



The Wave Bender

February 2018

AWARD WINNING NEWSLETTER



WRARC PREZ SEZ

It was great to see so many members attending the January After the Holidays Annual Meeting/Party. We had a total of 37 people attending the event. This rousing success is due to the hard work of Rose, KD8TII, and Maureen, KD8NXS. This project took countless hours and we are fortunate to have such involved members. Our thanks goes out to them.

It is also encouraging to see so many checking in on the Net each Friday night. This past Friday there were 29 hams checking in and the week before 34. This is a great start to the New Year.

During our February 20th WRARC meeting I will have a chance to talk to you about some important issues for the club to address. Overall, we hope to get more participation at events, Friday night Nets, and at club meetings. We may be more selective in what will undertake in the future. All of this depends on the direction that the membership wants to take.



73, Brian, AB8BL
WRARC President

.....
No trees were killed to bring you this Newsletter,
but millions of electrons were terribly inconvenienced.



2018 Officers:

President: Brian Lewis, AB8BL ab8bl@wrarc.net
VP: Maureen Stein, KD8NXS kd8nxs@wrarc.net
Secretary: Stan Adamski, KB3WPD kb3wpd@wrarc
Treasurer: Rose Marko, KD8TII kd8tii@wrarc.net
Past President: Bob Mitzel, N8RCM n8rcm@wrarc.net

Trustees:

Darrin Cannon, N8DMC n8dmc@wrarc.net
 Roy Haren, KD8IJF kd8ijf@wrarc.net
 Steve Fabry, KC8SOY kc8soy@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: Bob Mitzel, N8RCM
 n8rcm@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
 Harry Harker, KD8PQK
 kd8pqk@wrarc.net

Officer's Meeting:

February, 13 2018, 7:00 P.M. At Eat 'n Park,
 Austintown, Eat 'n Park,
 5451 Mahoning Ave
 All members welcome

Members Meeting:

February 20, Davidson's
 3636 Canfield Rd., Cornersburgh
Speaker: Our Pewident, /brian, AB8BL
Topic: How to get involved



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

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**OK, Show of hands...
 Who's tired of snow?**

OTHER IMPORTANT WEB SITES**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)>

**ANTENNA HEIGHT ABOVE AVERAGE TERRAIN
 (HAAT) CALCULATOR**

[HTTPS://WWW.FCC.GOV/MEDIA/RADIO/HAAT-CALCULATOR](https://www.fcc.gov/media/radio/haat-calculator)

FROM OUR VP

Greetings everyone, we are now well into the new year. We kicked it off with a very nice After the Holidays Annual Meeting and party with some fun entertainment to set the right tone for the upcoming year. Everyone seemed to have a good time and we had a good sense of fellowship that speaks well to the great group of people we have in WRARC. It was a nice start to 2018.

Now it's time to return to the more "nuts and bolts" types of club functions for the year. These are all enjoyable too. We will resume our regular meeting nights on February 20 and each third Tuesday of every month after that. We plan to continue having interesting and informative programs at our meetings. Some will be speakers and some will likely be "hands on" types of activities, such as another session on programming our handhelds. It has been quite a while since we last did that and it may be time to do it again. If anyone has any suggestions or desires to do some other types of activities and "hands on" programs, please let either Brian AB8BL or myself know so we can try to set something up. Input from club members is always needed.

Every single club member is important and we need the active participation of everyone for WRARC to succeed and thrive. For those who haven't yet come out for a public service event or who hasn't been a Friday night net control operator, this might be a good year to do these things for the first time. To be added to the net control schedule for Friday nights, contact Steve KC8SOY. Maybe doing some of these things for the first time with a "buddy" to mentor new persons would be very helpful.

Please keep the following dates for 2018 public service events in your planners. The Youngstown Marathon will be on Sunday, June 3. The Panerathon will be on Sunday, August 26. The Peace Race will be on Sunday, October 21. The organizers of all these events have come to consider us an important part of all of them. Take care, stay warm, and hope to see you all at our next meeting on February 20 at Davidson's. Brian AB8BL, our new president will be our presenter.

73, Maureen, KD8NXS,
WRARC VP



FROM OUR TREASURER

Now that 2017 has come to an end, we can look back at all the many objectives we accomplished throughout the year and look forward to a new beginning. Here we are starting the 2018/2019 season of our Western Reserve Amateur Radio Club. WRARC members should be grateful that our new President, Vice-President, Secretary, Treasurer, and Trustee stepped up to the task of continuing a wonderful and exciting hobby.

According to our new President, Brian Lewis, AB8BL, there will be changes made and new ways of doing things throughout the year. We talked about these changes at the January board meeting and Brian will most likely bring them up again at February's General meeting as there was no general meeting in January. Instead of the meeting, we held our annual After the Holiday Annual Meeting and Party.

If you missed the party, you missed a fun-filled event. It started with dinner in which every person ordered individually. After everyone was done eating, we drew for the 50/50 raffle which David Moore, KE8ALR, won. The next drawing was for the Movie Night basket which I won. After the two drawings, New President Brian Lewis, AB8BL, introduced the other new officers. They are: Maureen Stein, KD8NXS, Vice President; Stan Adamski, KB3WPD, Secretary; Rose Marko, KD8TII, Treasurer; Steve Fabry, KC8SOY, three-year Trustee. After a short meeting was conducted, we continued having fun. There were lots of raffle prizes and door prizes to give away.

Continued page 6

WHAT'S COMING UP?

February 03	YL Breakfast at Thanos
February 13	Board Meeting - Austintown Eat 'n Park
	Ham Community Breakfast - Boardman Eat 'n Park
February 16	WRARC 8th Anniversary
February 20	Members meeting
February 27	Ham Community Breakfast - Boardman Eat 'n Park
March 03	YL Breakfast
March 13	Board Meeting - Austintown Eat 'n Park
	Ham Community Breakfast - Boardman Eat 'n Park
March 20	Members meeting
March 27	Ham Community Breakfast - Boardman Eat 'n Park



**February 16, 2018
Celebrate with Us,
We're Eight!**

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

Avnet, Allan AB8AA

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

ab8aa@arrl.net

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

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

kc8wy@zoominternet.net
kc8soy@yahoo.com
harens@juno.com
rwiliams@neo.rr.com
w0jo@arrl.net



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He who is afraid of asking, is afraid of learning

Articles from members for the Wave Bender are encouraged. They must be received by the editor on the 20th each month. Please send your articles to: k8jaa@arrl.net, and put WRARC on the subject line of your email. You may also send your articles to the editor: Jane Avnet, 2050 E. South Range Rd., New Springfield, OH 44443

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

KD8DWV - 145.270, PL -110.9

Upcoming Net Control Operators

February 02 Mks, KC8WUX

February 09 Roy, KD8IJF

February 16 Rose, KD8TII

February 23 Dennis, KA8DJM

March 02 Jane, K8JAA

March 09 - 23 This could be you

**If your name has never been on this list
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!

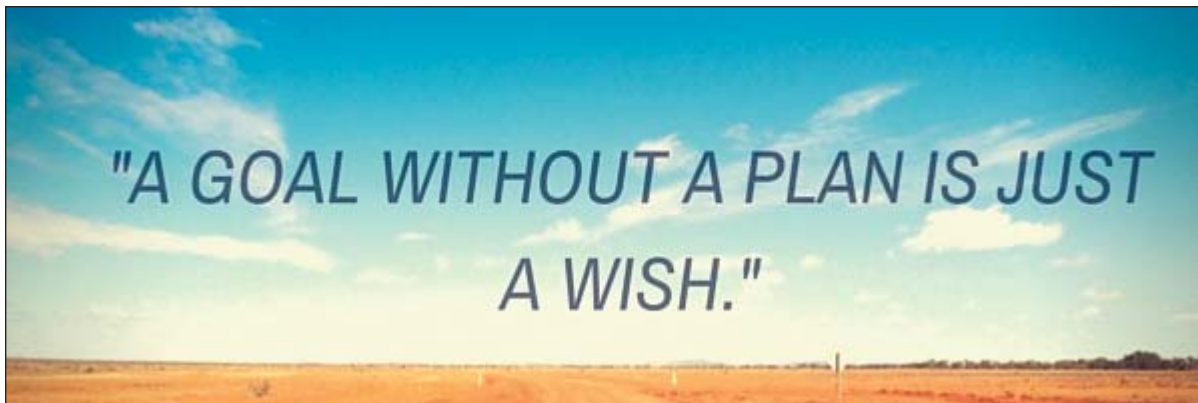
TREASURER - CONTINUED FROM PAGE 3

The main attraction for the night was George Caban, or as he is well known as, "Porgie the Clown." He is a person who entertains people by clowning, doing magic tricks and making balloon creations. He had the audience in stitches. He was that good. Although we won't be having entertainment like that throughout the year, we do have other ways of keeping our members interested in staying with WRARC. I do hope our past members will come back to find out for themselves what our club interests will be.

Please remember the official cut off date for paying dues is January 31, 2018. Full membership for members under 65 years is \$20.00 and additional family members at same address is \$5.00 each. Senior members 65+ is \$16.00 full year with additional family members at same address is \$5.00 each. If you are paying by check or money order, make them out to WRARC. If paying by mail, my address is: Rosemary Marko, 416 S. Edgehill Ave., Austintown, Ohio 44515.

Ladies, our monthly breakfast will be Saturday, February 3, 2018 at Thanos Restaurant on Tippecanoe Rd. in Canfield, just south of Rte. 224. It starts at 9:00 A.M.. I hope to see some new faces coming. If you think you can make it, please let me know by Monday, January 29th so I can give the restaurant a head count for Saturday, February 3rd. My email is: kd8tii@zoominternet.net. I hope a lot of you will return. Until next month,

73 Rose KD8TII
WRARC Treasurer



BIRTHDAYS THIS MONTH

Darin Cannon



To see your Birthday posted make sure I have your special month.

SOME THOUGHTS FROM THE EDITOR



If you missed the After the Holidays Annual Meeting and party, you missed a fun time. There was a great member turnout and plenty of prizes, almost enough for one per person. I met some new, to me, folks who came because families and friends were invited.

A couple of announcements from the meeting:

- Darrin, N8DMC, encouraged all Hams to use the repeaters and get on the air.
- A Club Anniversary Net to be held in March was mentioned, but Steve, KC8SOY, said plans were yet to be finalized.
- Oh yes, Rose, KD8TII, reminded us dues are due.

Dennis, KA8DJM, invited his friend, entertainer George Caban, a.k.a. Georgie Porgie, to the After the Holidays Meeting/Party. 'Georgie Porgie,' dressed like a clown, entertained us with his style of comedy and magic, which included balloon animals. He made me a monkey in a palm tree holding four bananas. You had to see it.

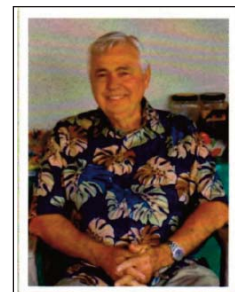


I lost two friends during December and January. Jim Weaver, K8JE, SK (from the ARRL bulletins) - Jim Weaver, K8JE (ex-WA8COA), of Mason, Ohio, died on January 14. An ARRL Life Member, he was 82. Weaver served as ARRL Great Lakes Division Director for 11 years, from 2003 until 2014, and he was a regular presence at Hamvention® and ARRL EXPO and moderated the ARRL Forum.

At the Great Lakes Division Convention last October, Weaver was presented with the George S. Wilson III, W4OYI, Lifetime Achievement Award, in recognition his selfless attitude, diversity of Ham Radio interests, and outstanding contributions to Amateur Radio.

Weaver announced his retirement from the ARRL Board on July 7, 2014. He was succeeded by Dale Williams, WA8EFK.

A dear SoCal friend also became a SK, Dick Bruno, N6ISY(SK), lost his 13-month battle with pancreatic cancer. I only mention him here because he was the Editor of the Intermod, the newsletter of West Coast Amateur Radio Club (I'm still considered a member, but that's a story for another time.) I 'burrowed' ideas from his NL from time to time to use in the Wave Bender. Al and I helped Dick and his wife Marcia, N6ISW, revive the RACES unit in our hometown, Fountain Valley. They are long time friends, he will be missed by all who knew him.



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!!



SWAP'N SHOP



DO YOU HAVE ITEMS FOR SWAP & SHOP? CONTACT THE EDITOR TO POST YOUR ITEMS HERE.

<K8JAA@ARRL.NET>

2	Hy-Gain Ham IV rotor and controller	\$300 ea
1	Hy-Gain T2X Tailtwister Rotor and DCU-3 Controller	\$450
3	Rohn 25 Tower Sections	\$ 75



**Will accept all reasonable offers.
AI, AB8AA, 330-207-3296 or ab8aa@arrl.net**

1/28/18

FIVE NEW CUBE SATS

SB SPACE @ ARL \$ARLS001

ARLS001 Fox-1D Satellite Set to Launch this Week, China to Launch Five New CubeSats

Newington, CT January 9, 2018

To all radio amateurs

The launch of AMSAT-NA's Fox-1D CubeSat will take place from India on January 12 (UTC). The Polar Satellite Launch Vehicle (PSLV) flight had to be rescheduled from December 30. AMSAT Vice-President Engineering Jerry Buxton, N0JY, delivered Fox-1D to Spaceflight Inc. in Seattle last November for integration.



In addition to a Fox-1 U/V FM transponder, Fox-1D will carry several university experiments, including a MEMS gyro from Pennsylvania State University-Erie, a camera from Virginia Tech, and the University of Iowa's High Energy Radiation CubeSat Instrument (HERCI) radiation mapping experiment. Fox-1D also carries the AMSAT "L-Band Downshifter," which gives the option of utilizing a 1.2 Ghz uplink for the FM transponder. The Fox-1D downlink will be on 145.880 MHz, and uplinks will be on 435.350 and 1,267.350 MHz (67 Hz CTCSS), switchable.

In addition to the Fox-1D Amateur Radio payload, the PSLV will carry the French PicSat, which carries a V/U FM transponder. PicSat will perform space observations. The transponder uplink is 145.910 MHz, the downlink is 435.525 MHz. Some 30 smaller secondary payloads from India, the US, and other international entities will also be on the launch, AMSAT News Service has reported.

AMSAT said it will release Fox-1D's Keplerian elements on its website as soon as they are known, and it's seeking telemetry data on the CubeSat to assist with commissioning.

"Participation in telemetry collection by as many stations in as many parts of the world as possible is essential as AMSAT Engineering looks for successful startup and indications of the general health and function of the satellite as it begins to acclimate to space," AMSAT said over the weekend. AMSAT advised those capturing telemetry using the FoxTelem software to check the "Upload to Server" option and to complete the "Ground Station Params" section. If AMSAT Engineering sees nominal values from the telemetry gathered, Fox-1D will be commanded from Beacon Mode to Safe Mode on the first good pass over the US. AMSAT said

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FIVE NEW CUBE SATS - CONTINUED FROM PAGE 8

the on-orbit checkout procedure could be completed in a few days. AMSAT asks the Amateur Satellite community to refrain from using the transponder uplink while on-orbit testing is under way.

Meanwhile, AMSAT-UK reports that China will launch Hunan Amateur Radio Society's constellation of five similar 6U CubeSat spacecraft on January 17 from its Jiuquan Space Center. Identified as TY-2 through TY-6, the satellites will carry out ionospheric transmission-detection experiments, in addition to Amateur Radio HF/VHF/UHF re-transmitting experiments in any narrow-band mode.

The constellation will also carry out inter-satellite communication experiments that include Amateur Radio loads, Li-Fi high-speed LED digital downlink, and CW lamp signal communication experiments. Downlinks are on 70 centimeters using 9.6 kbps GMSK and on 2.4 GHz and 5.8 GHz using 5 Mbps OFDM.

NNNN

/EX



A NEW KIND OF PROPULSION SYSTEM



A New Kind of Propulsion System That Doesn't Need Propellant. It Converts Electricity into Thrust and Vice Versa.

Article written: 22 Jan , 2018

by Evan Gough

Some of the best things in science are elegant and simple. A new propulsion system being developed in Spain is both those things, and could help solve a growing problem with Earth's satellites: the proliferation of space junk.

Researchers at Universidad Carlos III de Madrid (UC3M) and the Universidad Politécnica de Madrid (UPM) in Spain are patenting a new kind of propulsion system for orbiting satellites that doesn't use any propellant or consumables. The system is basically a tether, in the form of an aluminum tape a couple kilometers long and a couple inches wide, that trails out from the satellite. The researchers call it a space tie.

"This is a disruptive technology because it allows one to transform orbital energy into electrical energy and vice versa without using any type of consumable". – Gonzalo Sánchez Arriaga, UC3M.

The lightweight space tie is rolled up during launch, and once the satellite is in orbit, it's deployed. Once deployed, the tape can either convert electricity into thrust, or thrust into electricity. The Spanish researchers behind this say that the space-ties will be used in pairs.

The system is based on what is called a "low-work-function" tether. A special coating on the tether has enhanced electron emission properties on receiving sunlight and heat. These special properties allow it to function in two ways. "This is a disruptive technology because it allows one to transform orbital energy into electrical energy and vice versa without using any type of consumable," said Gonzalo Sánchez Arriaga, Ramón y Cajal researcher at the Bioengineering and Aerospace Engineering Department at UC3M.

As a satellite loses altitude and gets closer to Earth, the tether converts that thrust-caused-by-gravity into electricity for the spacecraft systems to use. When it comes to orbiting facilities like the International *Continued page 10*

A NEW KIND OF PROPULSION SYSTEM - CONTINUED FROM PAGE 9

Space Station (ISS), this tether system could solve an annoying problem. Every year the ISS has to burn a significant amount of propellant to maintain its orbit. The tether can generate electricity as it moves closer to Earth, and this electricity could replace the propellant. "With a low-work function tether and the energy provided by the solar panel of the ISS, the atmospheric drag could be compensated without the use of propellant", said Arriaga.

"Unlike current propulsion technologies, the low-work function tether needs no propellant and it uses natural resources from the space environment such as the geomagnetic field, the ionospheric plasma and the solar radiation." – Gonzalo Sánchez Arriaga, UC3M.

For satellites with ample on-board power, the tether would operate in reverse. It would use electricity to provide thrust to the space craft. This is especially useful to satellites near the end of their operational life. Rather than languish in orbit for a long time as space junk, the derelict satellite could be forced to re-enter Earth's atmosphere where it would burn up harmlessly.

The space-tie system is based on what's called Lorentz drag. Lorentz drag is an electrodynamic effect. (Electrodynamics enthusiasts can read all about it here.) I won't go too deeply into it because I'm not a physicist, but the Spanish researchers suggest that the Lorentz drag can be easily observed by watching a magnet fall through a copper tube. Here's a video.

Space organizations have shown interest in the low-work-function tether, and the Spanish team is getting the word out to experts in the USA, Japan, and Europe. The next step is the manufacture of prototypes. "The biggest challenge is its manufacturing because the tether should gather very specific optical and electron emission properties," says Sánchez Arriaga.

The Spanish Ministry of Economy, Industry and Competitiveness has awarded the Spanish team a grant to investigate materials for the system. The team has also submitted a proposal to the European Commission's Future and Emerging Technologies (FET-Open) consortium for funding. "The FET-OPEN project would be foundational because it considers the manufacturing and characterization of the first low-work-function tether and the development of a deorbit kit based on this technology to be tested on a future space mission. If funded, it would be a stepping stone to the future of low-work-function tethers in space" Sanchez Arriaga concluded.

WHAT WILL I HEAR ON THE 2-METER AMATEUR RADIO BAND?



While listening to the 2-meter ham band you can expect to hear normal conversations or "rag chew" as the hams call it. You may also hear a ham operator on his way home from work asking his wife if she needs anything from the store. You may hear a ham operator reporting a traffic accident and requesting emergency services.

You may also hear ham radio operators providing on the scene emergency communications during times of disaster. Often you will hear a ham operator reporting on conditions long before the general public has been advised of the situation via the normal news media. Even before you hear the information listening to a police or emergency services scanner you have already heard about the situation if you

are monitoring the 2-meter ham band.

The 2-Meter Amateur band frequencies are reserved for the exclusive use of those licensed in the United States by the Federal Communications Commission (FCC) as Amateur Radio Operators or "Ham Radio Operators". Ham radio operators use the 2-meter band for general conversations as well as for emergency communications. Ham radio operators are often the first called upon to assist in major disasters with communications between the public and emergency services such as law enforcement, fire and emergency medical services. The American Red Cross has recognized that the 2-Meter Amateur band is a very effective way of providing communications during times of emergency and Ham radio operators provide 90% of the coordination efforts during a major emergency. During an emergency a 2-Meter band receiver can save your life or that of a loved one.

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2-METER - CONTINUED FROM PAGE 10

How does the 2-Meter Amateur Radio Band work?

In most communities the local Ham radio operators own and maintain repeaters on the 2-meter band, which assists their communications by increasing the distance that they can communicate with each other while still maintaining the quality of a FM transmission. These repeater stations are located in high locations such as mountaintops or tall buildings in the big cities and consist of a powerful transmitter and a high-gain antenna allowing Ham operators to extend their coverage areas, often as much as 200 miles or more. These stations often have alternative forms of power such as generators, solar power and batteries, which keep them in operation when the commercial power supply has been discontinued due to weather or other disasters. Individual ham operators have also found alternative power sources for their equipment so that they can operate even when there is no commercial power available.

Ham radio operators are very inventive in their approaches to communications and can often find a way to communicate when normal communications such as cell phones have been interrupted. As an example Ham radio operators have been able to make phone calls using the 2-meter band for many years before the invention of the cellular telephone that we all have become dependant upon in the last few years.

More information about the 2-Meter Amateur Radio Band.

Because it is local and reliable, and because the licensing requirements to transmit on the 2-meter band are easy to meet in the United States and many other countries, this band is the most popular Amateur Radio band in the United States. The 2-meter band is often the band that Ham radio operators make their first contacts on. The testing procedures consist of taking a simple test consisting of 35 questions covering such topics as operating procedures, rules and regulations and some minor electronics theory. There is no requirement to pass a Morse code test to be licensed to operate on the 2-meter amateur radio band. 2-meter radio equipment is also very affordable and can be as simple as a small hand held transceiver or a powerful base or mobile transceiver. This popularity also means that it is the most often used band for emergency communications such as providing emergency communications between Red Cross shelters and local authorities. Many neighborhood disaster relief organizations use the 2-Meter Amateur Radio band for their official communications during times of emergency.

To learn more about 2-Meter Ham radio and what is required to obtain a license contact the ARRL (American Radio Relay League) at <http://www.arrl.org> or call (860) 594-0300. They can provide you with local contacts for training classes in your area and test dates and locations. Your local Amateur Radio Club members will assist you in all aspects of obtaining your license including what type of equipment you need to get started. You will discover that Ham radio operators are a great bunch of people. They provide this irreplaceable public service for free.

What is the 2-Meter Amateur Radio band anyway?

According to Wikipedia, "The 2 meter amateur radio band is a portion of the VHF (very high frequency) Spectrum, comprising of frequencies stretching from 144.000 MHz to 148.000 MHz." These communications are generally FM or frequency modulated transmissions although some operators do operate using SSB (single sideband) or CW (Morse code). These modes of operation allow for longer distance communications without the use of repeater stations.

**THE WRARC NET NEEDS YOUR SUPPORT....**

9:00 P.M. Friday evenings: 145.270 Mhz (minus offset), PL 110.9
You can advertise your Swap 'n Shop. You can ask our Elmers anything -
No Question too big or too small!
The only dumb question is one you don't ask Hope to hear you on the net.



NEW TECHNICIAN LICENSE QUESTION POOL

SB QST ARL ARLB003

ARLB003 NCVEC Releases New Technician License Question Pool into the Public Domain

The National Conference of Volunteer Examiner Coordinators (NCVEC) has announced the release of the 2018-2022 Amateur Radio Element 2 Technician class license question pool into the public domain. Each question pool must be published and made available to the public prior to its use as a question set, from which individual examinations are developed.

Alert the NCVEC Question Pool Committee to any necessary corrections or typographical errors via email at, qpcinput@ncvec.org.

The new Technician license question pool contains 428 questions. It will become effective for all Technician class license examinations starting on July 1, 2018.

NNNN

/EX



There is nothing amateur about Amateur Radio

DECEMBER ACTIVITIES

Just a couple of pictures from our December Activities. Thanks to Rose, KD8TII, for taking the pictures.



WE ARE EIGHT- HISTORY

At our first meeting, February 16, 2010, the President talked about the direction we felt the club should go. He wanted all members involved in making the club effective. He'd like to see speakers or a workshop at every meeting. More Ham related activities such as T-hunts, local contests and sprints. He emphasized Field Day and suggested we get a start on that now.

The President passed out proposed mission statement and constitution and bylaws. He asked everyone to look them over and make suggestions to improve them. He asked for suggestions for a club name. The suggestions were:

Mahoning Amateur Radio Association
 Tri-City Amateur Radio Association
 Tri-County Amateur Radio Association
 Western Reserve Amateur Radio Association (There was already a local club with that name)
 Valley Amateur Radio Association
 Amateur Radio Association/Amateur Radio Service/Amateur Radio Club

He asked for suggestions for the name of the newsletter:

Wave Bender
 Pass Band
 Sky Grabber
 Scope
 Intermod

Other ideas will be considered for club name and newsletter. Ideas for workshops were:

Use of test equipment, tweak old radios, help new Hams get up to speed with their equipment, i.e. be Elmers, The group agreed to meet the third Tuesday of the month.

Founding members and the posts they volunteered to hold:

Al Avnet, AB8AA	President
Jane Avnet, K8JAA	Secretary- Newsletter
John Fabry, KC8SPF (SK)	Badges - Site liaison
Karl Brandt, ND8DX	
Kevin Stein, KD8NXR	
Matt Pateray, KD8AMG	Treasurer
Maureen Stein, KD8NXS	
Roy Haren, KD8IJF	VP
Russ Williams, ex-KD8LDY	Trustee (NR8W)
Steve Fabry, KC8SOY	Trustee
Ted Filmer, KD8IJE	Trustee



Murphy's Law:

- Logic is a systematic method of coming to the wrong conclusion with confidence.
- Whenever a system becomes completely defined, some damn fool discovers something which either abolishes the system or expands it beyond recognition.
- Technology is dominated by those who manage what they do not understand.

TAKE TIME TO LAUGH FOR IT'S THE MUSIC OF THE SOUL

... I think you'll enjoy this. Whoever wrote it could have been my next door neighbor because it totally described my childhood to a 'T.' Under age 60? You probably won't understand.

Black & White TV You could hardly see for all the snow, Spread the rabbit ears as far as they go.
'Good Night, David. Good Night, Chet.'

Mom used to cut chicken, chop eggs and spread mayo on the same cutting board with the same knife and no bleach, but we didn't seem to get food poisoning. She would defrost hamburger on the counter and I used to eat it raw sometimes, too. Our school sandwiches were wrapped in wax paper in a brown paper bag, not in ice pack coolers, but I can't remember getting E. Coli.

Almost all of us would have rather gone swimming in the pond instead of a pristine pool (talk about boring), no beach closures then.

The term cell phone would have conjured up a phone in a jail cell, and a pager was the school PA system. We all took gym, not PE... and risked permanent injury with a pair of high top Ked's (only worn in gym) instead of having cross-training athletic shoes with air cushion soles and built in light reflectors. I can't recall any injuries but they must have happened because they tell us how much safer we are now. Flunking gym was not an option... Even for stupid kids! I guess PE must be much harder than gym.

Speaking of school, we all said prayers and sang the national anthem, and staying in detention after school caught all sorts of negative attention. We must have had horribly damaged psyches because we were taught we were supposed to accomplish something before we were allowed to be proud of ourselves. Oh, and what an archaic health system we had then. Remember school nurses? Ours wore a hat and everything. Oh yeah... And there was the Benadryl and a sterilization kit when I got that bee sting? I could have been killed!

I just can't recall how bored we were without computers, Play Station, Nintendo, X-box or 270 digital TV cable stations. We played 'king of the hill' on piles of gravel left on vacant construction sites, and when we got hurt, Mom pulled out the 48-cent bottle of mercurochrome (kids liked it better because it didn't sting like iodine did) and then we got our butt spanked. Now it's a trip to the emergency room, followed by a 10-day dose of a \$99 bottle of antibiotics, and then Mom calls the attorney to sue the contractor for leaving a horribly vicious pile of gravel where it was such a threat.

I recall Donny Light from next door coming over and doing his tricks on the front stoop, just before he fell off. Little did his Mom know that she could have owned our house, instead, she picked him up and swatted him for being such a goof. It was a neighborhood run amuck.

We didn't act up at the neighbor's house either; because if we did we got our butt spanked there and then we got our butt spanked again when we got home. To top it off, not a single person I knew had ever been told that they were from a dysfunctional family. How could we possibly have known that? We needed to get into group therapy and anger management classes. We were obviously so duped by so many societal ills, that we didn't even notice that the entire country wasn't taking Prozac! How did we ever survive?



Be decisive. Right or wrong, make a decision. The road of life is paved with flat squirrels
who couldn't make a decision. - Unknown -



AFTER THE HOLIDAYS ANNUAL MEETING & PARTY



February 2018

PREPAREDNESS LEADS TO READINESS - MATT W8DEC



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 	2 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	3 YL Breakfast 9 A.M. 
4	5 ARES Net 8:30 PM 146.745 PL 110.9	6	7 NATIONAL FETTUC- CINE ALFREDO DAY	8	9 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	10
11 NATIONAL DON'T CRY OVER SPILLED MILK DAY	12	13 Ham Breakfast Eat'n Park Boardman 8:30 A.M. Board Meeting Eat'n Park Auatintown 7:00 P.M.	14 	15	16 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	17 WRARC Eighth Anniversary Happy Birthday WRARC 
18	19 ARES Net 8:30 PM 146.745 PL 110.9	20 WRARC Meeting 7:00 P.M.	21  WaveBender Input Due	22	23 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	24
25 NATIONAL CHOCOLATE COVERED NUT DAY	26	27 Eat'n Park Boardman 8:30 A.M. Ham Community Breakfast	28	3.1	3.2 WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	3.3 YL Breakfast 9 A.M. 