



Official Publication of the  
West Allis Radio Amateur Club

# Hamtrix

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Volume 73, Issue 7 July , 2024

## JULY CLUB HAPPENINGS



### NUT NET

3.985mhz  
Monday-Saturday  
8:15am CT

### WARAC 4th Tuesday

Breakfast  
At the Forum  
Layton & Hyw 100 at  
8:30am

### The Milwaukee-Florida Net time is:

7:15 – 8:00AM Central  
8:15 – 9:00AM Eastern  
Mon through Sat

### Meeting

**Tuesday July 9, 2024 7pm**  
**New Berlin Community Center**  
**14750 W. Cleveland Ave.**  
**New Berlin, WI**  
**Between Moorland and Sunnyslope**

### Presentations

**Allstar Link Net, Home and on the Road**  
**Rich Hawthorne, W9ABE**

**Rich will discuss this analog radio internet based voice network. How it is used, equipment needed to participate and base station and portable equipment setups.**

**Field Day followup**  
**Dave Garnier WB9OWN**

**Premeeting dinner**  
**New Berlin Ale House 5:15pm**  
**16000 W. Cleveland Ave**  
**West of Moorland Rd.**

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## 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

## WARAC

### Find Us On The Air

**VHF Simplex 146.55 Mhz**

Looking for a Club Member to chat with? Fire up the VHF rig and give a shout out on the VHF Simplex Frequency 146.55. You'll be surprised how often someone is listening. Hit the PTT and say "Hello"

**DMR - BM TG 3155 WI State**

The WI State 3155 TG is available on all the local DMR Repeaters AND via your HotSpot. Put yourself monitoring and come find a Club Member

**Nut Net - Mon to Sat on 3.985 Mhz @ 8:15 AM**

Join The Nut Net on 80 Mtr SSB from 8:15 to 9:00 AM Mondays thru Saturdays. Check-ins are from all over WI. You'll be a Nut Netter regular in no time. This is a general discussion net that gets your day started out right.

**Milw - Florida Net - Mon to Sat 14.290 Mhz 7:00 AM**

Join Tom, K9BTQ, for this early morning Check In Net, Mon thru Sat on 20M from 7:00 AM to 8:00 AM. Get the news to get your day started out just right.

**6 Meter Chat - Wed, Fri 50.160 Mhz @ 9:30 AM**

Paul, W9PCS, hosts this informal 6m online get together on Wed and Fri starting at 9:30 AM. This is a round table discussion and everyone is welcome to drop by and join in.

## WARAC General Meeting Minutes – June 11, 2024

Called to order by Feroz WU9N @ 7pm.  
Attendance: 23 – 22 Members, 1 Visitor.

Feroz: – did intro's.

**April General Meeting Minutes:** - Approved.

**Treasury Report** – Bill N9KPH: - Approved.

**Scholarship** – Howard WA9AXQ: The ARRL has not issued a list of scholarship winners so far. ARRL is checking the endowment fund status, will get back to Howard. Feroz and the Board would like to see the club payout a \$3K scholarship. How much is the club willing to supplement the ARRL endowment to keep a \$3k scholarship?

**Dave WB9OWN – Field day:** Will be battery power only. Dave will be on site by 8:45am. We will operate to ~-(8-9pm). Planning on 40, 20, 15, 6m. Modes, Ft-8, CW, Voice. Will use BPF's. Feroz will pay for the evening meal.

### **Programs:**

July: Rick – AllStar link presentation.

August: Pizza in the park.

September:

October: Elections. Think about running for a position.

November: Dues for 2025.

Feroz: The club should find reasons to strength our relationship with New Berlin. The last few years we have been using the meeting room at no cost to the club. Club could do a net for an event. Any other ideas.

**Presentation:** Mark Tatera KD9NBR - Boy Scouts troop #175 and Ham Radio

**Radio Merit badge** - High level theory on radio and radio waves, the differences between broadcast and ham radio. Morse code ribbon. (JOTA), 3<sup>rd</sup>. Sat. in Oct. The local Milwaukee area doesn't do JOTA. Would the club be interested in helping the scouts get their radio merit badge and get help them on the air? And maybe their Morse code ribbon? Possible future club members. If we are interested. Mark can contact the local councils to try and get things started.

Meeting Adjourned at 8:02 pm.

Respectfully Submitted

Bill Dargis KD9BJZ

Secretary WARAC, June 11, 2024

## WARAC Board Meeting Minutes – June 4, 2024

Board meeting called to order by Feroz Ghose WU9N @ 7PM.

Present: Feroz Ghose WU9N, Mike Johnson WO9B, Bill Dargis KD9BJZ, Bill Reed N9KPH, Frank Humpal KA9FZR, Howard Smith WA9AXQ.

### **Minutes: Approved.**

**Treasures Report** - Bill N9KPH: On the issue with club and scholarship funds in the same account. When the CD comes due. Bill will open a second savings account for the scholarship fund.

Treasures Report - Report: Approved.

### **Programming for the year:**

June: Field day, Boy Scouts and ham radio.

July: ?

Aug: Pizza party.

Sept: ?

Oct: Club Elections.

**Scholarship Discussion:** Howard to contact ARRL and ask how the Scholarship fund is doing. Need to establish guide lines. Based on Scholarship fund amount. 1. If large enough to fund full \$3k. 2. If not enough to fund full \$3k. Do we supplement and how much is the club willing to supplement using the club scholarship fund to issue a scholarship. 3. Or no scholarship for the current year. Board will present to membership for discussion.

**Fund raising:** 2 Brat fries, possible yearly raffle. What other activity's or projects can the club do to raise money?

Feroz would like to see the club maintain a minimum of \$1k to \$1.5k in the clubs savings account. Being a 501(c)(3) nonprofit organization. Are we eligible for grant money? Need to look into what is involved with getting grants.

**Hamtrix:** Thank you Frank, for all your hard work you do with putting together Hamtrix and making sure it is published and sent out to our membership.

**Symposium:** We still need someone to chair the project, and get thing rolling. Book the hall, speakers - set topics, get the word out, etc. January is still open.

Collaboration with organizations: New Berlin – Library? Mike, maybe an SDR connected to the internet for library use. What can we do to help the New Berlin community?

Meeting Adjourned at 7:59PM.

Respectfully Submitted

Bill Dargis KD9BJZ

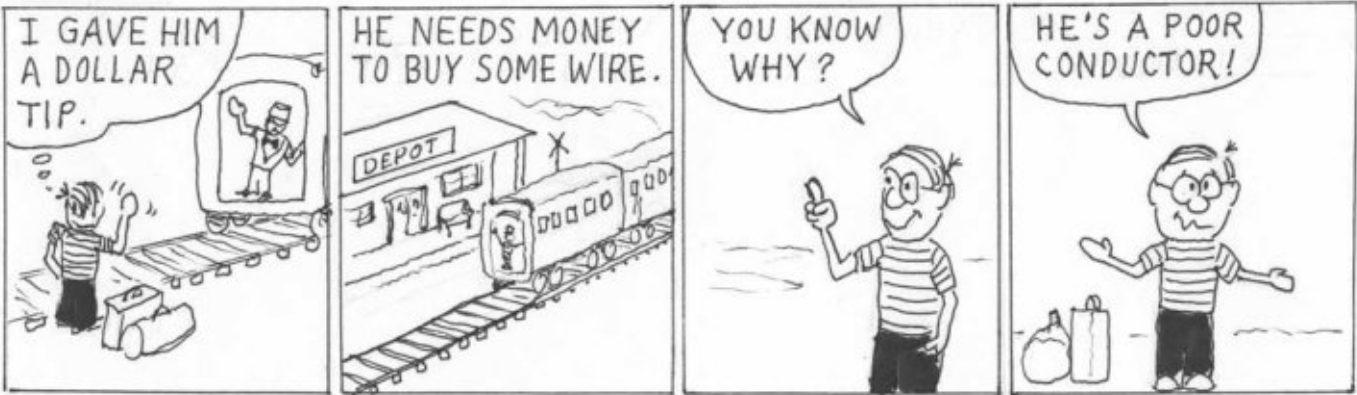
WARAC Secretary, June 4, 2024



**2024 Challenge for our membership. Have someone you meet, Ham or Ham wannabe come to a meeting this year!**

**ELMER**

**by Rich Regent, K9GDF**





July 2024 \* Hamtrix \* By Michael Johnson, WO9B

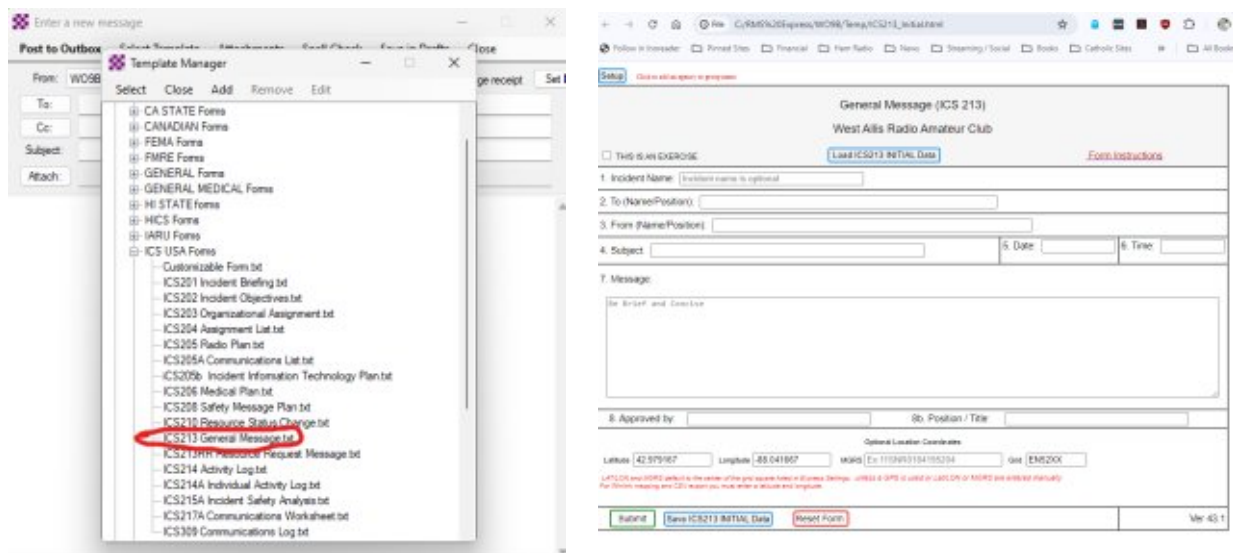
## Field Day WinLink

Field Day 2024 is finally the year I earned the 200 bonus points for NTS Traffic Handling. I've never been an NTS CW/SSB ham so those points were always passed over. Eavesdropping on a ham conversation a couple years back, they were going on about Winlink being used to qualify for those points. I tucked that nugget away and finally this year opportunity, gear and ability came together to make it happen. I've banged the drum for Winlink in the past and as it is just another digital mode these days, all it takes is a willingness to set it up. I've been using it for several years and have it working very reliably. Field Day represented my first real opportunity to put all that practice to a good use in a setting where it actually counted.

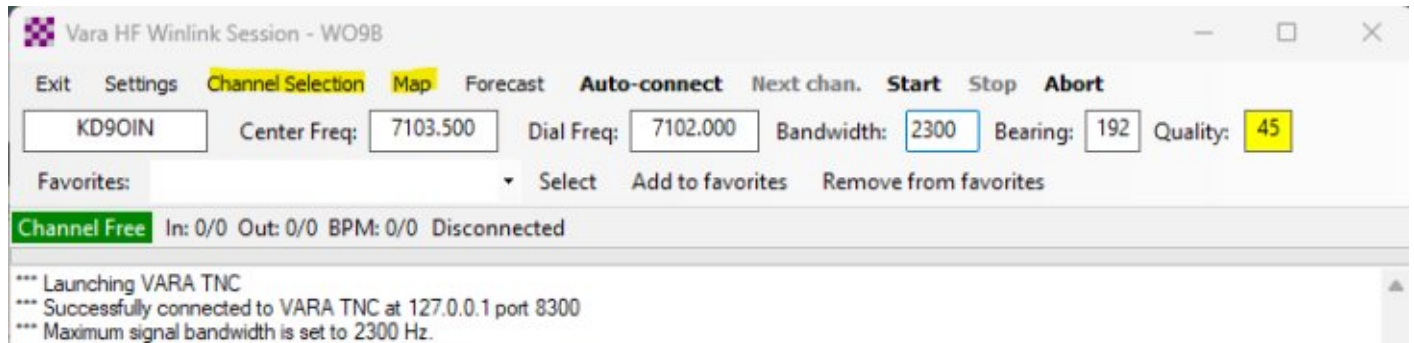
Winlink is very straightforward to set up. If you have FT8 running, then you've already walked that road. I don't intend this as a WinLink HowTo, but in a nut shell you only need to have two software packages installed: **WinLink Express** and **VARA HF**. WinLink Express is the core program and VARA HF is the modem software. Between Google and YouTube, you can figure out how to install and configure them.

Getting back to Field Day, the challenge at my QTH (UP of MI) was the lack of internet. This was to be a completely offline FD. No cell service, no internet, no text messages. Reading the rules, qualifying traffic messages via Winlink need to be sent in an ICS213 format. The points are earned by sending one message to the Section Manager (100 pts) and 10 messages to anyone else (10 pts each). For me, the others consisted of various ham friends.

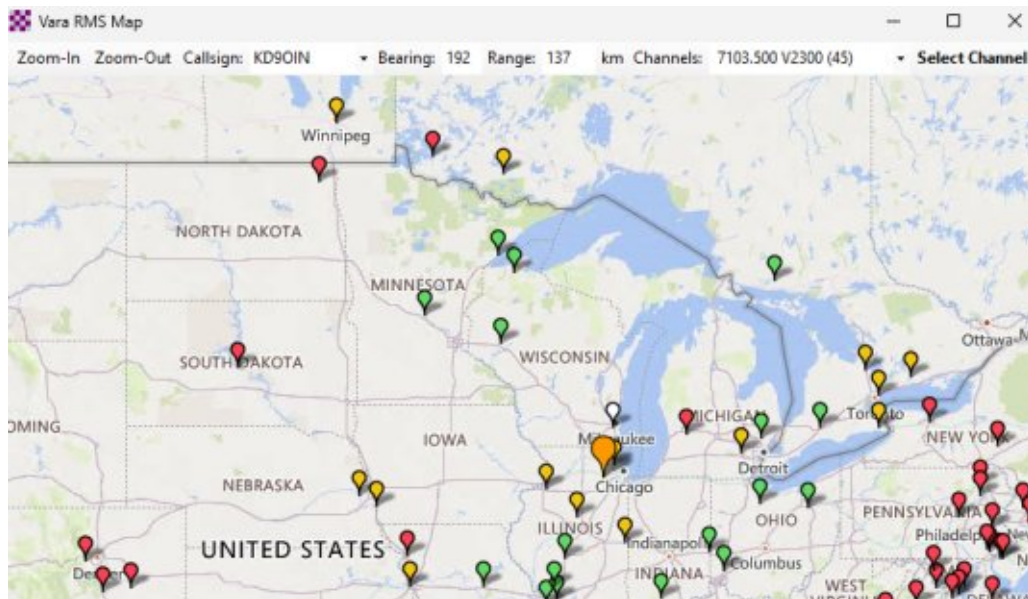
One of the features of Winlink Express is a plethora of standard message templates embedded in the software. The ICS213 is included. It is found on the drop down menu of a typical blank message form as shown. A click brings up the blank ICS213 form in your browser, ready for you to fill in. You lather, rinse and repeat this process the required 11 times and now your Outbox is stuffed with 200 Bonus Points of Field Day NTS goodness.



The next step is to transmit the messages. When Winlinking from my home QTH, the node stations that you connect with are familiar. With a new QTH, that changes the equation. Running a QRP station meant a 5 W limitation. Additionally, the antennas were limited to 40 thru 10 meters. Assessing propagation and the prevalence of nodes to connect to, that meant 40 meters was the hunting grounds, being fairly quiet during the day with a reliable communication range of 300 miles or so. Let the node hunt begin.



Winlink Express has several tools to assist in finding a node. Once you “Open a Session” the normal process is to click Channel Selection and pick a node from the drop down list. That was not helpful for FD as the list was several days old and because of lack of internet, not readily updateable. The list can be



updated via radio, however, it is very time consuming and still requires a connection be established.

The right choice for me was to click on Map and visually select a candidate. The color coding indicates band, with green being 40 meters. Hovering over the icons brings up information on that station. The information on the map is also not current, but it is easier to

visually select nodes to try rather than picking from a list.

Once a node is selected, the connection is initiated by clicking on Start (See the Menu above). The process is automatic after that as a multitude of connection attempts are transmitted. If you strike out, just move to another node. I actually succeeded in making a connection with a node near Chicago, but the connection was poor which resulted in a glacially slow data transfer rate. Finally, a robust connection was made with a node near Duluth. In a matter of just a few minutes, all 11 emails were launched. Just like that. 200 Bonus points were in the pocket. Yea!!

There remained one final Winlink trick to explore. Being without internet or cell phone, I had not phoned home in several days. Turns out that most cell phone providers offer an **email to text** capability by simply sending an email to the appropriate address. Best to keep it short and text only, but the neat part is it allows for responses. So with that, out went a message to home, “All is well. Can you stop the rain?”. No bonus points from the ARRL, but I definitely got some flowers from the home front. That, when all is said and done, is the spirit of Field Day.

# Swap Corner

**If you have something ham related you are looking for or you would like to sell or give away. I would be happy to post them in Hamtrix**

**Editor**

**It is time to thin the herd. I have acquired too much radio stuff. I am ready to sell:**

Ten Tec Omni D : All solid state, 160-10m (no WARC bands), 100 W transceiver. It has a couple of small quirks (PTO needs to be greased; SWR meter isn't accurate), and it still has all the original filter caps. If you're going to use this rig hard, it might need a little work to update it. But I made POTA CW and CQ WPX SSB contacts with it recently, and got good signal reports. I have the matching power supply and an Astatic Microphone for it. \$400 or best offer for radio, power supply, and mic. I'm inclined to make a good deal for a club member. I also have the matching CW keyer and a Signalink USB which is wired for this radio, if you are interested.

Ten Tec Argo 556 : This is a QRP rig with 10 watts of output power. It works on CW, SSB, and digital (if you have a Signalink or similar). This radio has band modules; to change bands, you pop a piece out of the radio and pop a new piece in. That system works very well. I have nine band modules (160, 80, 40, 30, 20, 17, 15, 12, and 10 meters). The modules go for upwards of \$70 apiece on eBay. I'm asking \$500 for the radio, microphone, and all nine band modules. It works like a dream on CW with an internal keyer and fast QSK. It is a power miser and gives me a lot of hours of operation on one battery. (I have installed Powerpoles on the power cable.) Recently this rig saw some use on 20 meters FT8 with the Signalink, and it has been my Winter Field Day rig twice. Again, let me know if you are interested in the Signalink to go with it.

UT5JCW Transverter : This is a 144/28 transverter, meaning you transmit on (for example) 28.390 MHz and it will come out on 144.390 MHz. This is a Ukranian transverter which I bought in 2020. It needs 5 watts of drive on 10 meters for 15 watts out on 2 meters. It has some frequency stability issues as it changes temperature, which is a known issue with these transverters. It is fine on FM, pretty good on SSB, and usable on CW, but difficult to use on FT8 without modifications. When I got my FT-991, which is an all mode radio on VHF, I didn't need this transverter anymore. I paid something like \$120 new for this, but I will sell it for \$50. It is installed in the aluminum housing, and comes with a power cable onto which I've installed Powerpoles.

**Contact Michael AA9RK: (414) 254-5619 or [aa9rk@e-falk.com](mailto:aa9rk@e-falk.com)**



## The Future of Communication & Nanotechnology

### Tom Langer KD9FPC

In the next few minutes we'll be discussing the impact of nanotechnology on our ham radio world. And, it is huge. Now, I wish I could just show you a picture of a "nano", but that is not how it works. When you finish reading, I pray you will once again leave amazed at this incredible universe that God gave us. The following is a definition that was found during my research:

Nanotechnology is the study of phenomena and fine-tuning of materials at atomic, molecular and macromolecular scales, where properties differ significantly from those at a larger scale. Nanotechnology is also defined as the study of structures which are in size between 1 to 100 nm. Nanotechnology is changing significantly in the field of electronics, especially in regard to computers, telecommunications and optics.

Source: *Department of Electronics and Communication Engineering, Nagole Institute of Technology & Science, Nagole, Hyderabad, Telangana, India*

To save my fingers from a long session of hunt and peck, from here out, nanotechnology will be referred to as nano. Thank you! Actually, I came across the technology through my research on an article for a magazine article I wrote recently. My first real understanding came when listening to engineers speak at some regional Automechanika shows overseas.

At these meetings they were discussing how nano could allow them to build windscreens that are "hyperphobic". In other words, through manipulating the slurry that makes glass at an atomic level you would end up with absolutely flat glass at the molecular level that would not hold water. In a windshield you could almost replace wipers with a blower or maybe eliminate them. For a demonstration, buy a container of Rain-X and treat your windshield. While it will wear off, a nano manipulated glass does not.

Digging deeper one source mentioned that nano was in place and was \$1.6 trillion dollar market way back in 2013. In fact, you have been sitting on different nanos in your living room if you have a piece of cloth furniture made in the past 10 years that was treated for staining. Through nano, a cloth treatment was devised that made you chair hyperphobic. That's why if you spill something on the cloth it seems to magically run off.

Here are a few areas that nano is impacting us today:

- Sunscreen – titanium oxide & zinc oxide
- Adhesives – one that gets stronger as it gets hotter
- Tennis balls
- As mentioned, furniture. And add some carbon fiber to the cloth mix and you also reduce fire issues.
- Clothing – silica that is used for stains and waterproofing
- Car Paint & Interior surfaces (e.g. one brand "Nanorepel")
- Computers – silica, other chemical mixes

Source: Forbes

And the list goes on. Even the low friction motor oils that allow for the 0W 15 oils. In the auto industry you'll see nano in development of lightweight, stronger frames, enhancing sensors, making batteries smaller while at the same time more powerful.

Nano is finding a place in medicine as well. Making items smaller, stronger and lighter. And as recently released... "Researchers at M.D. Anderson Cancer Center and Rice University are combining nanotechnology and equipment you would find at any radio station to battle cancer." Further in the details

**Continued next page**

they are using the equivalent of our ham radios, along with targeted meds and radiation in cancer treatment.

As you may recall in a past article we discussed the ARDC. That's the group that funds research into ham radio along with related technologies, science and research. Their money often powers ARRL grants for research. In any event, they are currently funding a number of projects regarding the use of nano in the radio and communication's world.

More generally, nano is already impacting the world of electronics. While much is in the research and discovery phases, a number of scientists and people related to the industry suggest that nano is going to usher in the next age of technology. Here are examples of work underway (Source: Hawks Perch Technical)

- Researchers at the University of Michigan have demonstrated a technique to grow single layers of hexagonal boron nitride on graphene. The boron nitride can be used as an insulator, so this technique may lead to wafer level sheets of very thin graphene insulated by very thin boron nitride.
- Researchers at NIST have demonstrated an LED build with zinc oxide nanostructures called fins which generates much higher light output than existing designs of similar size. The researchers also found that raising the current caused the structure to generate laser light.
- Researchers at the Royal Melbourne Institute of Technology have demonstrated atomically-thin indium-tin oxide sheets that may make touchscreens that cost less to manufacture as well as being flexible and consuming less power.

Cadmium selenide nanocrystals deposited on plastic sheets have been shown to form flexible electronic circuits. Researchers are aiming for a combination of flexibility, a simple fabrication process and low power requirements.

- Researchers at Georgia Tech, the University of Tokyo and Microsoft Research have developed a method to print prototype circuit boards using standard inkjet printers. Silver nanoparticle ink was used to form the conductive lines needed in circuit boards.

This list is but a few underway, there are untold more. But if you just think about some of this it is almost too much to behold!

So what about us? The members of WARAC? Well, if one looks out a bit, just imagine with me a rig that weighs next to nothing, takes up very little space, a readout that's brighter, easier to read, expanded use of touch screens and more. Possibly an amp that is the size of our little switching power supplies. A power supply in the transceiver that is also able to power all of the many add-ons. Little tiny speakers in the transceivers that offer near theater sound. And, as we construct our projects, having circuit boards we print in our home computer on a flexible material that includes the needed transistors, resistors, capacitors, and etc., all in the printed board within the ink.

The words that describe the outcome of nano are smaller, stronger, lighter, less power consumption, more powerful and more. It sounds like nirvana for those involved in manufacturing, medicine, consumer goods and our beloved communication world. But, there are some great unknowns relative to its impact on health, the environment and more.

A short paragraph from The Center for Food Safety; Due to their small size, nanoparticles can cross biological membranes, cells, tissues and organs more readily than larger particles. Once in the blood stream, nanomaterials can circulate throughout the body and can lodge in organs and tissues including the brain, liver, heart, kidneys, spleen, bone marrow and nervous system. Once inside cells, they may interfere with normal cellular function, cause oxidative damage and even cell death.

**Continued next page**

In other words, as one expert put it, “its effect on the lungs appears to be similar to asbestosis”. As a result, will nanotechnology result in harm to those working to manufacture or service these things in the future? Or, as with food, could altered food cause health issues? Appears so. What about medicine? Not wanting to wade into politics here, would we want them in a vaccine? Currently there is work to better support the MRNA (Covid) vaccines through nanotechnology. Not this guy!

While the proponents of nano would present this as new and exciting science, which it no doubt may be, seems appropriate to step back and take another look. Stronger, cheaper and smaller or improved may not be worth it if the result is to further tax our own health and immune systems. Just ask the people who struggle with mesothelioma today. Besides, can anyone stand to watch another round of attorney ads for another issue?

Nano is truly amazing and may very well be another technology turning point. Just think what could be accomplished. However, now is a good time to pause, along with AI, and see what’s in Pandora’s box. Whatever the future holds, there is little doubt that we live in an incredible time.

## The editor

I think we are getting short months. Time seems to go by faster and faster! Still working on my picnic table portable antenna. It proved that it transmits at least the reverse beacons network says it can hear me. Still haven’t made any contacts. That may be the operator and/or the propagation at the time I play with it.

The other ham related task, is the long time goal of relearning Morse code. I’m doing ok but it has taken a lot of practice. Still with Morse code being such a big part of Ham radio I consider it a worthy goal. I think it is one of the first things that comes to mind of a non-ham when you mention that you are a Ham.

Not much else this month.

Frank editor

# 12th A.R.R.L. DX Competition—Warning

## **Rule 11 (Re Disqualifications) Extended and Explained—No Contacts with Countries on European Continent Permitted**

**T**HIS notice is addressed to all United States amateurs interested in participation in the Competition for March 15th–17th and 22nd–24th, which was announced in detail on page 38 of February 1940 *QST*. The paramount consideration of our neutrality responsibilities leads the League to rule that no contacts with stations in the European theater of belligerent activities, or with belligerents, or colonies of the belligerents or closed-down neutrals, may be permitted.

Besides reporting on off-frequency stations (all nations), and improper notes, Official Observers this year will report for disqualification, any U.S.A. stations:

- (1) that call or contact *any European station*;
- (2) that call or contact stations in Australia, Canada, India, New Zealand, the Union of South Africa, any British or French colonies or any countries that may be added to the U. S. proclamation of neutrality by Presidential action on or before the contest;
- (3) that call or contact stations in any countries in which amateurs have been temporarily closed down<sup>1</sup> by government edict where amateur licenses were formerly issued in the normal manner.

This self-imposed amateur black-out on Europeans,<sup>2</sup> and others,<sup>2</sup> is a precaution necessary in view of the war. Study of the situation with respect to even the European neutrals indicates that so few Europeans could be counted under the rules published last month, that in the general interest of good conduct, to insure complete understanding of this matter by all participants, it was advisable to leave Europe, including European U.S.S.R., completely out of the contest this year. Not only will no credit be allowed for any European contacts or others per (1), (2), (3) above, but calls intercepted and reported as above indicated, will be used to disqualify contestants, if such are made between March 15th and March 24th. We advise amateurs, not only in contest time, but at all times until war matters are again remote from public attention, to adhere strictly to the A.R.R.L. Neutrality Code, and the above recommendations and rules, in the interest of the unrestricted continuance of our amateur radio. Next year, we hope it will be different, and that fewer restrictions will be necessary.

— F. E. H.

<sup>1</sup> Practically every European neutral is such a country, hence blanket prohibition (1).

<sup>2</sup> Participants will be well advised to identify prefixes carefully before doing any calling. See the Country List, pages 441–442, *The Radio Amateur's Handbook, 1940*, refer to your A.R.R.L. Amateur Radio Map of the World, or consult the tabulations, pages 84–90, Oct. 1939 *QST* which appeared with the report on the 11th A.R.R.L. DX Competition.

**DON'T KEY LIKE A PHONE MAN**



## **SLOW SPEED CW QSO NET**

***Monday's - 8:00 PM - WBOAFB Repeater 147.045 + 127.3 Tone***

### **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.

Officers and Board  
President  
FEROZ GHOUSE WU9N

Vice President  
MikeJohnson WO9B

Secretary  
William Dargis KD9BJZ

Treasurer  
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