blind. I've already begun perusing my logs for those "Orphan QSOs" that haven't been confirmed. While I'm at it, I'll be uploading my logs to Parks On The Air. Park on the air is just one of the groups hoping to capitalize on the popularity of NPOTA.

Statistics - As of Sunday morning, we were at 1,062,159 QSOs in the NPOTA system. Number of activations are at 20,181. These numbers will increase between now and the January 31st upload deadline. That's it for now. This column will continue for at least another few weeks. By next week, I'll have begun uploading logs to Parks On the air, and will let you know how it went.

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Last week, after running the Amateur's code, (page 11) I excerpted the following letter from Rufus Turner: "The balanced amateur does not lead the one - sided life that the public ties up with Ham Radio. He still finds time to make his interests liberal and broad, though he devotes the greater portion of his energy, when he is at leisure, to his Hobby".

Well, the following day, I received an Email from Pete; a loyal reader of the Monday Morning Message that the Callsign for Rufus Turner was W3LF. To quote Pete, "He's widely credited as being the first licensed African-American Amateur Radio Operator in the U.S". Pete continues to say that someone else had actually beat W3LF to the title. He sends along this picture of Rufus Turner, W3LF.



73, DE John, KD8MQ  
 Here's my contact info:  
 John Myers, KD8MQ  
 Phone / text: 330-936-5021  
 Email:kd8mq1@gmail.com  
 Twitter: kd8mq

[http://mondaymorningmessage.net/wp-content/uploads/2017/01/M3-Jan\\_2\\_-2016.pdf](http://mondaymorningmessage.net/wp-content/uploads/2017/01/M3-Jan_2_-2016.pdf)

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### YOUNGSTOWN OFFICIALS URGE RESIDENTS TO CARRY THIS WITH THEM AT ALL TIMES

Do you ever drive by yourself at night?  
 Do you walk the dog or exercise when the sun is down?  
 Do you have a family to protect?  
 If something were to happen, would you be prepared?

Due to the outbreak of late night and early morning crimes, officials are asking residents to take safety precautions. Officials stated they don't want residents to buy a gun or even non-lethal items like a taser or pepper spray. Instead they suggest something you probably would never think of - carry a high power flashlight.



The reason is even non-lethal deterrents are still considered weapons and are restricted in many areas. If you can't carry it with you at all times it's not really providing you with much safety.

By James Berendsohn January 06, 2017

## BSA RADIO MERIT BADGE REQUIREMENTS TO INCLUDE AMATEUR RADIO DIRECTION FINDING OPTION

The Boy Scouts of America (BSA) have updated the requirements for the Radio Merit Badge for 2017, although a formal announcement is pending the publication of the 2017 Boy Scouts Requirements pamphlet. A new option for the Radio Merit Badge is Amateur Radio Direction Finding (ARDF). ARRL ARDF Coordinator Joe Moell, K0OV, said he's "really excited" about the move, and he credited Jamboree on the Air Coordinator (JOTA) and K2BSA trustee Jim Wilson, K5ND, with being the "spark plug" behind the ARDF addition.



"Jim visited a training session at the USA ARDF Championships in Texas last April and realized what an excellent activity that on-foot hidden transmitter hunting can be for Scouts," Moell recounted. "Working with Brian Coleman, KB0MAP, Jim authored the new ARDF Radio Merit Badge syllabus, which was then reviewed by several leaders of US ARDF community."

A first draft of the new merit badge pamphlet is anticipated later this month or in early February. Moell said the new merit badge requirements should become effective just in time for the July 2017 National Scout Jamboree in West Virginia, where an ARDF course and equipment will be available to Scouts of all ages. He also hopes there could be a role for ARDF in JOTA.

The Radio Merit Badge ARDF option combines orienteering and foxhunting, and opens a new interactive component to this program. Other new Radio Merit Badge options include cellular telephones and different types of radio modulation.

Key requirements being dropped from the Radio Merit Badge include open, closed, and short circuits, as well as schematic symbols and components, because these are covered in the Electricity and Electronics Merit Badges.

The BSA also made some minor editorial changes and reordered requirements for the Amateur Radio option. The radio broadcasting option now includes internet streaming, regulations, and power levels. A medium-wave and shortwave listening option includes both types of listening, as well as listening via streaming services on a smartphone.

The BSA has posted a list of frequently asked questions (FAQs). Scouts are encouraged to follow the new requirements, although the guidelines may allow use of the previous requirements in some cases.

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**"Kindness is the language the blind can see and the deaf can hear." Mark Twain**

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## CONTEST UNIVERSITY IN DAYTON

Registration is Now Open for Contest University at Dayton: Student registration is now open for 2017 Dayton Contest University (CTU), all day on Thursday, May 18, 2017, at the Crowne Plaza hotel in downtown Dayton, Ohio. CTU sessions have been held in 11 countries over its 11-year history, and more than 5,000 students have attended to learn the ins and outs of Amateur Radio contesting from CTU's "professors." Scholarships to cover the registration fee are available from CTU through a grant from the Northern California DX Foundation (NCDXF) for students 25 years old and younger. Click the "Contact Us" button on the CTU website for more information. Student registration information <<https://www.contestuniversity.com/>> is available on the CTU website.

Anyone who has given, or will give, a talk at Hamvention 2017 about Amateur Radio to any Club, Hamfest, or group since May 17, 2016, qualifies for a \$10 registration fee discount. Use the "Registration with Club Talk Discount" option on the CTU website, which has much more information. --

Thanks to Tim Duffy, K3LR, Contest University Chairman

<https://www.contestuniversity.com/>

**FCC DENIES EXPERT LINEARS' REQUEST FOR WAIVER OF 15 dB RULE, PETITION PENDING**

QST de W1AW  
ARRL Bulletin 45 ARLB045  
From ARRL Headquarters  
Newington CT December 28, 2016  
To all radio amateurs



The FCC has denied a request by Expert Linears America LLC to waive Part 97.317(a)(2) of the Amateur Service rules limiting amplifier gain. Expert, of Magnolia, Texas, distributes linears manufactured by SPE in Italy. Its waiver request, filed in June, would have allowed Expert to import an amplifier capable of exceeding the current 15 dB gain limitation as it awaits FCC action on its April petition (RM-11767) to revise the same Amateur Service rules. That petition remains pending. Expert has asserted that there should be no gain limitation on amplifiers sold or used in the Amateur Service. Most commenters supported Expert's waiver request, but a couple of commenters - including FlexRadio - demurred.

"In light of the conflicting comments regarding the desirability of eliminating the 15 dB limitation, we conclude that waiving the limitation at this stage of the rulemaking proceeding would prejudice the rulemaking proceeding and prematurely dispose of commenters' concerns," the FCC said in denying the waiver. "Moreover, we agree with FlexRadio that granting Expert's waiver request while the rulemaking petition remains pending would provide an unfair market advantage for one equipment model over other manufacturers' RF power amplifiers that would still be limited by [the existing rules]."

The FCC said it would rather give full consideration to "the pending issues" and apply the result of the rulemaking proceeding to all Amateur Radio Service equipment. The Commission said rule waivers "generally" are not warranted "merely to accommodate technical parameters that are based solely on harmonization with the manufacturer's products available abroad."

The FCC said a minority of those commenting on the waiver request expressed concern that eliminating the 15 dB limitation would lead to an overall increase in power levels, "including transmissions that intentionally or unintentionally exceed the maximum power limit."

In its April rulemaking petition, Expert maintained that the 15 dB gain limitation is an unneeded holdover from the days when amplifiers were less efficient and the FCC was attempting to rein in the use of Amateur Service amplifiers by Citizens Band operators.

Although the FCC had proposed in 2004 to delete the requirement that amplifiers be designed to use a minimum of 50 W of drive power - and subsequently did so - it did not further discuss the 15 dB limit in the subsequent Report and Order in that proceeding.

Expert has pointed to its Model 1.3K FA amplifier as an example of a linear "inherently capable of considerably more than 15 dB of amplification," which would make it a suitable match for low-power transceivers now on the market.

The full Report and Order can be found on the web in PDF format at, [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-06-149A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-06-149A1.pdf).

**If you haven't renewed your membership, please send your renewal to our  
Treasurer, Rosemary Marko, KD8TII  
416 S. Edgehill Ave. Austintown, OH. 44515.  
She will accept money orders or checks  
made payable to WRARC.**

**Reminder!**

## NEW "AMATEUR RADIO PARITY ACT" BILL INTRODUCED IN US HOUSE OF REPRESENTATIVES

QST de W1AW  
 ARRL Bulletin 5 ARLB005  
 From ARRL Headquarters  
 Newington CT January 17, 2017  
 To all radio amateurs

H.R. 555 - a new "Amateur Radio Parity Act" bill - has been introduced in the U.S. House of Representatives. The bill's language is identical to that of the 2015 measure, H.R. 1301, which passed in the House late last summer but failed in the waning days of the US Senate to gain the necessary support. As with H.R. 1301, the new measure introduced on January 13 in the 115th Congress was sponsored by Rep. Adam Kinzinger (R-IL), with initial co-sponsorship by Rep. Joe Courtney (D-CT) and Rep. Greg Walden, W7EQI (R-OR). Walden now chairs the House Committee on Energy and Commerce, to which the new bill has been referred. H.R. 555 will get an initial airing in the Subcommittee on Communications and Technology. When H.R. 1301 came up in committee, Walden spoke forcefully in favor of the measure, which ultimately attracted 126 House cosponsors.



Information on H.R. 555 can be found on the web at, <https://www.congress.gov/bill/115th-congress/house-bill/555?r=27>

"Rep. Kinzinger has again stepped forward to introduce this important legislation," said ARRL CEO Tom Gallagher, NY2RF. "Kinzinger's commitment stems from exposure to what the Amateur Radio community brings to the service of all communities. The ARRL and radio amateurs nationwide owe Rep. Kinzinger a resounding 'Thank You!' for his efforts on their behalf."

H.R. 555 calls on the FCC to establish rules prohibiting the application of deed restrictions that preclude Amateur Radio communications on their face or as applied. Deed restrictions would have to impose the minimum practicable restriction on Amateur Radio communications to accomplish the lawful purposes of homeowners association seeking to enforce the restriction.

The ARRL Board of Directors is expected to discuss the pending legislation when it meets January 20-21.

NNNN

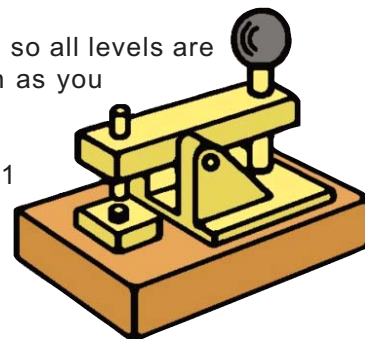
/EX

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### CW REFRESHER/LEARNING SESSIONS

Hi all, We are a group of Hams getting together to acquire or improve our CW skill, so all levels are welcome from newbie to expert. Everything will be self paced, so come as often as you like.

We will be getting together Saturday mornings at 10:00 A.M. starting February 11 and go till the end of March at the West Side Community Center, 304 Matta Ave. Youngstown 44509. Matta Ave. is right off Mahoning Ave., across from the West Side Merchants, all the way down on the right side, behind McGuffey Elementary School. Anyone interested in CW is welcome.



Email me if you plan on attending to get documentation and links to software emailed before the first get together.

73, Rich KB8GAE  
 KB8GAE@yahoo.com



## SWAP'N SHOP

## John Chapman, WA8GLF - SK, Equipment for sale



Autek Research IC active filter QF-1	\$ 25.00
Bencher ST-1CW Paddle	\$ 70.00
Icom IC-271A 2 Mtr Allmode	\$100.00
Icom AH-4 Auto Tuner	\$150.00
HEIL Headset	\$ 30.00
Kenwood TH-22AT 2 Mtr HH	\$ 25.00
KENT Iambic Paddle Model TP-1B	\$ 60.00
MACAW Model DPM-1 SWR/ Power Meter	\$ 20.00
MFJ MFJ-422B Electronic Paddle	\$ 50.00
MFJ MFJ-945E Antenna Tuner	\$ 50.00
MFJ MFJ-204B Antenna Bridge	\$ 30.00
MFJ MFJ-906 6 Mtr Antenna Tuner	\$ 50.00
MFJ MFJ-9040 40 Mtr CW transceiver	\$100.00
MFJ MFJ-971 Antenna Tuner	\$ 65.00
MFJ MFJ-492 Memory Keyer	\$ 50.00
MFJ MFJ-464 CW Reader/ Keyer	\$100.00
MFJ MFJ-105B 24 hour Clock	\$ 10.00
RIGranner power panel (2)	\$ 35.00 ea
Ten-Tec Argosy II Model 525-D	\$250.00
Ten-Tec Ultramatic Model 645	\$ 50.00
Ten-Tec Antenna Tuner Model 247	\$ 50.00
Ten-Tec Kit Shortwave Receiver Model 1253	\$100.00
Ten-Tec Kit 6 Mtr Transverter	\$ 40.00
Vibroplex Bug Champion Model	\$100.00
Vibroplex Iambic Paddle Model EK-1	\$ 90.00

Will take reasonable offers.

Contact Allan, AB8AA at [ab8aa@arrrl.net](mailto:ab8aa@arrrl.net) or 330-207-3296

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 DEFINING A YL

There have been many controversies over the definitions of YL versus XYL. The term YL was first defined in a Traffic Report signed The American Radio Relay League by E. C. Adams on May 13, 1920 to Miss M. Adaire Garmhausen, 3BCK. He was replying to her submission of an article submitted to QST on "How to Build a Wire-less Station". In it he called her "My Dear YL—" and stated, "We have had to coin a new phrase for your benefit as you will readily see that OM will not fit and OL [Old Lady] would certainly be most in applicable." Even though Miss Garmhausen wasn't the first YL ham radio operator, this is when the term was first applied specifically to label all women as Young Ladies no matter what their age.

The article was published in the July 1920 issue of QST and a second article of hers followed in May 1921, but it wasn't until the October 1922 had the column "Who's Who in Amateur Wireless" that M. Adaire's picture was printed as she was honored along with another YL, Miss Winifred Dow, 7CP, from Tacoma, WA.

Many OMs have used XYL (meaning Ex-Young Lady) to describe a wife versus a single lady, but some women, though not all, take offense at this term feeling that getting married does not mean a female is no longer a Young Lady.

In May 1940, the YLRL set forth the policy for YL-Harmonics and YLRL that the term "YL" was to be used of all licensed amateur operators of the feminine sex. This meant they were all young ladies no matter what their marital status was. A licensed woman is a YL while an XYL is a non-licensed wife.

From The Monday Morning Message  
(Vol 4, #3) January 16th, 2017

## SKYWARN..

Hey Gang it's now time to start thinking of either renewing or obtaining your Skywarn training for 2017. Do you know where the training is being made available?

Here's the links to the Cleveland & Pittsburgh National Weather Service Office training schedules. Depending on where you live will depend on which weather office you'll want to look at. For those like me, in the southern most range of the Cleveland Office, you could go either way. It's your choice, but just be sure to get that training in!

Cleveland: [http://www.weather.gov/cle/SKYWARN\\_schedule](http://www.weather.gov/cle/SKYWARN_schedule)

Pittsburgh: <http://www.weather.gov/pbz/skywarn>



Mahoning County  
Austintown, OH 4/19/2017  
600 PM Austintown Fitch High School Auditorium  
4560 Falcon Drive  
Basic training

73, Scott, N8SY..

ARRL Ohio Section  
Section Manager: Scott D Yonally, N8SY

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### NIMS / ICS TRAINING



Hey Gang, our numbers are growing, we now have more than 340 who have completed the 4 NIMS required courses!

I'm pushing hard on all of you to not only get this training, but to get those so valuable certificates turned in to me so that we can get you added to the database as well. Yes, we have a lot of folks in there, but we know that we don't have yours. How do we know that? Everyone that has the 4 basic courses (IS 100, 200, 700 & 800) and has shared those certificates with us

are now listed on the Ohio Section NIMS Roster.

If you don't see your name on the list we don't have all 4 of your needed certificates, and we definitely need and want them! This list shows those who have all 4 certificates turned in. If you don't see your name on the list, send them to me [n8sy@n8sy.com](mailto:n8sy@n8sy.com) Now even if you haven't gotten all 4 of these courses in, we still need you to get what you do have turned in to us so that we can get you started on your way.

I've had a lot of folks ask me why this training is so important. The answer is easy. In 2014 the ARRL signed a MOU with FEMA to help them when needed. This puts ARES in direct contact with FEMA now, this is a relationship that we didn't have before. The agreement indicates that we are to be a TRAINED corps of communicators. With that stated, FEMA's expectations are that we have the 4 basic courses – ICS 100, 200, 700 and 800 completed so that we can properly operate within their Incident Command System that ALL emergencies now operate under. So you see, we've now agreed to get this training, and that's why we need to fulfil our part of this MOU as best as we can.

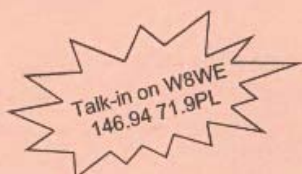
The Ohio Section has taken a lead in the country with this and really dug its heels in and has done a great job of completing this training. Let's keep it going for 2017!!

73, Scott, N8SY..



# Mid❄️ Winter Hamfest & Computer Show Mansfield, Ohio

**BRING FRIENDS!**



Visit us at [www.iarc.ws](http://www.iarc.ws)

## Forums and VE Test Session

9:00 am—Ohio Army MARS Forum

10:00 am—ARRL Forum

11:00 am—OSSBN Forum

12:00 noon Digital Forum

12:00 noon VE Test Session

(Pre-registration for test is required, e-mail [steve@n8smb.com](mailto:steve@n8smb.com) to register)

Volume 1 Issue 1 Published Once A Year by IARC, Inc.

Sunday, February 19, 2017  
Richland County Fairgrounds  
750 North Home Road

**Gates Open at 7am**

Sponsored by the Intercity Amateur Radio Club, Inc.



Tickets: \$5

Tables, *Advance Only*. \$15

Ticket and Table Deadline- January 22

Online ordering-<http://hamfest.w8we.org>

Advance orders (**must include SASE**) to:

Danny Bailey, W8DLB

70 Euclid Street

Shiloh, OH 44878

419-896-2165 (After 3 P.M. Please)

[w8dlb113@gmail.com](mailto:w8dlb113@gmail.com)

## OTHER HAMFESTS

03/18/2017 | MOVARC HAMFEST

Location: Gallipolis, OH

Sponsor: MOVARC Club

Website: <https://sites.google.com/site/midohiovalleyarc/>

03/19/2017 | TMRA HAMFEST

Location: Perrysburg, OH

Sponsor: Toledo Mobile Radio Association

Website: <http://www.tmrahamradio.org/hamfest.php>

04/08/2017 | CFARC 63rd Annual Hamfest

Location: Cuyahoga Falls, OH

Sponsor: Cuyahoga Falls Amateur Radio Club

Website: <http://www.cfarc.org/hamfest.php>

05/19/17 DAYTON HAMVENTION

Location: Xenia, OH

Website: <http://hamvention.org/>



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

## THE NEW DARWIN AWARDS ARE HERE!!



The Darwin Awards are finally out. The annual honor given to the persons who did the gene pool the biggest service by killing themselves in the most extraordinarily stupid way. Last year's winner was the fellow who was killed by a Coke machine which toppled over on top of him as he was attempting to tip a free soda out.

This year's winner was a real rocket scientist... HONEST! Read on...And remember that each and every one of these is TRUE.And the nominees were:

**Semifinalist #1** - A young Canadian man, searching for a way of getting drunk cheaply, because he had no money with which to buy alcohol, mixed gasoline with milk... Not surprisingly, this concoction made him ill,, and he vomited into the fireplace in his house. The resulting explosion and fire burned his house down, killing both him and his sister.

**Semifinalist #2** - Three Brazilian men were flying in a light aircraft at low altitude when another plane approached. It appears that they decided to moon the occupants of the other plane, but lost control of their own aircraft and crashed.. They were all found dead in the wreckage with their pants around their ankles.

**Semifinalist #3** - A 22-year-old Reston , VA , man was found dead after he tried to use octopus straps to bungee jump off a 70-foot railroad trestle. Fairfax County police said Eric Barcia, a fast food worker, taped a bunch of these straps together, wrapped an end around one foot, anchored the other end to the trestle at Lake Accotink Park , jumped and hit the pavement. Warren Carmichael, a police spokesman, said investigators think Barcia was alone because his car was found nearby. 'The length of the cord that he had assembled was greater than the distance between the trestle and the ground,' Carmichael said. Police say the apparent cause of death was 'Major trauma.'

**Semifinalist #4** - A man in Alabama died from rattlesnake bites. It seems that he and a friend were playing a game of catch, using the rattlesnake as a ball. The friend - no doubt a future Darwin Awards candidate - was hospitalized.

**Semifinalist #5** - Employees in a medium-sized warehouse in west Texas noticed the smell of a gas leak. Sensibly, management evacuated the building extinguishing all potential sources of ignition; lights, power, etc. After the building had been evacuated, two technicians from the gas company were dispatched. Upon entering the building, they found they had difficulty navigating in the dark. To their frustration, none of the lights worked. Witnesses later described the sight of one of the technicians reaching into his pocket and retrieving an object that resembled a cigarette lighter!

Upon operation of the lighter-like object, the gas in the warehouse exploded, sending pieces of it up to three miles away. Nothing was found of the technicians, but the lighter was virtually untouched by the explosion. The technician suspected of causing the blast had never been thought of as "bright" by his peers.

**Now, the winner of this year's Darwin Award (awarded, as always, posthumously):** The Arizona Highway Patrol came upon a pile of smoldering metal embedded in the side of a cliff rising above the road at the apex of a curve. The wreckage resembled the site of an airplane crash, but it was a car. The type of car was unidentifiable at the scene. Police investigators finally pieced together the mystery. An amateur rocket scientist.... had somehow gotten hold of a JATO bottle (Jet Assisted Take Off, actually a solid fuel rocket) that is used to give heavy military transport planes an extra 'push' for taking off from short airfields. He had driven his Chevy Impala out into the desert and found a long, straight stretch of road. He attached the JATO unit to the car, jumped in, got up some speed and fired off the JATO! The facts as best as could be determined are that the operator of the 1967 Impala hit the JATO ignition at a distance of approximately 3.0 miles from the crash site. This was established by the scorched and melted asphalt at that location. The JATO, if operating properly, would have reached maximum thrust within 5 seconds, causing the Chevy to reach speeds well in excess of 350 mph and continuing at full power for an additional 20 -25 seconds. The driver, and soon to be pilot, would have experienced G-forces usually reserved for dog fighting F -14 jocks under full afterburners, causing

*Continued page 21*



## THE NEW DARWIN AWARDS - CONTINUED FROM PAGE 20

him to become irrelevant for the remainder of the event.

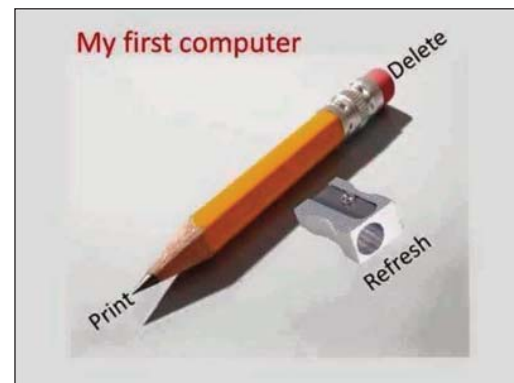
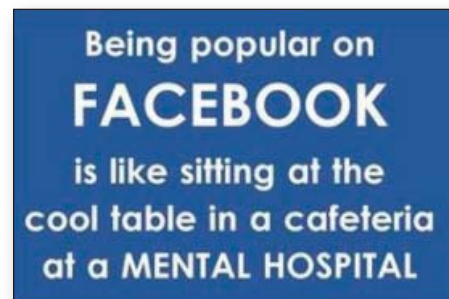
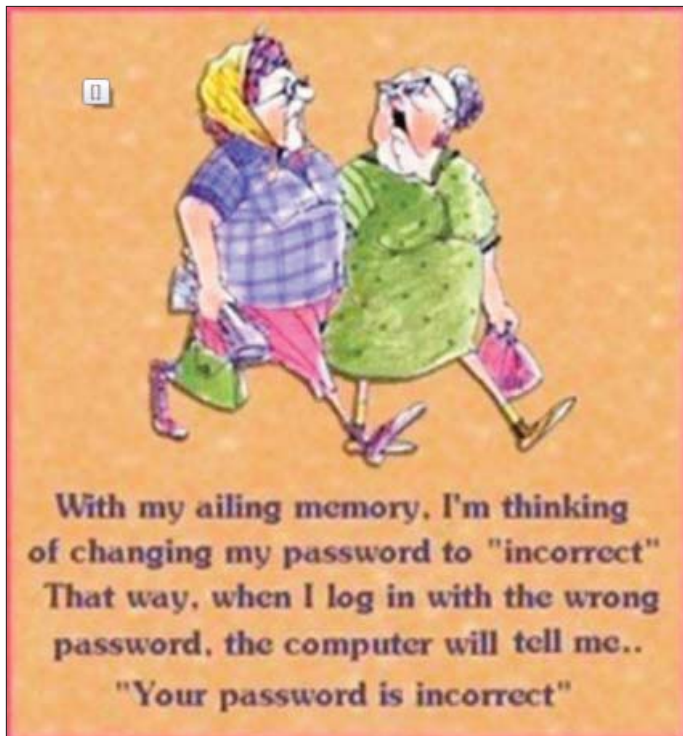
However, the automobile remained on the straight highway for about 2.5 miles (15-20 seconds) before the driver applied and completely melted the brakes, blowing the tires and leaving thick rubber marks on the road surface, then becoming airborne for an additional 1.4 miles and impacting the cliff face at a height of 125 feet leaving a blackened crater 3 feet deep in the rock. Most of the driver's remains were not recoverable. However, small fragments of bone, teeth and hair were extracted from the crater, and fingernail and bone shards were removed from a piece of debris believed to be a portion of the steering wheel. Epilogue: It has been calculated that this moron attained a ground speed of approximately 420-mph, though much of his voyage was not actually on the ground.

You couldn't make this stuff up, could you? AND PEOPLE JUST LIKE THIS ARE ALL AROUND US, BREEDING & VOTING!!!... SCARY THOUGHT, ISN'T IT ?!!!



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I don't understand how I can remember  
every word of a song from 1964,  
but I can't remember why I walked into the kitchen...



### Brass Band Multitasker

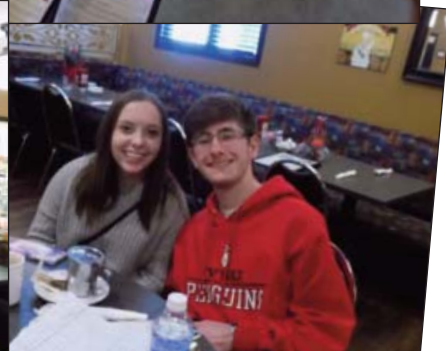
This has to be the strangest, funniest and most unique brass band  
you will ever see.

Prepare to be amazed that they not only can perform this act,  
but the fact they even thought of it. Whood-a-thunket!

Check the guy's deadpan expression.

<http://www.wimp.com/brassband/>









2017 Board with Appointees



2017 Board

Meet the members who keep WRARC moving ahead

# February 2017

PREPAREDNESS LEADS TO READINESS - MATT W8DEC



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 Skywarn Net 8:30 P.M. 146.745	2  Groundhog's Day 	3 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	4 YL Breakfast 9 A.M. 
5	6 ARES Net 8:30 PM 146.745 PL 110.9	7	8	9	10 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	11
12	13  --->	14 Ham Breakfast Eat'n Park Boardman 8:30 A.M.  Board Meeting Eat'n Park Auatintown 7:00 P.M.	15 Testing @ American Red Cross Belmont Ave 	16	17 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	18 WRARC Anniversary net and Special Event station
19  ---> WaveBender Articles Due	20 ARES Net 8:30 PM 146.745 PL 110.9	21 WRARC Meeting 7:00 P.M.	22	23	24 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	25
26	27	28 Eat'n Park Boardman 8:30 A.M. Ham Community Breakfast	3/1 Ash Wednesday	3/2	3/3 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	3/4 YL Breakfast 9 A.M. 