



The Wave Bender

May 2017



WRARC PREZ SEZ

It is May already, the birds are singing, the sun is shining and the sky is blue. So starts the busy time of the year for WRARC. We have already had our first event of the year; the Easter Seal Walk at Boardman Park. Everything went smooth and we were finished before 11:00 A.M. I want to thank all those that came out and participated in the event.

We have several big events coming up this summer, The Youngstown Marathon, Being the first. This is a full Marathon, and will need to have as many operators as possible manning the course. We are moving forward in our endeavors to foster co-operation between the various clubs in the area and are setting up a meeting with the other club's officers this month.



I want to touch on the upcoming events for our Club for the summer. Saturday, May 6th is WRARC day at DX engineering from 10:00 A.M. to 12 noon. I understand there will be coffee and donuts for our members, and the chance to see and possibly try some of the new toys on the market. Joe, W0JO has all the details and has been sharing them on the net for the past few Fridays.

May 9th in the morning, @ 8:00 A.M. or so a bunch of Hams meet at the Eat and Park in Boardman for some friendly rag chewing and general harassment of each other, feel free to join us, we always have fun and have only been asked to leave a few times. (Just kidding.)

May 9th is also our board meeting at Eat and Park in Austintown on Mahoning Ave just east of Rt. 46. Dinner at 6:00, and the board meets at 7:00 P.M.

May 13th is our semiannual road cleanup on Rt. 446 in Canfield. We usually meet at Perkins on 224 near Rt.11 about 8:30 A.M. Have breakfast then go clean up the road. This section of 446 was adopted by WRARC and the state has posted signs telling drivers this. The more help we have the faster it goes.

May 19 -21 is Dayton Hamvention, and I am sure many local Hams including some of our members will be making the Annual pilgrimage.

The month will end with the Ham breakfast in Boardman at Eat and Park @ 8:00 A.M.

June 4th this is a very important date, the Youngstown Marithon. We have been requested to have Hams along the 26-mile route. We will need as many members as possible and also would appreciate any Hams interested in joining the festivities. You can contact Joe W0JO and he can put you on the list.

I hope everyone is having a great spring. The weather is getting nice and the sun is warm and inviting.

73 Bob, N8RCM

IN THIS ISSUE

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:

May 9, 2017, 7:00 P.M. At Eat 'n Park,
 Austintown, Eat 'n Park,
 5451 Mahoning Ave
 All members welcome

Members Meeting:

May 16, Davidsons
 3636 Canfield Rd., Cornersburgh

Speaker: Bill Fraedrich, WB9LBI
Topic: Morse Code – It's History and Usage



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

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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](http://www.arrl.org/find-an-amateur-radio-license-exam-session)>

OHIO SINGLE SIDEBAND NET
 <[HTTP://WWW.OSSBN.ORG/INDEX.HTML](http://www.ossbn.org/index.html)>

FROM OUR VP

Many thanks to all those members who participated in the annual Easter Seals "Make the First Five (Years) Count" community fund-raising event held on Saturday, April 15th, at Boardman Park. While there is no where near as many people who participate in this event as the annual Panerathon, our net went fairly well and it was good practice for our bigger events coming up later this year.

Our next club event will be Western Reserve Amateur Radio Club Day at DX Engineering on Saturday, May 6th. DX Engineering is located in the Summit Racing Equipment building located at 1200 Southeast Avenue, Tallmadge, OH 44278, which is right off I-76 West before you get to Akron. It is about a 35-minute drive from the intersection of State Route 46 and I-80 in Austintown. The event will run from 10:00am EDT to Noon EDT. They will have free coffee and donuts for our members and will allow us to tryout the latest HAM gear. In addition, they may have some bargains on some equipment and accessories. So, if you're in the market for a new radio or need some parts and accessories, this will be a great opportunity. As of this writing, we will just meet there at the store, if you want to go.



The following weekend will be our Semi-Annual Road Cleanup on Saturday, May 13th. This will be near the Canfield Fair grounds and we'll have more information as to the place and time we'll meet as we get closer to that date.

Our first big community fund-raising event this year will be the Youngstown Marathon, www.youngstown-marathon.com to be held on Sunday, June 4th. This event is sponsored by Chemical Bank (formerly Talmer Bank) and the Braking Point Recovery Center and is a worthy, charitable event. This marathon, along with the annual Panerathon and Youngstown Peace Race are ideal for our voluntary communication services as the courses are relatively lengthy and the event organizers and first responders can definitely use the services of amateur radio operators to monitor the races. Your club officers are reaching out to the other area amateur radio clubs for their members' participation this year for all three of these events. We will also be attending a forthcoming meeting in the near future and we'll have more information later as to our meeting place and time. We can certainly use the help of ALL of our members for this, so if you can make it, please circle your calendars for that date if you can spare a few hours in the morning to help.

Finally, don't forget our Annual Field Day the weekend of Saturday and Sunday, June 24th and June 25th. It will be at a totally new, great location thanks to our Field Day Director, Steve, KC8SOY who will be giving us more details.

Our next monthly club meeting will be on Tuesday, May 16th at Davidson's Restaurant, 3636 Canfield Road, Canfield, OH 44406. We have dinner at 6:00pm EDT and start our meetings at 7:00pm EDT. The scheduled guest speaker is Bill Fraedrich, WB9LBI, whose topic will be "Morse Code – It's History and Usage." This should be a very interesting and informative topic and we encourage all of our members to attend.

All of our members, licensed Amateur Radio Operator non-members, or anyone interested in learning more about the hobby/service and WRARC are welcome to attend. Until then,

73, Joe, W0JO,
VP/WRARC

The man flying the 3 kites is in his 80s, and he's from Canada. He comes to the Washington State International Kite Festival every year. His skin is like leather as he normally flies with his shirt off. He is deaf, so when he flies we hold our hands up and wave them for applause. He flies 2 with his hands and the 3rd one is attached to his waist. Enjoy!
You must watch to the end to see the amazing landing of that last kite! I would have those kites so tangled up, you could never get them separated again! And of course, make sure the volume is turned up because the music is wonderful and totally reflects the soaring of the kites. Beautiful

http://www.youtube.com/watch_popup?v=nr9Krqn_Ig

WHAT'S COMING UP?

- May 06 **WRARC Day at DX Engineering**
- May 09 Board Meeting
Board meetings are open to all interested members.
- May 13 **Community Service Event, 446 Road Clean up**
- May 16 Member's Meeting
Speaker: Bill Fraedrich, WB9LBI,
Topic: Morse Code – It's History and Usage

- June 04 **Youngstown Marithon**
- June 09 Board Meeting
- June 20 Member's Meeting
Speaker Stephen Chalmer
photography professor at YSU
- June 21 Testing @ American Red Cross 3530 Belmont Ave #7
- June 23 Field Day set up
- June 24 Testing 10 A.M.@ Field Day
- June 24, 25 Field Day

- Aug 16 Testing American Red Cross 3530 Belmont Ave #7
- Aug 27 **Panerathon 2017**

- Sept TBD Community Service Event, 446 Road Clean up
- Sept 19 Member's Meeting
Speaker: Tom Sly, WB8LCD,
Topic: QRP Operating and Equipment.

- Oct 07 Walk To End Alzheimer's - Tentative
- Oct 18 Testing American Red Cross 3530 Belmont Ave #7,
- Oct 22 Youngstown Peace Race - Tentative



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



Avnet, Allan AB8AA	Antennas, radio setup, mobile, grounding, classes, anything	ab8aa@arrl.net
Beatty, Dave KC8WY	anything	kc8wy@zoominternet.net
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Wojtowicz, Joe W0JO	ICOM radios, D-Star	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

May 05	Maureen, KD8NXS
May 12	This could be you
May 19	Dave, KE8ALR
May 26	Roy, KD8IJF

June 02	Rose, KD8TII
June 09	This could be you
June 16	This could be you
June 23	Bill, KD8HCQ
June 30	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

1st Monday 8.40 PM ET W8QLY Repeater - 146.745 (PL 110.9)

&

3rd Monday 8.40 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, N8SY, W5YI, the ARRL and the World-Wide Web.

COMMUNITY SERVICE EVENT

The road cleanup on Route 446 our adopted highway in Canfield will be May 13, 2016 We usually meet at the Perkins on Rt 224 at 8:30 A.M. for breakfast. We then meet, around 10:00, across from the fairgrounds where 46 and 446 meet to get our vests and bags. Will need 8 to 9 volunteers. Our cleanup area is just short of 2-miles.

Guide-lines for Highway Cleanup

What to wear

1. Dress for the weather
2. light colored clothes
3. a safety vest (supplied by ODOT)
4. work type shoes
5. heavy gloves
6. hat & long sleeved shirt
7. bring a bottle of drinking water
8. if you have a pick up device bring it



Parking your car:

1. a least 10 feet from traveled surface, we also can park inside the fair grounds.
2. cars along side highway should leave their 4 way flashers on.

Safety:

1. work facing traffic
2. work daylight hours only
3. before starting be sure signs are posted correctly
4. do not wear headset radios or tape players
5. do not pick up items from traveled portion of highway
6. do not pick up heavy objects
7. do not pick up roadkill

Other:

1. ODOT will provide trash bags
2. ODOT will provide safety vests (which must be returned)
3. ODOT will pick up filled trash bag after we are done

A complete copy of the Safety briefings will be available to each of you on Saturday May 9, 2015. See you at Canfield Perkins that morning. This will be a good event for our environment and will be fun for all. We should be



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

COULD THIS BE YOU?

Could this be YOU? This is the Wave Bender 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 next month!!



2017 FIELD DAY

Here it is early May already and this year's Field Day is just right around the corner. It's time to think about what you will be doing for the day. This year's event will be on June 24-25 at The Braking Point Recovery Center on Route 46 in Austintown. As usual, we will be having a big picnic style dinner at about 6 P.M. on Sat., June 24.

This evening meal is a potluck with the club providing the hamburgers and hot dogs. The rest is a variety of dishes brought by each of our households/families and we always eat very well! To ensure a good variety, we always have a sign up sheet for each family or individual member to indicate what they want to bring. The sign up sheet will be circulated during the general meetings this month (May) and next month (June). There will be some capacity for electrical power for things like crockpots, roasters, etc. if you should choose to bring a hot dish. If you are planning to use one of these, please indicate hot or cold dish in the designated spot on the sign up sheet and remember to attach an extension cord to your appliance to be sure it can reach an available outlet. Please be sure to keep all cold dishes on ice in a cooler for the length of time you are there as it is likely to be very hot that day.

Please be thinking about what you would like to bring before the general meeting this month so that you are ready to sign up. You can sign up on the list at the meeting or you can call me at 330-398-1303 to be added to the list, or you can do this by sending me an e-mail at mfstein@zoominternet.net. Additionally, it is a good time to start thinking about how you want to participate in the whole day. Please consider coming out to work the HF bands for the contesting portion of the weekend, on your own equipment or by spelling off someone else on theirs for a while. The more participation the better. Please let Steve KC8SOY know if you are planning to camp out for the weekend or if you are bringing equipment to operate on. This is so all the logistics can be planned out.

Lastly, as we did last year, we are having a basket raffle once again. There will be some really good prizes to choose from to take a chance on, so be sure to bring a little extra cash with you that day. Tickets will be one for \$1.00 or six for \$5.00. Prize items will be some purchased by the club and some donated by area businesses. All in all, it's a great weekend. Plan to come out and participate! Let's surpass last year in every area!

73, Maureen, KD8NXS



I know that a lot of you are already deep into planning your Field Day activities as well as getting everything ready for that big weekend, well I have some additional goodies for you.. I have the Ohio Governor's Proclamation posted on the website.. Thanks to our State Government Liaison, Bob Winston, W2THU we have it and it's posted on the website.

There's also a suggested Press Release there as well as a lot of other information about Field Day too. Go take a look: http://arrl-ohio.org/FD_Message.html

Oh, and don't forget to have someone assigned as a photographer! You'll want pictures and so do I.. Please, let's have as many pictures of our Field Day sites as possible. Remember, I use a lot of these pictures for the Ohio Section Banner that's displayed everywhere! So, get the dusty old Brownie Box Camera out of the closet and get it all tuned up and ready to take a mountain of pictures of your site and all the people at it having FUN!!

N8SY

CQ CQ CQ FIELD DAY

This year's Field Day 2017 for the WRARC is a new location in Austintown Ohio. For WRARC it is an open site with a lot of space and paved parking. Our new location is at 45 North Canfield Niles Road start route 46 just north of Mahoning ave. The location Business is Braking Point Recovery Center. We will have our Banner near the street at Rt. 46, at the north entrance to the property. There is plenty of parking and camper space and tent space as well. For the field Day weekend, please wear your Club wear.

Everyone is Welcome to our Field Day site, Ham or not, invite your friends and neighbors to come and hear what Ham Radio is all about. If there are any Questions about the site or where it is, you may call or text me, Steve KC8SOY, 330 774 6346, or contact Darrin Cannon, N8DMC, co-Chairman <darrincan@gmail.com> .

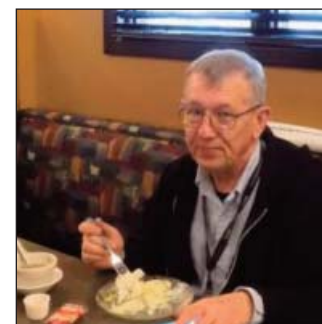
There is a tree line and a way we can have Dipole pole antennas. For the weekend there will be special sign up sheets for our GOTA station. You may start to bring in your campers in Wednesday, June 21 if you wish, as there is a lot of space. There will be two thank you cards set aside for everyone to sign for the use of the property.

For every year at our Field Day site the number One item is SAFETY comes first if you see a problem with anything you think is a hazard, please make mention of it to me, Darrin, or one of the WRARC Officers. We do not want anyone to get hurt in any way at our site. Darrin or I will be looking for safety officers, which will include bad weather officers and an electrical inspection officer for our site. If you wish to volunteer to help set up or to be a safety officer check with me or Darrin.

We have special permission from the local Fire Chef to have a raised fire pit or two at the location. The fire pit must be twenty feet from any combustibile items. If you have a fire pit or some spare fire wood, bring one, also bring some marshmallows and dogs to make our site a fun weekend for everyone.

I hope that everyone in our club will make it to Field Day this year. I am not asking you to operate, but please come out to have a fun weekend with your Club members. The big top tent will be at the site for our dinning and testing, and KC8WY his operating station the Porta John.

As at every location we have for Field Day, we have special permission to be on the property, so please, keep the property neat 'n clean. The second item for our site this year is to have a good time. Remember this is your club make the best of it, Thank You,



73, KC8SOY, Steve

MAGNETIC SIGNS

At a recent Board meeting there was a discussion about purchasing magnetic communications signs to use when we are out doing Community or Public Service events, to help identify our volunteers. The Board has found signs that will work very well. The Board had originally said these signs would cost members about \$10, but the actual cost is \$15 each. Not a bad price, but having told the membership the signs would be \$10 it was decided to sell them to any interested member for \$10 with the club picking up the additional \$5. What a bargain! Contact any officer to purchase yours. With an active volunteering schedule during the upcoming summer months, these signs will come in handy doing their job, identifying you as a WRARC Volunteer.



Amateur Radio



Field Day

June 23-25 2017

From SAT 2:00 P.M. to SUN 2:00 P.M.

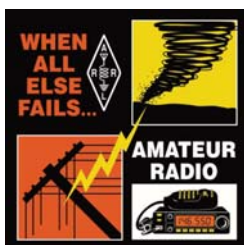


HAM RADIO

2017 Field Day will be held at the
Braking Point Recovery Center
45 N. Canfield-Niles Rd
Austintown, Oh 44515

EVENT OPEN TO THE PUBLIC - VISITORS ARE WELCOME!
North parking and lawn
signs will be posted at street

On the fourth full weekend every June is when Amateurs across the US, Canada, and around the globe light up the air waves for "American Radio Relay League" ARRL Field Day! During the Field Day period, thousands of Amateur stations are in constant motion, making contacts, greeting guests, working with the public and media, and simply introducing the broad range of this magic we call Amateur Radio to the public. And hopefully the next generation of Operators. As the largest single weekend of Amateur Radio annually in the US, Field Day has something for everyone. There are new experiences for even the veteran operator – from new digital modes to explore to new antennas and equipment to try. It's also very important to make new friends with visitors and other Hams in the area. So we welcome all to our Field Day site as you may learn more about our Service, Hobby, and Club activities.



For any information on this event or WRARC
 Contact Field Day Chairman:
 Steve Fabry, KC8SOY - 330-774-6346 or KC8SOY@yahoo.com
 or Field Day Co-Chairman:
 Darrin Cannon, N8DMC - n8dmc@wrarc.net

*Please include in e-mail header "field day info"



www.wrarc.net www.arrl.org/field-day www.facebook.com/WesternReserveAmateurRadioClub

PLEASE DO NOT CONTACT THE RECOVERY CENTER FOR EVENT INFO!

SWAP'N SHOP

Antennas, Tower, and Radios plus other stuff for sale

Cushcraft Model XM-520 20 Meter 5 El Beam	\$100
Kenwood TH-22AT 2 Mtr HH	\$ 25
Nye Viking, MBI-001 Tuner,	\$100
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
Astron Power Supply Model VS-35M	\$ 75
Pyramid Power Supply model PS-25	\$ 50
Swan SWR-1A SWR/ Pwr Meter	\$ 10
Andrew F4PNMV2-HC N Male connector	\$ 10 ea
Hy-Gain HG-52SS tower, Good Condition	\$500
Cushcraft X-7 Tri band beam	\$300
Hy-Gain 6 Meter beam	\$100
Hy-Gain Ham IV Rotor	\$400

Code Keys, MFJ and Misc. Equipment for sale

Bencher ST-1CW Paddle	\$ 70
Coax Switches (3)	\$ 10 ea
Code Keys Straight (3)	\$ 10 ea
Code Key McElroy Streamkey Model 200	\$ 25
Code Key J-37 key on a J-44 Base	\$ 20
Dentron Jr. Monitor	\$ 45
HEIL ICM Mike	\$ 40
Icom AH-4 Auto Tuner	\$150
Icom IC-MB5 Mounting Bracket	\$ 20
Icom IC-AG1 430Mhz Preamp	\$ 25
KENT Single Paddle	\$ 65
MFJ MFJ-204B Antenna Bridge	\$ 30
MFJ MFJ-906 6 Mtr Antenna Tuner	\$ 50
MFJ MFJ-9040 40 Mtr CW transceiver	\$100
MFJ MFJ-971 Antenna Tuner	\$ 65
MFJ MFJ-492 Memory Keyer	\$ 50
MFJ MFJ-464 CW Reader/ Keyer	\$100
MFJ MFJ-105B 24 hour Clock	\$ 10
MFJ MFJ-484 Grandmaster Memory Keyer	\$ 45
MFJ MFJ- 812 VHF SWR/ Power Meter	\$ 10

Heathkit and Ten-Tec Equipment for sale

Heathkit HM-9 QRP Wattmeter	\$ 40
Heathkit HFT-9A Antenna Tuner	\$ 40
Heathkit HG-10 VFO	\$ 40
Heathkit AM-2 SWR/ Power Meter	\$ 20
Heathkit HM-11 SWR/ Power Meter	\$ 20
Heathkit SB-600 Speaker	\$ 25
Heathkit IM-10 VTVM	\$ 25
Heathkit DX-60 10 thru 80 Meters HF	\$ 75
Heathkit 75 Meter Single Bander	\$ 75
Heathkit GR-88 152-174Mhz Receiver	\$ 10
Heathkit VTVM Model IM-11 (A)	\$ 25
Heathkit HS-24 Speaker	\$ 10

Continued page 11



SWAP'N SHOP - CONTINUED FROM PAGE 10

Ten-Tec OMNI VI HF Model 563	\$500
Ten-Tec Argosy II Model 525-D	\$250
Ten-Tec Antenna Tuner Model 247	\$ 50
Ten-Tec Kit Shortwave Receiver Model 1253	\$100
Ten-Tec Kit 6 Mtr Transverter	\$ 40
Ten-Tec Power Supply 252G	\$ 45

HY-Gain HG-52SS tower, HY-Gain Ham IV Rotor, HY-Gain Explorer 14 Beam with the QK-710 40 Meter add-on kit, and HY-Gain DB-12/17 meter. Price for all \$1000.
 Tip over 50 foot tower, HY-Gain Ham TAILTWISTER Rotor, Cushcraft X-7 beam, and Cushcraft 5 EI 6Meter beam. Price for all \$ 900.

Trailer 16 foot car hauler with or without Tower and adaptor. \$350

Free to good home

Old QST 1937 - 1938 - 1953
 Several years if QEX Old & New
 Entertainment Center

Will accept all reasonable offers.
 Misc tower parts, lots contact me if interested.
 AI, AB8AA, 330-207-3296 or ab8aa@arrl.net



BIRTHDAYS THIS MONTH

- | | |
|--------|--------------|
| K8LEA | Stu Mulne |
| KE8EYE | Debbi Breen |
| W8LTB | Les Breen |
| KD8JMO | Roy Dyckman |
| KD8IJF | Roy Haren |
| K2GRG | Greg Jackson |



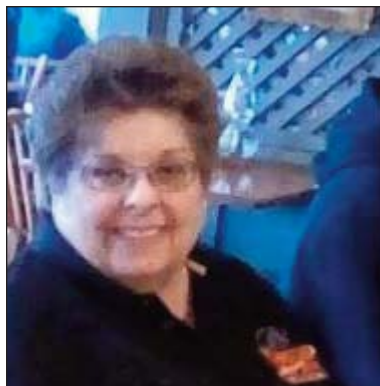
WRARC club meetings should not be like a movie where you pay \$15, eat popcorn and watch the screen for an hour and go home.

For WRARC to grow,
 we need active members who are willing to participate.

I know that some of you have skills that if presented at a meeting would make us better Amateur Radio Operators, and/or volunteer for our upcoming events.



OUR FIRST PUBLIC SERVICE EVENT OF THE YEAR



On Sat., April 15, 2017, we had our first public service event of 2017. It was the "Make the First Five Count" 5K Walk/Run for the Easter Seal Society, held at Boardman Park the morning of the 15th. The weather was warm but overcast. The rain held off so the event could go on. We had a good turn out of our members for the size of the course and for the fact that it was the day before a major holiday. This one is a smaller event than some of the other ones we do.

Many thanks to the following club members who participated: Joe Wojtowicz W0JO, Stan Adamski KB3WPD, Les Breen W8LTB, Debbie Breen KE8EYE, Darin Cannon N8DMC, Steve Fabry KC8SOY, Roy Haren KD8IJF, Rose Marko KD8TII, Maureen Stein KD8NXS, Bob Mitzel N8RCM, Terri Mitzel N1TAM, and Dave Moore KE8ALR. Also joining with us were Keeley and Bowen Maples, Bob and Terri's grandchildren who were very, very well-behaved, Awesome job, guys! All the more fun, we got to sing "Happy Birthday" to Les Breen in the parking lot at the end of the event. Thank you, again, Les, for coming out to help on your birthday. I hope you had a good rest of the day.

The Walk/Run went off very well with no mishaps for the runners/walkers or the organizers and the event was a relatively short one. We did not experience any big difficulties with our working of the event. We had a couple of easily handled glitches and it was a good first time out for this year. Race participants were men, women, babies in strollers, and even some family pets on their leashes.

Our next event will be the Youngstown Marathon on Sun., June 4, 2017. We will need as many club members as possible to come out for this one. It is a much longer course and needs more coverage than the Easter Seal event. Please, all, consider coming out to help. You are most definitely needed!

73, Maureen, KD8NXS

APRIL YL BREAKFAST

On April Fools Day Rose, KD8TII; Donna; Shirley, KD8SSB; Maureen, KD8NXS, and Jane, K8JAA, met for the monthly YL breakfast at Cracker Barrel in Austintown. The day was gloomy, but you wouldn't have noticed it at our table. Lots of fun gossip, no we didn't talk about those who weren't able to attend, though we did miss seeing you. We decided one mystery gift would be enough from now on. A couple of us opted out entirely. You don't have to be a Ham to join us.



A NOTE FROM ROSEMARY



I am starting my article for the month of May by thanking Terri Mitzel for her suggestion back in September 2016 of having a Saturday monthly breakfast for the ladies of our club. We started the breakfasts on Saturday, October 1st. Terri was able to join us for the first breakfast and brought door prizes with her to make the event more enjoyable. Since that time, I have been able to continue doing what she started and have been enjoying myself in the company of all the ladies who have been attending, and I know they have enjoyed themselves, too.

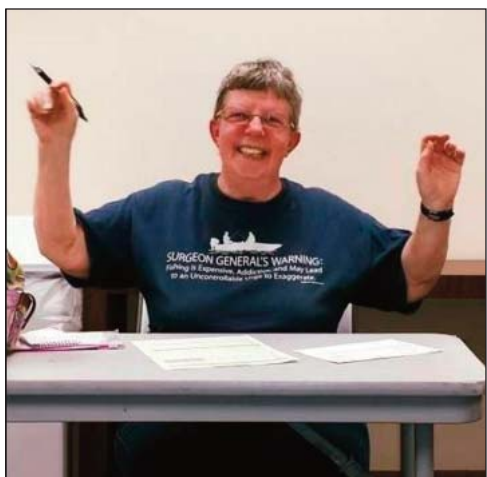
But now that our summer events are here, the first one being the Easter Seals Walk/Run, which was April 15th, they will be taking up most of our member's time along with their own individual summer plans. Therefore, I have decided to put our monthly breakfasts on the back burner, so to speak, until October or November 2017.

Getting back to the events, I participated in the Easter Seals Walk/Run and am looking forward to doing the same in some of the other events, like the Community Service Event on May 13th in Canfield, the Youngstown Marathon on June 4th, which is brand new to us this year, Field Day in late June, and the Panerathon on August 27th. Toward the end of summer, we'll also have another Community Service Event in September, and in October, the Walk to End Alzheimer's. These events are a great way to show our communities that ham radio clubs are the best way to help out in times of emergencies, should something terrible happen.

I hope to see all of our members and members from other clubs assisting us at these events, because we sure can use the help.

I wish everyone a safe and happy summer, and I will see all of the ladies in the fall.

73
Rose
KD8TII



**Congratulations to Rosemary -
she is now a General**

**Thanks to those VEs who came out and
helped with the April Test Session.**

**Two Test Sessions in June
6/21 6:30 P.M. @ Red Cross
6/24 10:00 A.M. @ Field Day Site
Contact AB8AA 330-207-3296
for either session**

HANDBOOK GIVE-AWAY

We had a great response this month with over 2,000 folks registering sfor the Give Away.. Now, I'm sure all of you are wondering just whowon... So, without further delay.. It's Al (Rocky) LeRoy, W8RKY from Vienna. Congratulations Al !!! The Handbook is going out today to you.

The drawing is over for this month, but keep stopping back to the website to see just when that big red arrow appears.. That's yoursignal that the drawing is back on!!

Scott Yonally, N8SY

REVISED MEMORANDUM OF UNDERSTANDING BETWEEN ARRL AND FCC



ARLB012Still a Work in Progress

The ARRL Executive Committee (EC) has directed that work begin on finalizing the language of a revised memorandum of understanding between ARRL and the FCC regarding the Amateur Auxiliary (Official Observer) program. The EC met on March 25 in Aurora, Colorado. The panel, which acts on behalf of the ARRL Board of Directors between its regular meetings, heard an update on the Official Observer Program Revitalization Study from ARRL Second Vice President and committee chair Brian Mileschosky, N5ZGT, who said his committee plans to present final recommendations later this year on revamping the Amateur Auxiliary, for ultimate consideration by the full Board.

In his remarks, General Counsel Chris Imlay, W3KD, was complimentary of new FCC Chairman Ajit Pai and told the EC he thinks enforcement efforts may be more successful in the future, due to the new chairman's interest in the issue. Imlay also said the new chief of the Enforcement Bureau, Michael Carowitz, is reported to be "amateur friendly." He told the EC that he foresees a potential window of opportunity for improved spectrum enforcement work, as well as the opportunity to build a stronger working relationship with the FCC on all issues.

NVIS RESEARCH PAPER AVAILABLE

A thorough and fully annotated discussion of Near Vertical Incidence Skywave (NVIS) is available in the research paper, "Radio Communication via Near Vertical Incidence Skywave Propagation: An Overview," by Ben A. Witvliet, PE5B/5R8DS, and Rosa Ma Alsina-Pagès.

First investigated in the 1920s, NVIS propagation was rediscovered during World War II as "an essential means to establish communications in large war zones such as the D-Day invasion in Normandy," the paper notes, adding that the US Army subsequently sponsored a lot of NVIS field research, especially between 1966 and 1973. More recently, NVIS has become a popular means to enable close-in communication on Amateur Radio HF bands between 3 and 10 MHz. NVIS can be used for radio communication in a large area (200-kilometer radius) without any intermediate manmade infrastructure, and it has been found to be especially suited for disaster relief communication, among other applications, according to the paper.

"A comprehensive overview of NVIS research is given, covering propagation, antennas, diversity, modulation, and coding," the Abstract explains. "Both the bigger picture and the important details are given, as well as the relation between them." As the paper describes it, in NVIS propagation, electromagnetic waves are sent nearly vertically toward the ionosphere, and, with appropriate frequency selection, these waves are reflected back to Earth.

"The great reflection height of 80 to 350 kilometers results in a large footprint and homogeneous field strength across that footprint," the paper says. "Due to the steep radiation angles large objects such as mountain slopes or high buildings cannot block the radio path."

As for NVIS antennas, the paper stipulates that important parameters are antenna diagram, polarization, and bandwidth. "As only high elevation angles contribute to NVIS propagation, optimizing the antenna diagram for these elevation angles will increase the effectively transmitted power and improve the signal-to-interference ratio at reception."

The ARRL Letter for March 30, 2017

SAME-BAND "DUELING CQs" NOW PROHIBITED IN ALL ARRL CONTESTS

ARRL has clarified its rules for all contests to clearly prohibit the practice of interleaved CQs -- also known as "dueling CQs" -- on two or more frequencies in the same band. The clarification is an extension of existing rules that permit only "one transmitted signal," and it formalizes what had been a "gentleman's agreement."

"ARRL reviewed it, concurred that this is technically occupying two channels, and in consultation with several members of the Board of Directors -- who had been contacted by concerned parties -- and the Programs and Services Committee, it was concluded we needed to 'clarify' our existing rules," ARRL Contest Branch Manager Bart Jahnke, W9JJ, said.

An explanatory paragraph points out, "The intent of the rules has always been that a participant would use/occupy only a single channel in a given band, changing frequency in band from time to time, leaving a CQ frequency to work a multiplier or to change the CQing frequency as band occupancy or changing propagation dictated, and this rule's clarification will now give the needed added clarity to that intent."

The issue arose when a multioperator team successfully employed in-band interleaved CQs in the last ARRL International DX SSB event, substantially boosting their score.

The topic subsequently occupied a lot of bandwidth on the CQ-Contest reflector, where elite contester Frank Donovan, W3LPL, observed, "That doesn't make it right for [a contest station] to follow this practice that is generally understood to be unacceptable behavior by all of the rest of us." At the time of the event, however, ARRL rules did not explicitly prohibit the practice, and, as another top contester, Steve London, N2IC, asked, "Falls under the 'what is not specifically prohibited is allowed' rule?"

The update brings ARRL's contest rules in line with those of CQ-sponsored contests, which already prohibit the practice of in-band, interleaved CQs. The IARU HF Championship Contest bans the practice for multioperator entries. Read more.

<http://www.arrl.org/news/same-band-dueling-cqs-now-prohibited-in-all-arrrl-contests>



NIMS / ICS TRAINING



The numbers are growing! Ohio ARES folks realize that they need to be properly trained, and you don't get that by just being a bystander or having an HT in your hand! It takes some additional effort on your part! Having these numbers grow every day proves that we are doing this for the right reasons. We need these courses, and we need to continue our education. It doesn't stop just because we got our Amateur Radio license. In fact, it just starts there! Stan and I have added a new wrinkle to all of this just this past week. We have joined with Ohio Responds. Now by doing this we have an obligation to fulfil a requirement of theirs, which is to have these 4 courses in. Now, what is Ohio Responds you ask? And how does this affect me? Stan and I will dive into that subject a little later. But know this, it will definitely have a great benefit for the Ohio Section, and YOU!!

Here's the latest count we have on everyone.. Total amount of active members in the database is 711. The total amount of members completing all 4 required NIMS courses 511 and the total Number of the Courses taken by everyone in the database is 4777. We're now over the 500 mark, but that's only about a third of the Ohio ARES membership. Now the push is on to get all the others to join in as well.

Here's the link so that you can find out if your name is on the list. This list is being updated pretty regular, so if you don't see your name on it, and you have just submitted your certificates, please be patient.

http://arrl-ohio.org/SEC/special/nims_roster.html

Continued page 16

NIMS / ICS TRAINING CONTINUED FROM PAGE 15

Now, I want to talk to the folks in border counties of Ohio, you may be registered in our other surrounding Section ARES programs (Kentucky, West Virginia, Indiana, Pennsylvania or Michigan) and that's ok.. They may, or may not require the 4 basic courses for ARES membership, BUT Ohio does! Please send me, and your EC, copies of your certificates, regardless of another Section's requirements.

Also, for those outside of Ohio in the bordering states, if you have these 4 courses in, please feel free to send me copies of your 4 certificates and we'll be very happy to get them entered into our database as well. Please make sure that you have your call sign either in the email or as part of the file name on the certificate.

For those just starting out, we have a webpage with all the information about how to get started.. <http://arrl-ohio.org/SEC/training.html>. This page contains a lot of information about what is needed. Each course takes about an hour or so to take, that's really not much to ask now is it? You spent way more than that to get your Amateur Radio operators license!

Now here's a link that Ed, KE8ANU found that breaks it all down for you as to what the classes are: <https://training.fema.gov/emiweb/is/icsresource/trainingmaterials.htm> Thanks Ed..!!

And here's an additional link to the FEMA First Responder Catalog www.firstrespondertraining.gov Thanks Michael, N8QHV

73, Scott, N8SY..

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ARMED FORCES DAY CROSSBAND MILITARY/AMATEUR RADIO COMMUNICATIONS TEST IS MAY 13

ARLX004 - The US Army, Air Force, Navy, and Coast Guard will sponsor the traditional military/amateur radio communication tests on Saturday, May 13 to mark the 66th annual Armed Forces Day (AFD). Armed Forces Day is May 20, but the AFD Crossband Military-Amateur Radio event will take place a week earlier in order to avoid schedule conflicts with those attending Hamvention.

Complete information, including military stations, modes, and frequencies, is available on the US Army MARS website at, <http://www.usarmymars.org/home/announcements> .

The annual celebration is a unique opportunity to test two-way communication between radio amateurs and military stations (authorized under Part 97.111 of the Amateur Service rules). It features traditional military-to-amateur crossband SSB voice, CW, practice using legacy interoperability waveforms, and the opportunity for participating hams to utilize more modern military modes, such as MIL-STD Serial PSK and Automatic Link Establishment (ALE). Military stations and Amateur Radio stations are authorized to communicate directly on certain 60-meter interoperability channels - 5,330.5, 5346.5, and 5,371.5 kHz.

These tests give Amateur Radio operators and shortwave listeners a chance and a challenge to demonstrate individual technical skills and to receive recognition from the appropriate military radio station. QSL cards will be available for stations successfully contacting participating military stations.

The Armed Forces Day message will be transmitted via Military Standard radioteletype modes (MIL-STD 188-110A/B). Software is available to demodulate the military serial PSK waveform, and detailed instructions can be downloaded from, http://www.n2ckh.com/MARS_ALE_FORUM/MSDMT.html . Utilizing this mode with soundcard equipment can be challenging; review the instructions carefully.

A short practice transmission will be sent at 1930 and 2330 on May 6, 7, 10, and 12 on 13.506.5 MHz USB and 17.443.0 MHz USB.

Military FSK is Baudot at 850 Hz, 75 baud, low mark, and 2000 Hz center. Most RTTY programs can be set to decode this mode. To achieve low mark while receiving in USB, select reverse shift.

QSL cards are available for individuals that receive the Armed Forces Day test message. To receive a card, copy the printed text of the test message as received from the military station, and include it in your report. No attempt should be made to correct possible errors.

Continued page 17

ARMED FORCES DAY - CONTINUED FROM PAGE 16

Stations copying Armed Forces Day messages transmitted from US Army and US Navy stations and requesting a QSL card, can complete the QSL report form online at, <http://www.usarmymars.org/>. Stations copying the Armed Forces Day message transmitted from US Air Force stations and seeking a QSL card should send a request to Armed Forces Day Celebration, Chief, Air Force MARS, 203 W. Losey St, Scott AFB, IL 62225.

Include a transcript of the received text, time observed, frequency observed, military station call sign, your full name and Amateur Radio call sign (if applicable), full mailing address (including ZIP code).

Stations with Automatic Link Establishment (ALE) capability can contact a military station on specific half duplex crossband channels established for this purpose. ALE is a selective calling and linking method utilized by government, military, and amateur radio communications. Military stations will scan and receive certain amateur HFLINK ALE frequencies and transmit on the corresponding military ALE frequency. Military stations will also transmit ALE station identification (soundings) on each military frequency at 30- to 90-minute intervals. Amateur stations may scan military frequencies and monitor the soundings to build the LQA database or select the channel manually. Amateur stations will call military stations using ALE selective calling on one of the paired cross band channels.



AMATEUR RADIO LINKS SEARCH FOR AMELIA EARHART'S PLANE WITH ISS CREW



One of the enduring mysteries of the 20th century was the 1937 disappearance of famed aviator Amelia Earhart and her flight companion and navigator Fred Noonan, while she was attempting to circle the globe. It appeared that Earhart's plane went down in the South Pacific in the vicinity of Howland Island; her last-known radio transmission came from there. On February 18, a team from Nauticos -- with stratospheric explorer Alan Eustace and aviation pioneer Elgen Long, W7FT -- departed Honolulu for the vicinity of Howland Island, some 1,600 miles to the southwest, to complete the Eustace Earhart Discovery deep sea search for Earhart's lost Lockheed Elec-

tra. Nauticos provides ocean technology services to government, science, and industry. Tom Vinson, NY0V/mm, on the Mermaid Vigilance, with Education Officer Sally Smith.

The team has been conducting a sonar survey of about 1,800 square miles of sea floor where it's believed the aircraft may rest, and Amateur Radio has provided a means to link the crew of the research vessel Mermaid Vigilance with youngsters following the expedition, as well as with the International Space Station (ISS) crew.

Among those involved in the Earhart search is ARRL Midwest Division Director Rod Blocksome, K0DAS, of Iowa. Earhart was born and raised in Kansas and lived in Iowa and Minnesota. Bryan McCoy, KA0YSQ, of Iowa, also is on the Mermaid Vigilance, which is carrying out the deep-water sonar search for the lost aircraft. The team is using autonomous underwater technology provided by the Woods Hole Oceanographic Institution to image the ocean floor nearly 18,000 feet below. On March 17, the team launched the REMUS vehicle to search the depths of the Central Pacific.

On March 20, another Midwesterner -- Tom Vinson, NY0V, of Minnesota -- joined other crew members in making contact with US Astronaut and ISS Commander Shane Kimbrough, KE5HOD, who was at the controls of NA1SS aboard the ISS. A couple of Russian-speaking crew members also had the opportunity to speak with one of the cosmonauts on board the ISS. Teacher Kathy Lamont, KM4TAY (right), with her fifth graders, as they speak with Vinson on board the Mermaid Vigilance.

Earlier, on March 15, Vinson assumed Kimbrough's role to host a question-and-answer session of his own, with Virginia fifth graders in the classroom of teacher Kathy Lamont, KM4TAY, an alumna of ARRL's Teacher Institute. The contact was routed over 20 meters from the vessel to Hawaii, and then via EchoLink to Virginia. "My kids had a lot of fun," she recounted later. Vinson said that promoting science, technology, engineering, and mathematics (STEM) education "is what we're all about," with support from Rockwell Collins.



ARRL ENTRY-LEVEL LICENSE COMMITTEE DIGS IN TO STUDY SURVEY RESULTS

As its April 7 online survey deadline approaches, the ARRL Board of Directors' Entry Level License Committee is preparing for a deep dive into what turned out to be an overwhelming response. Committee Chair and New England Division Director Tom Frenaye, K1KI, said the survey's 8,000 responses, when perhaps 1,500 were anticipated, reflects the high degree of interest in the overall topic. Established by the Board in 2016, the Committee has been gathering input from the Amateur Radio community with an eye toward recommending either a makeover of the Technician license or an altogether new entry-level Amateur Radio license class.

"I think it's our job to come up with the two best proposals," said Frenaye, conceding that the committee's work is fraught with details that include reaching a consensus both within the Amateur Radio community and at the FCC, which pays little attention to Amateur Radio generally. For his part, Frenaye started out thinking that a new entry-level license would be the answer, but now he's leaning more toward changing up the Technician license, in part because he thinks the FCC may be reluctant to create a fourth license class after whittling the number to three in 1999.

It's not just about numbers, but Amateur Radio's future. Amateur Radio growth, at approximately 1% a year, is "pretty good," Frenaye conceded, and in tune with US population growth, but he thinks it could be better, and a big step in that direction is to take a hard look at ham radio's entry gate. He suggested a new pool of prospective radio amateurs might be more drawn to the hobby from the Maker movement, for example, or from among those who tinker with computer technology or experiment with electronics -- areas with high appeal to some young people.

Frenaye said a lot of young newcomers don't seem to find the current license manual very enticing, possibly due to the Amateur Radio terminology and the manual's 12th-grade reading level, which he believes should be lower. One interesting statistic plucked from the survey: Just 23% of recently licensed Technicians went through a club, while 65% studied on their own.

The current Technician license is mainly a VHF/UHF license, Frenaye pointed out, with limited privileges on HF, where he believes a lot of newcomers would prefer to operate. "Either the test covers material that's not needed for a newcomer, or the privileges don't match well enough with what a newcomer needs to see in ham radio in order to decide whether to continue," he said. Technician licensees have only CW privileges on HF below 10 meters, "and CW isn't even a requirement anymore," Frenaye pointed out. He suggested some HF digital privileges may provide one incentive.

The Entry-Level License Committee wants to see better outreach "on both sides of the license" -- from exam preparation to operator training and mentoring.

Whether it's retooling the Technician license to offer newcomers a larger, more attractive slice of Amateur Radio privileges or developing the framework for an entirely new entry-level license, the panel wants to see a more relevant examination with privileges more appropriate to newcomers and better outreach "on both sides of the license" -- from exam preparation to operator training and mentoring.

Frenaye is not afraid to respond to critics who say the entry-level license effort and such initiatives as reaching out the Maker Movement are just ARRL ploys to boost the Amateur Radio population and, in turn, League membership.

"I guess the answer to that is, 'Yes, what's wrong with that?'" he said. "The more trained ham radio operators we have, the more likely we are to actually be able to keep our bands and maybe get new ones."



ARRL New England Division Director Tom Frenaye, K1KI, at the January 2017 Board of Directors meeting. New England Division Vice Director Mike Raisbeck, K1TWF, is seated behind him [Steve Ford, WB8IMY, photo]

Continued page 19

STUDY SURVEY RESULTS - CONTINUED FROM PAGE 18

The committee has only looked at the first "several thousand" survey responses, Frenaye said. The hard work lies ahead. "It's going to take a little time to sort through it all," Frenaye allowed, adding that the committee hopes to have a report to the Board of Directors in July.

WHY IS THIS NEWSLETER SO LATE?

We were in Missouri visiting family over Easter, what fun! Six great grand kids 6 and under 'finding' Easter Eggs. But, that made the Wave Bender really late. Sorry for that, we didn't get back until 4/30. So I wasn't at the meeting to take pictures, we couldn't be at the test session, and we weren't able to volunteer to help with the "Make the First Five Count" event. We don't miss many opportunities to volunteer. These events are valuable practice for how to act during a net. Public service is my personal Amateur Radio passion that, and helping with testing (the reason I'm an Extra.) Just my way of giving back to the hobby/service.

I thought I'd be able to work in the Newsletter while visiting, as both our Son, Jay, and his wife, Cindy, continued to work while we visited. That didn't work, because the program I use for the newsletter, decided not to work on my laptop. The best-laid plans of mice and men often go awry. (Robert Burns paraphrased)



I read that 4,153,237 people got married last year, not to cause any trouble but shouldn't that be an even number?

KEEPING THE GRAY MATTER ACTIVE

This test will help you understand what the aging process does to your brain!

Here is a "difficult" test..... Wish you much luck in your answers....go slow and just think and re-think before you answer!.

1. Johnny's mother had three children. The first child was named April. The second child was named May. What was the third child's name?
2. There is a clerk at the butcher shop, he is five feet ten inches tall and he wears size 13 sneakers. What does he weigh?
3. Before Mt. Everest was discovered, what was the highest mountain in the world?
4. How much dirt is there in a hole that measures two feet by three feet by four feet?
5. What word in the English Language is always spelled incorrectly?
6. Billy was born on December 28th, yet his birthday is always in the summer. How is this possible?
7. In California, you cannot take a picture of a man with a wooden leg. Why not?
8. What was the President's Name in 1975?
9. If you were running a race, and you passed the person in second place, what place would you be in now?
10. Which is correct to say, "The yolk of the egg are white" or "The yolk of the egg is white"?
11. If a farmer has 5 haystacks in one field and 4 haystacks in the other field, how many haystacks would he have if he combined them all in another field?

Here are the answers:

1. Johnny of course
2. Meat.
3. Mt. Everest; it just wasn't discovered yet. [You're not very good at this are you?
4. There is no dirt in a hole.
5. Incorrectly
6. Billy lives in the Southern Hemisphere
7. You can't take pictures with a wooden leg. You need a camera (or a cell phone) to take pictures.
8. Donald Trump [Oh, come on ?.]
9. You would be in second.. Well, you passed the person in second place, not first.
10. Neither, the yolk of the egg is yellow [Duh]
11. One. If he combines all of his haystacks, they all become one big stack.

You can go back to sleep now! ZZZZZZZ

**With so many things coming back in style. . .
I can't wait until morals and intelligence become a trend again.**

May 2017

PREPAREDNESS LEADS TO READINESS - MATT W8DEC



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 ARES Net 8:30 PM 146.745 PL 110.9	2	3 Skywarn Net 8:30 P.M. 146.745 DMR net 50.400 AM mode	4	5 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	6 DX Engineering
7	8	9 Ham Breakfast Eat'n Park Boardman 8:30 A.M. Board Meeting Eat'n Park Auatintown 7:00 P.M.	10 DMR net 52.525 FM mode	11	12 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	13 Road Clean up 
14 	15 ARES Net 8:30 PM 146.745 PL 110.9	16 WRARC Meeting 7:00 P.M.	17 DMR net 50.125 USB mode	18	19 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	20  WaveBender Input Due
21	22	23 Eat'n Park Boardman 8:30 A.M. Ham Community Breakfast	24 DMR net 52.525 FM mode	25	26 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	27
28	29	30	31 DMR net 52.525 FM mode		WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	