

# FROM OUR VP

By the time of this month's Wave Bender, we would have completed our participation in our third annual Panerathon. This year, we have another new community fund-raising event and this will be the Mill Creek metro parks "Green Cathedral" Half Marathon on Sunday, September 10th, 2017. We will, once again, be meeting in the rear parking lot of Fellows Riverside Gardens, 123 McKinley Way, Youngstown, OH 44509. The entire event is within Mill Creek Park.

According to their website, the event starts at 8:30am EDT, so we should be there by 7:45am EDT in order to get our location assignments. Please also be sure to bring your WRARC event signs, wear your club wear and, if your using your HT, make sure it's programmed for our local repeater and is fully-charged.

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If you can help with this event, please either call me at (330) 544-5865, or email me at W0JO@arrl.net. We know this is "last minute," but the Executive Director of Mill Creek Parks, observed what we did at the Youngstown Marathon and asked if we could help. So, if you could spare a few hours that day, we could really use your help. The proceeds of this event benefit the Wick Recreation Childrens' Play Area.

Our next monthly WRARC meeting will be on Tuesday, September 19th at Davidson's Restaurant, 3636 Canfield Road, Canfield, OH 44406. We have dinner at 6:00pm, and our meetings start at 7:00pm EDT. Our scheduled guest speaker is Tom Sly, WB8LCD, who is the Ohio Section Affiliated Clubs Coordinator for the American Radio Relay League. We invite all of our members and associate members to the meeting as well as any licensed amateur radio operators who would like to know more about our club, or any individuals interested in the hobby/service of amateur radio.

Please also keep in mind, we will start accepting nominations for President, Vice-President, Secretary and one Trustee for 2018. The current officers in those positions will not be running again. Therefore, we need our members to consider volunteering for these important positions. Your current officers will support and help our new officers in these positions. Most successful organizations usually run better when all members participate and help. Until the next meeting,

73, Joe, W0JO VP/WRARC .



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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: 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:

September 12, 2017, 7:00 P.M. At Eat 'n Park, Austintown, Eat 'n Park,

5451 Mahoning Ave All members welcome

Members Meeting:

September 19, Davidsons

3636 Canfield Rd., Cornersburgh

Speaker: Tom Sly, WB8LCD, ACC



http://www.wrarc.net/

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# OTHER IMPORTANT WEB SITES

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

THE ARRL EXAM SEARCH PAGE

<http://www.arrl.org/find-an-amateur-radio-licenseexam-session>

OHIO SINGLE SIDEBAND NET

<HTTP://WWW.OSSBN.ORG/INDEX.HTML>

ANTENNA HEIGHT ABOVE AVERAGE TERRAIN
(HAAT) CALCULATOR

HTTPS://WWW.FCC.GOV/MEDIA/RADIO/HAAT-CALCULATOR

#### A NOTE FROM ROSE



Ladies and Gentlemen. This year is getting closer to the end and the club needs your help. We will be taking nominations for four of our current officers who are stepping down at the end of this year, our President, Vice-President, Secretary and one Trustee. I will be staying on for my second term as Treasurer if it comes to that unless anyone else would be interesting in running for this position.

WRARC has been in existence since February, 2010 and hope it will continue indefinitely. The jobs aren't that hard to do. The Secretary's duties are basically to take minutes at the monthly board meetings and general meetings and send emails of such minutes to each board member.

The Treasurer's duties are to receive and give receipts for all monies paid to our organization; keep accurate account of all monies received and expended; pay no bills unless authorized by the board; take care of all banking and tax issues, which include filing an IRS 990 tax form each year in March and submitting payment to the insurance company in November for coverage for upcoming years that we exist.

The President's and Vice-President's duties will be explained by Bob our present President and Joe our present Vice-President to anyone interested in running for these positions.

I am asking all our members to please think about coming back to the general monthly meetings starting this month so you can take part in all that will be happening before it's too late. The board members all hope to see you at September's meeting.

73, Rose, KD8TII WRARC Treasurer



IS KIT BUILDING A LOST ART?

Years ago there were several companies that made kits for people to build. The big one was Heathkit. They made kits for almost every type of hobbies. There were kits for ham radio, electronic repair people and just regular folks.

The Ham Radio kits covered the entire spectrum of the hobby. There were transmitters, receivers, linears, and a lot of station accessories. There were all types of test equipment. There were television sets, clocks, Hi-Fi receivers, preamps, mixers, speakers and amplifiers. After Heathkit went out of business there were no other companies like them to take up the slack.

As electronics got smaller and more complex people quit building things.

Now there appears to be a growing interest in kit building again. There are several companies that are showing kits for us to look at. CQ has a column on kit building. At Dayton for the last few years there has been a kit building table at the ARRL booth.

Here are some of the kit companies, hayseedhamfest.com, element14.com, elecraft.com, orpme.com, qsradio.com, tentec.com, qrpkits.com, box73.com, radioinc.com, 4sqrp.com, vakits.com, bit.ly/1dKJG18, pl-259.com, crkits.com, and hamgadgets.com.

If anyone would like to look further into kit building let me know.

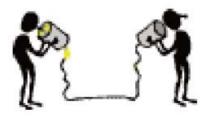
73, AB8AA

# WHAT'S COMING UP?

Sept. TBD Sept. 10 Sept. 12 Sept. 19	Semi-Annual Community Service Event, 446 Road Clean up Green Cathedral half marathon - Volunteers Needed Board meeting - open to all interested members. Member's Meeting -
Oct. 02	Youngstown Peace Race - Volunteers needed
Oct. 10	Board meeting - open to all interested members
Oct. 13 & 14	Haunted Hayride - Boardman Park - Volunteers needed
Oct. 17	Members meeting - Nominations of Officers
Oct. 18	Testing American Red Cross 3530 Belmont Ave #7,
Oct. 20 & 21	Haunted Hayride - Boardman Park - Volunteers needed
Oct. 27 & 28	Haunted Hayride - Boardman Park - Volunteers needed
Nov. 14	Board meeting - open to all interested members.
Nov. 21	Member's Meeting - Elections
Dec. 12	Board meeting - open to all interested members.
Dec. 19	Member's Meeting
Jan. TBD	Annual Meeting and installation of Officers



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



# 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 mayalso 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

> There are no volunteers for September Why not give it a try, it's easy!

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

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; N8SY, W5YI, the ARRL and the World-Wide Web.

#### **RUN FOR AN OFFICE**

Are you interested in serving as an officer for WRARC? If so, please let your interest be known to the nominating Committee.

Thank you Nominating Committee

WRARC offices which need to be filled are: President, VP, Secretary, Treasurer, and one Trustee. Do you have ideas on how the club can be run more effectively? Run for President. Do you have ideas for some interesting speakers? Run for VP. If you like to keep meeting notes, run for secretary. If you are interested in finances, run for Treasurer. If you like a challenge, run for Trustee because you never know what job will come your way.

Our current officers have done a great job, but if you have some better ideas, run for an office. Contact the nominating Committee above if you want to run. No nominations will be accepted if the person nominated is not willing to run. Nominations will be taken from the floor at the September and October meetings. Remember our elections are in November and the new officers take office in January.



Taken from the **Constitution** posted on the WRARC website <a href="http://www.wrarc.net/">http://www.wrarc.net/</a>
Duties and Responsibilities of the **President**: The President shall preside at all meetings, and conduct them according to the rules adopted. He/she shall enforce due observance of this Constitution and By-Laws; decide all questions of order; sign all official documents adopted by the organization, and perform all other duties pertaining to the office of President. The President shall preside over the board, which will consist of the elected officers, the three (3) trustees and the immediate Past President, which shall meet to discuss and conduct any relevant business of the organization, and to report its actions to the membership at the next regular meeting.

Taken from the **SOP** posted on the WRARC website <a href="http://www.wrarc.net/">http://www.wrarc.net/</a> - Duties and Responsibilities of these positions:

#### **PRESIDENT**

The President shall appoint, dissolve or change any/all committees as he/she deems necessary. He/she shall set the date and time for the Board meetings. The past President will be a voting board member until he is superseded by the current President. The past President will maintain the WRARC Standard Operating Procedures (SOP) manual.

#### **VICE PRESIDENT**

The Vice President is the chairman of the program committee. He/She will have a speaker or program at each monthly meeting. Excluding the picnic and winter party. They do not have to be Ham related, but it should be something of interest to Amateur Radio.

#### **SECRETARY**

The Secretary shall work with the Newsletter editor, the Web Page manager, and Membership committee to make sure all pertinent information is given to each person. The Secretary will be the Data Base Manager and keep all the members' names and addresses in a workable order. He/she will be responsible to add and delete members as required to this list.

#### TREASURER

The Treasurer shall take care of all banking and tax issues. He/she should file the IRS 990 form each year in March. He/she should keep books that can be reviewed by any member when asked. The Treasurer shall present the books to the board at each December meeting for its review by the Trustees.

#### **TRUSTEES**

The Trustees shall be responsible for all club equipment. They should be able to tell the board and membership where and who has what. They are to take on any special task asked of them.

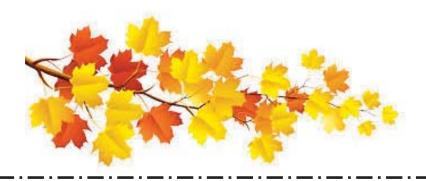


#### **NEW EVENT**



5K and 1/2 Marathon Sunday, September 10. Volunteer for this one and spend a couple hours in beautiful Mill Creek Park. Contact Joe W0JO to volunteer.

http://www.millcreekmetroparks.org/visit/things-to-do/green-cathedral/





#### ECLIPSE OF THE SUN

the total solar eclipse of August 21, 2017,

Originally we had planned on going about 50 miles from Wright City where we were staying, but when we realized how many people came to MO to view the event we decided to stay local. The population of MO increased by thousands of interested individuals who came to view the eclipse. In some parks you needed a ticket to get in. Some schools suspended classes for the day. Others used the event as a teaching tool.

The four of us, me, Al, our son Jay, and his wife, Cindy were sitting in the parking lot of the local Walgreens. We couldn't have asked for a better day. Rain was threatened, but that waited until the next day. We brought our telescope, but had the wrong type of camera, so we didn't get the pictures



we had hoped to get. We had a special filter and those special glasses, so viewing the eclipse wasn't a problem.

The moon took its time moving in front of the sun. It was so exciting! We watched the entire eclipse from start to finish. We saw a couple get engaged during the total eclipse. I later heard that happened more than once that day. Some folks opped to get married during the event. What a special day, I'm glad I was able to experience it!

#### SWAP'N SHOP



Will accept all reasonable offers.

Misc tower parts, lots contact me if interested.

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

#### YOUNGSTOWN PEACE RACE

#### About The Peace Race

Fall-lake viewThe Peace Race is not your ordinary Midwest road race. The Peace Race has attracted runners from all corners of the globe since its inception in 1975. The Peace Race is a USATF certified course - 10K and 2 mile run/walk - Oct 22, 2017 9:30 AM

#### The Location

Youngstown - Peace Race's course is in Mill Creek Park.

#### Benefiting Charities

Proceeds from the Youngstown Peace Race benefit several area charities, including:

- Akron Children's Hospital Mahoning Valley Diabetes Outreach Program
- St. Vincent De Paul Society
- Rescue Mission of Mahoning Valley
- YMCA's Partner in Youth Program
- Fairhaven School/Special Olympics
- The Beatitude House

Contact Joe, W0JO, to volunteer





#### HAUNTED HAYRIDE COMING IN OCTOBER

OK it is now time to start thinking about getting out the long-johns, and the HTs out of their boxes, check and charge the batteries, and go out into the woods. No, we are not going hunting for deer or rabbit. We are going out after creepy people. Now these creepy people will be hiding in Boardman Park. Yes, in Boardman Park! They are there after the little kids that go out on those October weekends to

have fun in the woods by scarring people while on the Haunted Hay Ride.

The Haunted Hay Ride is a fund riser for the 4H kids in Mahoning County. It runs for three week ends in October. We usually meet at the log cabin at 6:00 p.m. - at that time we see where everyone will find out where, in the woods, they will be

stationed. Now if we have a lot of volunteers, then you can be with someone, if you'd like - and if you want - YOU can scare the riders along with the kids.

The Haunted Hay Ride will tentatively take place on the weekends of October 13 & 14 (there'll also be pumpkin Carving Contest for the kids), 20 & 21, & 27 & 28. NO SUNDAYS!

We meet at the log cabin around 6:00 P.M. We come back in around 10:00 to 10:30 P.M., on some nights, it can go 'till 11: 00. I hope that people will volunteer and join the fun. Yes, we do have fun, even if it's cold.

73 to all, Bill Egan, KD8HCQ 330 565-4342 James J. Aylward, born December 4, 1949, in Akron, Ohio, passed away on August 17, 2017.

Jim was an Amateur Radio Operator, call sign KC8PD, and his favorite aspect of the hobby/service was providing Public Service and Emergency Communications. He led the Communications Unit of the Portage County Emergency Management Agency and was a member of the EMA's Incident Management Assistance Team. He coordinated radio communications support for a variety of local events including the Cleveland Marathon. He volunteered with the Amateur Radio Emergency Service serving the Red Cross in Ocean Springs, Mississippi, after Hurricane Katrina.

He was one of the founding members of the PCARS, and help to form WRARC. He was the original vice-president and then president of PCARS, each a three year term, and took great pride in the growth and success of both clubs and the fun that it provided for Ham Radio Operators in Northeast Ohio.

Per Jim's wishes, cremation has taken place. To honor and rejoice in his life, a Celebration of Life will be held on Sunday, October 1, 2017, from 4:00 – 6:00 PM with a time of remembrance at 5:00 PM at the Wood-Kortright-Borkoski Funeral Home, 703 E. Main St., Ravenna, Ohio 44266. Casual attire suggested.

Should you desire, donations can be made in Jim's memory to Family & Community Services, 705 Oakwood Street, Ravenna, Ohio 44226. Condolences and memories may be shared at:

www.wood-kortright-borkoski.com.

CLUB NEWSLETTER AWARD, also to be presented at the GLD HamCon: JOSEPH J. PHILLIPS, K8QOE, NEWSLET-TER AWARD This award will be given to the highest scoring newsletter submitted in Great Lakes Division competition to the newsletter review committee. Each newsletter for the contest will have been declared newsletter-of-the-year for the Section it represents during the present year; however, when the timing of the Division Convention occurs too early in the year to permit selection of a newsletter for the year, winners for the previous year may be submitted.

An eligible newsletter must be regularly published at least four (4) times per year and be a recognized Amateur Radio organization within their state.

Electronic (or Web based) produced newsletters may also enter. However, they must represent their printed newsletter in all formats. This is to ensure uniformity. Non-amateurs, in the Public Relations industry will do the judging. They will judge on following criteria:

- · Style (15%): This means newsletter design of all pages.
- $\cdot$  Content (35%): This is the amount of useful information contained within the newsletter.
- $\cdot$  Service to members (35%): This is the amount of information using individual member's names.
- Clarity of presentation (15%): This is the readability of the newsletter including accuracy of spelling and grammar.

73, Let's be radio-active.
Dale Williams WA8EFK
Director Great Lakes Division

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

#### 2017 Newsletter Contest Results

#### Hey Gang,

If you missed the Columbus Hamfest / Ohio Section Conference this year, you really missed out on a great adventure for sure. John Ross, KD8IDJ announced the winners of the 25th Annual Ohio Section Newsletter Contest. Here's John's comments.

#### WOW! WOW! WOW!

Just when I thought the newsletter judging could not get more intense...it did...and the judges were blown away with this year's entries. The most frequent statement I heard was "these are all good." Perhaps the most important revelation of the night was when the judges realized the printed newsletters had "upped their game" with graphics, readability and content that nips right at the heels of the on-line newsletters. That is a benchmark moment. Frankly, there was some concern over the past three years that when the on-line ver-



sions became more prevalent the normal printed newsletters would find it hard to keep up.

# Well, they did keep up and in a big way.

Actually, what the judges saw is a true reflection of Amateur Radio...ever changing, pressing the envelope and growing in the process. It's a tribute the Ohio Section clubs and their newsletter editors...showing us the more they are challenged...the more they respond...all to the betterment of Amateur Radio.

With that...here are this years' winners:

- First Place...Radiogram...Portage County Amateur Radio Service
- Second Place...tie . . . The Spirit of '76 and '88...Lake Erie Amateur Radio Association and the WaveBender . . . the Western Reserve Amateur Radio Club
- Third Place...The Mike & Key...Greater Cincinnati Amateur Radio Association Honorable Mention...tie... ATCO Newsletter...Amateur Television In Central Ohio Group and the CARA Communicator...Cambridge Amateur Radio Association.It was very, very difficult to pick a winner...they were...are...all that good. It's a great problem to have and I believe it could only happen in Ohio!

Finally, for a group of seasoned, professional and experienced journalists to respond so overwhelming positive to the newsletters speaks volumes to the hard work of every editor, every club and every member. It was a great night...a great time to be an Amateur Radio operator. Now there's a little more to this story that needs to said. The first-place winner, Radiogram, will go on to compete in the Great Lakes Division Newsletter Contest this October in Michigan. They will be competing with the very best that Michigan and Kentucky has to offer for the coveted Joesph J. Phillips, K8QOE Newsletter Award! Let's all wish them luck!

73, Scott, N8SY, SM..



THANK YOU

I want to thank the WRARC members who have submitted articles, jokes, and pictures to the Wave Bender, and congradulate the other winning newsletters in this yeaes' newsletter contest!

#### GREAT LAKES DIVISION DIRECTOR



Greetings all,

Our Great Lakes Division Section Managers have already alerted everyone about the need to send an e-mail to their Senators in Washington to support the Amateur Radio Parity Act. This note is a friendly reminder

that if you have not yet sent your e-mail, the attached link will allow you to do that with a very minimal effort.

https://arrl.rallycongress.net/ctas/urge-us-senate-to-support-amateur-radio-parity-act

This is truly important that we get this passed so the FCC will be directed to create a set of guidelines implementing PRB-1-style rules that allow those hams living in areas governed by homeowners' associations to install effective antennas.

The above link is also available at the top of the ARRL Web Page.

Thanks for your help and 73,

Dale WA8EFK

\_\_\_\_\_\_

ARRL Great Lakes Division

Director: Dale R Williams, WA8EFK

wa8efk@arrl.org

\_\_\_\_\_

August 8, 2017 ar ARRL Member:

Based on feedback I've received, it seems to me that some members still don't fully understand certain features of the Amateur Radio Parity Act (ARPA) and what it is meant to do. To make things clearer, we have developed an FAQ in the format of questions and answers. Please take a few minutes and read the FAQ to learn more about the ARPA.

Here is the direct link:

http://www.arrl.org/files/file/Regulatory/The%20Amateur%20Radio%20Parity%20Act%20FAQ.pdf

Here is another link with additional information: http://www.arrl.org/amateur-radio-parity-act

Thanks to those of you who have written your Senators in support of the ARPA. If you have not done so, please do so by clicking on the link below. It only takes a minute.

https://arrl.rallycongress.net/ctas/urge-us-senate-to-support-amateur-radio-parity-act

Thanks. Let's keep the effort moving!

73, Rick - K5UR

Rick Roderick, K5UR

President

ARRL - The national association for Amateur Radio®

#### THE GHOSTLY RADIO STATION THAT NO ONE CLAIMS TO RUN

By Zaria Gorvett 2 August 2017

In the middle of a Russian swampland, not far from the city of St Petersburg, is a rectangular iron gate. Beyond its rusted bars is a collection of radio towers, abandoned buildings and power lines bordered by a dry-stone wall. This sinister location is the focus of a mystery which stretches back to the height of the Cold War. It is thought to be the headquarters of a radio station, "MDZhB", that no-one has ever claimed to run. Twenty-four hours a day, seven days a week, for the last three-and-a-half decades, it's been broadcasting a dull, monotonous tone. Every few seconds it's joined by a second sound, like some ghostly ship sounding its foghorn. Then the drone continues.

Once or twice a week, a man or woman will read out some words in Russian, such as "dinghy" or "farming specialist". And that's it. Anyone, anywhere in the world can listen in, simply by tuning a radio to the frequency 4625 kHz. It's so enigmatic, it's as if it was designed with

conspiracy theorists in mind. Today the station has an online following numbering in the tens of thousands, who know it affectionately as "the Buzzer". It joins two similar mystery stations, "the Pip" and the "Squeaky Wheel"

As their fans readily admit themselves, they have absolutely no idea what they are listening to. In fact, no-one does. "There's absolutely no information in the signal," says David Stupples, an expert in signals intelligence from City University, London. What's going on?

The frequency is thought to belong to the Russian military, though they've never actually admitted this. It first began broadcasting at the close of the Cold War, when communism was in decline. Today it's transmitted from two locations – the St Petersburg site and a location near

Moscow. Bizarrely, after the collapse of the Soviet Union, rather than shutting down, the station's activity sharply increased. There's no shortage of theories to explain what the Buzzer might be for – ranging from keeping in touch with submarines to communing with aliens. One such idea is that it's acting as a "Dead Hand" signal; in the event Russia is hit by a nuclear attack, the drone will stop and automatically trigger a retaliation. No questions asked, just total nuclear obliteration on both sides. There are clues in the signal itself.

#### This may not be as wacky as it sounds

The system was originally pioneered in the Soviet era, where it took the form of a computer system which scanned the airwaves for signs of life or nuclear fallout. Alarmingly, many experts believe it may still be in use. As Russian president Vladimir Putin pointed out himself earlier

this year, "nobody would survive" a nuclear war between Russia and the United States. Could the Buzzer be warding one off?

As it happens, there are clues in the signal itself. Like all international radio, the Buzzer operates at a relatively low frequency known as "shortwave". This means that – compared to local radio, mobile phone and television signals – fewer waves pass through a single point every

second. It also means they can travel a lot further. While you'd be hard pressed to listen to a local station such as BBC Radio London in a neighbouring county, shortwave stations like the BBC World Service are aimed at audiences from Senegal to Singapore. Both stations are broadcast from the same building.

It's all thanks to "skywaves". Higher frequency radio signals can only travel in a straight line, eventually becoming lost as they bump into obstacles or reach the horizon. But shortwave frequencies have an extra trick – they can bounce off charged particles in the upper atmosphere,

allowing them to zig-zag between the earth and the sky and travel thousands, rather than tens, of miles.

Which brings us back to the Dead Hand theory. As you might expect, shortwave signals have proved extremely popular. Today they're used by ships, aircraft and the military to send messages across continents, oceans and mountain ranges. But there's a catch. The lofty layer isn't so much a flat mirror, but a wave, which undulates like the surface of the ocean. During the day it moves steadily higher, while at night, it creeps down towards the Earth. If you want to absolutely guarantee that your station can be heard on the other side of the planet – and if you're using it as a cue for nuclear war, you probably do – it's important to change the frequency depending on the time of day, to catch up. The BBC World Service already does this. The Buzzer doesn't.

#### THE GHOSTLY RADIO STATION - CONTINUED FROM PAGE 13

Another idea is that the radio station exists to "sound" out how far away the layer of charged particles is. "To get good results from the radar systems the Russians use to spot missiles, you need to know this," says Stupples. The longer the signal takes to get up into the sky and down again, the higher it must be. There is a station with some striking similarities.

Alas, that can't be it either. To analyse the layer's altitude the signal would usually have a certain sound, like a car alarm going off – the result of varying the waves to get them just right. "They sound nothing like the Buzzer," says Stupples. Intriguingly, there is a station with some striking similarities. The "Lincolnshire Poacher" ran from the mid-1970s to 2008. Just like the Buzzer, it could be heard on the other side of the planet. Just like the Buzzer, it emanated from an undisclosed location, thought to be somewhere in Cyprus. And just like the Buzzer, its transmissions were just plain creepy.

At the beginning of every hour, the station would play the first two bars of an English folk tune, the Lincolnshire Poacher. "Oh 'tis my delight on a shining night In the season of the year. When I was bound apprentice in famous Lincolnshire 'Twas well I served my master for nigh on seven

years..." After repeating this12 times, it would move on to messages read by the disembodied voice of a woman reading groups of five numbers — "1-2-0-3-6" — in a clipped, upper-class English accent. To get to grips with what was going on, it helps to go back to the 1920s. The All-Russian Co-operative Society (Arcos) was an important trade body, responsible for overseeing transactions between the UK and the early Soviet Union. Or at least, that's what they said they did.

In May 1927, years after a British secret agent caught an employee sneaking into a communist news office in London, police officers stormed the Arcos building. The basement had been rigged with anti-intruder devices and they discovered a secret room with no door handle, in which workers were hurriedly burning documents. It may have been dramatic, but the British didn't discover anything that they didn't already know. Instead the raid was a wake-up call to the Soviets, who discovered that MI5 had been listening in on them for years.

"This was a blunder of the very first order," says Anthony Glees, who directs the Centre for Security and Intelligence Studies at the University of Buckingham. To justify the raid, the prime minister had even read out some of the deciphered telegrams in the House of Commons.

The upshot was that the Russians completely reinvented the way messages are encrypted. Almost overnight, they switched to "one-time pads". In this system, a random key is generated by the person sending the message and shared only with the person receiving it. As long as the key really is perfectly random, the code cannot be cracked. There was no longer any need to worry about who could hear their messages.

Enter the "numbers stations" – radio stations that broadcast coded messages to spies all over the world. Soon even the British were doing it: if you can't beat them, join 'em, as they say. It's quite difficult to generate a completely random number because a system for doing so will, by

its very nature, be predictable – exactly what you're trying to avoid. Instead officers in London found an ingenious solution.

They'd hang a microphone out of the window on Oxford Street and record the traffic. "There might be a bus beeping at the same time as a policeman shouting. The sound is unique, it will never happen again," says Stupples. Then they'd convert this into a random code. Of course,

that didn't stop people trying to break them. During World War Two, the British realised that they could, in fact, decipher the messages – but they'd have to get their hands on the one-time pad that was used to encrypt them. "We discovered that the Russians used the out-of-date sheets

of one-time pads as substitute toilet paper in Russian army hospitals in East Germany," says Glees. Needless to say, British intelligence officers soon found themselves rifling through the contents of Soviet latrines.

# Now North Korea are getting in on the act, too

The new channel of communication was so useful, it didn't take long before the numbers stations had popped up all over the world. There was the colourfully named "Nancy Adam Susan", "Russian Counting Man" and "Cherry Ripe" – the Lincolnshire Poacher's sister station, which also contained bars of an English folk song. In name at least, the Buzzer fits right in.

#### THE GHOSTLY RADIO STATION - CONTINUED FROM PAGE 14

It also fits with a series of arrests across the United States back in 2010. The FBI announced that it had broken up a "long term, deep cover" network of Russian agents, who were said to have received their instructions via coded messages on shortwave radio – specifically 7887 kHz.

Now North Korea are getting in on the act, too. On 14 April 2017, the broadcaster at Radio Pyongyang began: "I'm giving review works in elementary information technology lessons of the remote education university for No 27 expedition agents." This ill-concealed military message was followed by a series of page numbers — No 69 on page 823, page 957 — which look a lot like code.

It may come as a surprise that numbers stations are still in use – but they hold one major advantage. Though it's possible to guess who is broadcasting, anyone can listen to the messages – so you don't know who they are being sent to. Mobile phones and the internet may be quicker,

but open a text or email from a known intelligence agency and you could be rumbled.

It only becomes a numbers station in moments of crisis, such as if Russia were invaded. It's a compelling idea: the Buzzer has been hiding in plain sight, instructing a network of illicit Russian spies all over the world. There's just one problem. The Buzzer never broadcasts any numbered messages.

This doesn't strictly matter, since one-time pads can be used to translate anything – from code words to garbled speech. "If this phone call was encrypted you'd hear "...enejekdhejenw..." but then it would come out the other side sounding like normal speech," says Stupples. But this would leave traces in the signal.

To send information over the radio, essentially all you're doing is varying the height or spacing of the waves being transmitted. For example, two low waves in a row means x, or three waves closer together means y. When a signal is carrying information, instead of neat, evenly spaced waves like ripples on the ocean, you're left with a wave like the jagged silhouette of an ECG.

This isn't the Buzzer. Instead, many believe that the station is a hybrid of two things. The constant drone is just a marker, saying "this frequency is mine, this frequency is mine..." to stop people from using it. It only becomes a numbers station in moments of crisis, such as if Russia were invaded. Then it would function as a way to instruct their worldwide spy network and military forces on standby in remote areas. After all, this is a country around 70 times the size of the UK.

It seems they're already been practicing. "In 2013 they issued a special message, 'COMMAND 135 ISSUED' that was said to be test message for full combat readiness," says Maris Goldmanis, a radio enthusiast who listens to the station from his home in the Baltic states. The mystery of the Russian radio may have been solved. But if its fans are right, let's just hope that drone never stops.



# BIRTHDAYS THIS MONTH

KC8UNR Mike Cibella
N1TAM Terry Mitzel
KE8ALR David Moore
KC3GFU Amanda Farone



# In 1923, Who Was:

- 1. President of the largest steel company?
- 2. President of the largest gas company?
- 3. President of the New York stock Exchange?
- 4. Greatest wheat speculator?
- 5. President of the Bank of International Settlement?
- 6. Great Bear of Wall Street?

These men were considered some of the worlds most successful of their days.. Now, 80 years later do you know what ultimately became of them?

# The Answers:

- 1. The president of the largest steel company. Charles Schwab, died a pauper.
- 2. The president of the largest gas company, Edward Hopson, went insane.
- 3. The president of the NYSE, Richard Whitney, was released from prison to die at home.
- 4 The greatest wheat speculator, Arthur Cooger, died abroad, penniless.
- 5. The president of the Bank of International Settlement, shot himself.
- 6 The Great Bear of Wall Street, Cosabee Livermore, also committed suicide

However, in that same year, 1923, the PGA Champion and the winner of the most important golf tournament, the US Open, was Gene Sarazen. What became of him?

He played golf until he was 92, died in 1999 at the age of 95. He was financially secure at the time of his death.

The Moral: Why work. Play golf.

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

Keep in mind that wen you attempt to repair something you run the risk of actually learning something

Many times you also can actually improve "defective" item you are attempting to repair



# September 2017



PREPAREDNESS LEADS TO READINESS - MATT W8DEC Sunday **Monday Tuesday** Wednesday **Thursday Friday** Saturday WRARC Net 9:00PM 145.270 Swap n' Shop Ask the **Elmers** 3 **Be Late For** National **WRARC** Net ARES Net **Something** Ampersand 9:00PM 8:30 PM Day Day 145.270 146.745 Swap n' PL 110.9 Shop Ask the **Elmers** 10 11 12 13 14 15 16 Ham Breakfast WRARC Net Eat'n Park 9:00PM Boardman 145.270 8:30 A.M. Swap n' Remembering **Board Meeting** Shop Eat'n Park Ask the Swap Ideas Auatintown **Elmers** Day 7:00 P.M. 17 20 21 22 23 WRARC Net **ARES Net** WRARC FALL **EQUINOX** 8:30 PM 9:00PM Meeting 10:21 A.M. 145.270 7:00 P.M 146.745 Swap n' PL 110.9 Shop Ask the WaveBender **Elmers Input Due** 24 25 26 27 28 **30** WRARC Net Eat'n Park 9:00PM Boardman 145.270 8:30 A.M. Swap n' Ham Shop **Community** Ask the **Breakfast Elmers**