Official Publication of the
West Allis Radio Amateur Club

Hamtrix

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OCTOBER CLUB HAPPENINGS

Note new place

Premeeting dinner at 5:15pm
Cleveland Pub at Sunnyslope and Cleveland

MEETING INFORMATION

Meeting 7pm at new building
October 13, 2026 7:00 pm
Location:
Hickory Grove Community Center
2600 S Sunnyslope Road
Rm 310
New Berlin

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Sendik's Community Grill

Thanks to all who Worked and Supported this years' Grill days

WARAC 4th Tuesday Breakfast

NOTE NEW LOCATION

Several years ago there was talk among Nut Net members that we should get to meet each other. A breakfast get together idea was started. It was open to all hams, XYL/partners and anyone who wanted to learn about amateur radio. Even visiting OM/XYL couples joined us.

So, on the fourth Tuesday each month at 8:30 am we meet at The Forum Restaurant, corner of HWY 100 and Layton, Greenfield, WI. Looking forward to seeing you, mark your calendar.

Phil, W9NAW

President’s Shack - October ‘26
Fall is in the Air

The leaves are changing and quite inconveniently beginning to litter my yard. Ain’t it grand. Well it’s election time for the club…and time for another really good monthly meeting.

Club Update

Officer Elections: Time to pick your new Board for 2027. What a deal. That will dominate the beginning of the meeting. Quoting the “The Natural”, “Pick me out a winner, Bobby”. That seems appropriate given our current Brewer’s World Series quest.

Monthly Meeting: Usual time and place this month. Gary Beier takes center stage with a unique presentation, as only he can do it, detailing his antique radio rejuvenation projects.

Sendik’s Grill Fund Raiser: Special thanks to Frank, KA9FZR and his well trained gang of grill specialists who braved the 75 F and sunny skies to stage yet another successful fund raiser. Frank’s had the magic this year for picking outstanding weather days for the grills. Thank you to everyone that contributed their Saturday time to help the club!!

Pre Meeting Dinner: Grab a good parking spot at Hickory Grove and walk over to the Cleveland Pub for a hamburger / Taco special. Couldn’t be more convenient.

Looking forward to seeing you at the meeting. Come early, stay late and let’s have some fun.

WARAC General Meeting Minutes – September 8, 2026

Called to order by Mike Johnson @ 7:05 pm.

Attendance: 26 Member's.

Sendik's Grill: Saturday, September 12th, 11:00 to 4:00pm. Frank is looking for Volunteers.

CAP (Civil Air Patrol) Brayden KD9YVG - FoxHunt: Was held last Thursday. Club members assisted with the event. It was an outstanding event. A wonderful evening and the CAP members had fun.

Publication of the Month: SWR Magazine September issue online. . Subscribe for free. Very well put together.

POTA Weirdness: Cemeteries On The Air. .

WRTC Dramatics:/ . Scandal, cheeting.

HamClock Updates: New features. Hamclock can now show Balloons, WX, ADS-B, Windy.

Hamfests: .
Ozaukee RC – September 12, Cederburg – Fair grounds.
W9DXCC Conference – September 11th and 12th, Naperville.
September 19th 11 – 6pm WI POTA Party on the air.

ARRL 250th WAS (Work All States) Award: Al Hovey, WA9BZW. Brought in to show his award.

Meeting Minutes: Approved.

Treasurer's Report Jerry, K9HOG: Biggest expense WIQSO Plaques. Field Day food $65.34. WI Dept of Finance filling Fee. $25. Schwab account increased by $232. Schwab General Fund account increased by $86.67.

Scholarship Update, Gary, KD9VGL: ARRL Scholarship Fund is in two parts. The endowment, which we do no touch. And the extendable part, which is used to pay the $2,000 amount of the scholarship, the Club adds $1,000 to make it a $3,000 scholarship. The extendable fund has grow where we can think about increasing the scholarship amount. Will bring to the Board.

Elections: October is Election time. We need people to step up to fill the 3 positions. President(Would like to step back.), Vice President and Secretary.

Pierre Potter, K9SSY: Vice President is not a very time demanding position. Anyone can do it.

Presentation – Chuck Dellis, W9WLX, Polar Modulation.

The Flex Aurora radio's and QRP-Labs QMX, QMX + are the only commercially available radios to use polar modulation today.

Flex 510, 510M, 520, 520M covers 30KHz – 54MHz with 1 - 500W HF, 1-200W 6M. The 510 models has 2 sdr's, 2 pan adapters. The 520 models has 4 sdr's, 4 pan adapters. The models with the M includes the display. All 4 models have a 500W internal Tuner, built in power supply. 510 $6,199, 510M $7.349, 520 $8,599, 520M $9,599.

QRP-Labs QMX, QMX +, ~5W. HF - 6. Available as kit or factory assembled. Assembled has a wait list.

Some History of Polar Modulation.
1952 - Leonard R. Kahn published the Theory of Polar Modulation.
2017 – QEX, Brian Machesney, K1LI and Tony Brock-Fisher, K1KP. Published. The Polar Explorer.
2019 - Tony Brock-Fisher. Demonstrated a prototype at Dayton. Flex toke notice. Tony started working with Flex. 6 years of RND.
2025 – Flex introduced the Aurora at Dayton.

Polar Modulation is not a new communication mode. It is comparable with all modes of modulation. It is a way we can work with amplification. Its a change in how we amplify a signal. It is comparable with all the modes we have today. It can be used with a linear amplifier. A class D amplifier can be used. Flex highly recommends to use ADP **-** adaptive pre-distortion with polar modulation.

Polar Modulation Overview.
The RF signal is made up of 2 components. Amplitude and Phase. Amplitude is the strength of the signal. Phase is the position or timing of the signal. Polar modulation separates the Amplitude and Phase and process them individually. The class D amplifier is used to amplify the amplitude of the signal. Phase is processed by the FPGA. Then the two signals are brought back together to form the RF signal.

Next Month: Elections, Gary, KD9VGL – Resurrecting Vintage Gear.

Meeting Adjourned at 8:40 pm.
Respectfully Submitted
Bill Dargis KD9BJZ
Secretary WARAC, September 8, 2026

Contest Corner and DX Report
Michael Falk, AA9RK

October! Cooler weather means the contest season really starts getting underway. Here's what's on the air:

On **October 10 and 11**, one big stateside activity is the Pennsylvania QSO Party. I submitted a log last year and so I already received a reminder email from the organizers. Things to know: it runs Saturday and Sunday (with an overnight break). Pennsylvania stations send serial number and county; we send serial number and ARRL section. You can work stations once per band per mode (and per county, if they are rovers). Arizona and South Dakota also run their QSO parties that weekend, plus there is an Oceania DX Contest on CW and a Scandinavian Activity Contest on SSB. Since it's October 10 (10-10), the 10-10 International organization is featuring a 10 meter contest on that day.

October 17 and 18 feature the New York and Illinois QSO Parties. Illinois is near and dear to my heart, since I will once again be mobile with the KA9FZR team (featuring Frank KA9FZR, Mike WO9B, Max KD9NZB, and myself), and we hope to work you on 20 or 40 meter CW that Sunday afternoon. That week features the slow-speed Walk for the Bacon QRP Contest and the faster speed Run for the Bacon QRP Contest, sponsored by the Flying Pigs QRP Club. Worked All Germany, the Stew Perry Topband Challenge (160 meters CW), and the 902 MHz and up Fall Sprint take place that weekend as well.

The CQ WW DX Contest (SSB edition) kind of takes precedence over everything else on the weekend of October 24 and 25. If you are trying to get DX stations in your log, this is one of the best possible ways to do it. This month's DX report focuses on stations who will be on the air for that contest. Also, the ARRL's School Club Roundup runs the week prior.

Halloween weekend, the big event is the NA SSB Sprint contest. This is one of those

Saturday evening, four hour, give up your frequency after calling CQ events. They are wild but I really enjoy them.

The Spartan Sprint, a QRP CW contest, runs the first Monday in November (and every month), from 7-9 PM on the HF bands. Then, the first full weekend in November (this year the 7th and 8th) features the ARRL Sweepstakes (CW), one of my favorite contests. (I'm just starting to notice a pattern. I'm getting into sprints, QRP events, and the Sweepstakes. High degree of difficulty in all of those. Maybe I'm just a glutton for punishment? I like my CW with a side of self-loathing?) The Sweepstakes features a long exchange including a serial number, but because of that, speeds tend to be more moderate, and activity levels are usually very high. I'll be on the air trying to get my 100. (If you make 100 contacts, you get a Sweepstakes pin; those who work all 85 ARRL/RAC sections get a coffee mug for the Clean Sweep. That's better than the days when they used to give you a corn broom.)

On the DX side, let's talk about that CQ WW DX contest and a few African stations that will be on the air:

3DA0GY (Eswatini) will be QRV from October 15 to November 2. Eswatini (formerly called Swaziland) is a tiny country – about the size of Connecticut, or 1/8 the size of Wisconsin – nestled between Mozambique and South Africa. Morten LA9GY will be the op, and while his previous operations there have been mostly CW, he wants to get on CQ WW and make other SSB contacts as well.

C5R (The Gambia) will be active in the CQ WW contest. They are on SSB and FT8 already from their QTH near Banjul.

7Q6UJ (Malawi) will be on the air, activated by Urgent W4UJ and other American and Malawian ops.

IH9/OK1M (African Italy) will be QRV, operated by Michal OK1M, activating Pantelleria Island, which is Islands On The Air AF-018. It's southwest of Sicily, but actually closer to Tunis, Tunisia than it is to Italy, which is why it's considered an African island by IOTA.

NG3K has a great website (ng3k.com) with announced operations for various contests and operating events. Check it out if you are hoping for a particular DX entry.

See you next month,
-Michael AA9RK

DIGITAL DIGEST

October 2026 * Hamtrix * By Michael Johnson, WO9B

Bullpen Issue

I've spent the last few weeks pretty much disengaged from all things radio related. The radio spent most of the time with the power off..hmmmmm, that's not normal. I took a much needed break to have some fun in other somewhat neglected areas. Felt great.

Though I may have been otherwise diverted, thank goodness not everyone was on walkabout. I've noted a few items of interest that managed to catch my attention:

Random Wire Weekly Newsletter: I've recommended this newsletter multiple timeis in the past year or so. Tom Salzer, KJ7T, has done excellent work and I have no idea how he finds the time. I did a deep dive into his last issue and stumbled on something he has been offering up that I was totally blind too. He includes a standard section in each newsletter titled which amounts to an agglomeration of internet links to all manner of radio related news, events, research, products … .literally the whole enchilada. I cannot believe I missed this all these many months. It is almost too much information. Give it a scan to see if it resonates with your reading style.

WSJT Evolution: When Joe Taylor and his talented crew opened the Pandora's Box of digital communications almost ten years ago now, who knew where it was going to go. For a time, ham world hung on every version update and Release Candidate (RC) that came from Joe's walled garden development team. To their credit, they played their hand extremely well which in my opinion was a big element in the success of the FTx modes. That was then and now, oh my, has that changed, especially with the unleashing of AI coding into the frey. We are getting some new toys to play with…

JTTY: The latest Joe Taylor digital release is an update to legacy RTTY mode. It is included in the latest version of WSJT-X and several other similar bleeding edge packages. Being a RTTY contesting fan, I'm excited to see if this mode catches on or if it is just another mode on the drop down list that never gets used.

WS Digital Suite: Formerly known as WSJT-X Improved, this variant has done a name change to formalize its splitting from the WSJT-X operation. I've used WSJT-X Improved for several years as a way to get out of the Release Candidate software upgrade hell that WSJT-X had unleashed. As an infrequent FTx user, every time I fired up the software, an upgrade to a new release or release candidate was prompted. It got very old very fast, ergo the change. The WS name change was made to allow them to adopt innovations at

a faster rate than the core software project is doing. That really says all you need to know about the changes being dealt with in this mode. My experience with the new package is very positive. I do not see an significant changes, but I am a casual user and may not be attuned with or even bother to use the menu options offered.

Through-the-earth communications

From **https://en.wikipedia.org/wiki/Through-the-earth_communications**

Through-the-Earth (TTE) signalling is a type of radio signalling used in mines and caves that uses low-frequency waves to penetrate dirt and rock, which are opaque to higher-frequency conventional radio signals.

In mining, these lower-frequency signals can be relayed underground through various antennas, repeater or mesh configurations, but communication is restricted to line of sight to these antenna and repeater systems.

Overview

Radio communication within caves is problematic because rock is a conductor and therefore absorbs radio waves. Ordinary radios typically have a very short range within caves. Low frequency (LF) or very low frequency (VLF) radio with single-sideband modulation is more commonly used today.

Through-the-Earth transmission can overcome these restrictions by using ultra-low frequency (300–3000 Hz) signals, which can travel through several hundred feet of rock strata. The antenna cable can be located on the surface only at a mine site, and provide signal coverage to the mine. The antenna may be placed in a "loop" formation around the perimeter of the mine site (or wherever coverage is needed) for systems using magnetic fields to carry signals. Systems that use electric fields as the signal carrier are not subject to this limitation. Transmissions propagate through rock strata which is used as the medium to carry the ultra-low-frequency signals. This is important in mining applications, particularly after any significant incident, such as fire or explosion, which would destroy much of the fixed communication infrastructure underground.

If the terrain makes a loop surface antenna impractical to install, then the antenna can be installed underground or a non-magnetic field type carrier may be used. But because the signal travels through rock, the antenna does not need to run into all parts

of the mine to achieve mine wide signal coverage, thus minimizing the risk of damage during an incident.[citation needed]

Cave radios

Portable magnetic-loop cave radios have been used by cavers for two-way communication and cave surveying since the 1960s.[1] In a typical setup the transmitting loop, consisting of many turns of copper wire, is oriented horizontally within the cave using a spirit level, and driven at a few kHz. Though such a small antenna is a very poor radiator of propagating radio waves at this low frequency, its local AC magnetic field is strong enough to be detected by a similar receiving antenna up to a few hundred meters (yards) away. The received signal's strength and its dependence on orientation of the receiving coil yields approximate distance and directional information.

Early models were called "speleophones"—for instance Bob Mackin's "Molefone". The Molefone is called "one of the first practical cave radios", though it is no longer manufactured.[2] Other popular LF/VLF radios include the HeyPhone,[3] Nicola System[4][5] and Cave-Link.[6] HeyPhone and Nicola operate single (upper) sideband on 87 kHz in the LF band, while Cave-Link uses different frequencies between 20–140 kHz depending on the expected distance at 30 W power.[7]

Systems like Molefone and HeyPhone operate as single-sideband (USB) 87 kHz radio with earthed electrodes of 25–100 metres (80 to 330 feet) length.[8] Design for HeyPhone system is openly available.[9] European Cave Rescue Association (ECRA) maintains a list of systems scalable and reliable enough to be used for cave rescue operations. As of April 2023 the catalogue lists CaveLink (Switzerland), Nicola (Great Britain), µHeyPhone (Great Britain) and Pimprenelle (France) as operational wireless systems.[10]

Personal emergency device

There are several systems that have been recently developed. One system is known as the PED System, where PED is an acronym for personal emergency device.[11] Initially developed after a mining disaster in Australia at Moura No. 4 Coal Mine in 1986,[12] and further developed after the Moura No. 2 Coal Mine explosion in 1994[13] where the need for a communication system to survive major incidents underground was identified in the inquiries into the disasters.

PED is a one-way text paging device, with wide use in Australia, as well as installations in the United States, China, Canada, Mongolia, Chile, Tanzania, and Sweden.[14] Australian company MST Global (formerly Mine Site Technologies) began the development of PED in 1987, and it became commercially available and Mine Safety & Health Administration (MSHA) approved in 1991.[14] The best documented use of PED during a mine emergency is from the Willow Creek Mine Fire in 1998 in Utah, where it was able to quickly alert miners underground of the need to evacuate before toxic fumes from the fire filled the mine. Reports of this use can be seen on the MSHA website.[15][16]

Development

Emerging technologies have recently been developed such as the Rescue Dog Emergency Through the Earth Communication System[17] developed by E-Spectrum Technologies. The Rescue Dog is a two-way extended-range portable through-the-Earth solution that was developed in the US in cooperation with The National Institute for Occupational Safety and Health (or NIOSH)[18] which does not rely on large loop surface antennas for signal transmission. New non-portable systems have also been developed by companies such as Lockheed Martin for use in emergency chambers to provide post-accident, two-way, emergency voice and text communications independent of surface or in-mine infrastructure.

New technologies

A new wireless "Miner Lifeline" telecommunication technology is being tested in 2012 at the West Virginia Robinson Run mine (recent production 6,000,000 short tons (5,400,000 t) per year of coal using 600 miners). The system supports voice, text, or SOS sent on a "bubble" of magnetic waves, and "can move more than 1,500 feet (460 m) up or down and 2,000 feet (610 m) laterally, arriving in less than a minute."[19]

The Israeli company Maxtech[20] has developed a software system that automates the optimal organization of a set of limited-range communications devices, using any mixture of types of communication (through-the-earth radio, line-of-sight radio or optical, etc.). This system was used in the Tham Luang cave rescue.[21]

Sybet developed an underground communication network system based on a large number of autonomous, portable transceiver nodes (BatNode) which operate in mesh architecture, forwarding voice calls over long distance with no radio connection between the end stations, as long as the BatNodes can see their neighbours.[22]

Editorial

Ham radio has many paths so getting bored with it is hard. Found underground radio interesting so I enclosed a Wikipedia article on it. Enjoy!

Have been a member of the morning Nutnet for years. A good way to start the morning. One of our regular members moved into a home with many Ham radio challenges. That became a challenge for some of the members to solve. They met the challenge and the member is still able to join us in the morning.

The radio is in Green Bay area and the operator in the Milwaukee area. It is working well with only a few bugs to solve.

To me that shows Ham Radio at its’ best. Combining Radio, internet, electronics, etc.

Hamtrix was a little late due to my power supply on my computer failing twice in a week.

Have a good month
Frank

Electronics Inventory Reduction

Decision has been made to reduce the inventory of all my electronics.

Have already started to collect to store all kinds of items such as connectors, knobs, switches, capacitors, meters, antenna parts, ARRL manuals, odd replacement pieces and the list goes on.

What ever is not wanted by someone will be taken to the "dump".

Date for this event is still TBD, but probably mid October.

Suggest that of you are interested, e-mail back to me and I will start an e-mail list.
73,
Phil Gural, W9NAW
janphil68@att.net

America Worked All States (WAS) is a year-long event, calling all radio amateurs worldwide to make contact with all 50 US states in honor of America's 250th Anniversary. ARRL will produce a basic achievement award for amateur radio operators who meet the challenge. There are also 3 endorsements. Each week several W1AW states are on the air calling cq on different modes and bands. This week the states of Colorado W1AW/0 and Montana W1AW/7 are on the air. These contacts will be confirmed on Log Book of the World.

In April Gil, myself and a group of hams from Wisconsin operated as W1AW/9. We assigned ourselves two hour shifts on a shared spreadsheet for a mode and band. The Wisconsin Team made over 5,000 qso's. To participate check out the America250 on the ARRL website. View the schedule weekly to see the states and operators calls. Wisconsin W1AW/9 is scheduled again the week of October 21, 2026. Our lead operator is W9XT Gary Sutcliffe. There is still an opportunity to work all 50 states until the end of the this year.

73 Donna WB9TFF and Gil WB9TFH

CW Practice

One of the best and maybe the only way to get better at CW is practice. Having someone else who also wants to practice also helps. Just makes it more fun.

The West Allis Radio Club is going to try to help. We are running a CW practice net on Monday at 8pm The repeater is 147.045+ 127.3 the CW portion is on HF

Mike WO9B has been joining me and setting up some practice but we are open for suggestions on where to go with this. Come join us.

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