



Official Publication of the
West Allis Radio Amateur Club

Hamtrix

Volume 73, Issue 12 December , 2024

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DECEMBER CLUB HAPPENINGS

Meeting

Tuesday December 10, 2024 7pm
New Berlin Community Center
14750 W. Cleveland Ave.
New Berlin, WI
Between Moorland and Sunnyslope

Presentation

HamClock by Chuck. W9WLX

Club Premeeting dinner

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



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

When you see
words in red letters
and underlined
that is a link to a
web page.

[WARAC web page](#)

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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.



'Tis the Season

Merry Christmas everyone. The wonderful 80 Deg fall weather vanished in the twinkling of an eye leaving us with a real winter to deal with. Ugh. In a very unWO9B fashion, I managed to wrap up my fall antenna projects before the cold snap. That never happens.

I hope you are planning to join us for the December 10th club meeting. Usual time, 7:00 PM, with the gathering at the New Berlin Ale House for a pre-meeting dinner at 5:15 or so. I'm looking forward to the **"Hamclock" presentation by Chuck, W9WLX**. Everywhere I turn these days, someone is talking about Hamclock. This is our chance

to get the full story from Chuck. His presentations are always worth taking in.

We also have a couple of business issues to discuss this month. The WI QSO Party Tech Upgrade will be up front and center. It is turning into a real-time Christmas Miracle that I am looking forward to sharing with the club. Also we will be looking for the annual David Knaus Memorial Scholarship authorization from the membership. Both of these proposals are written up in this month's Hamtrix.

On the list of upcoming activities, as is our tradition, the January meeting will be our annual Holiday Dinner. We are planning on having it once again at the Wauwatosa Pizzaman Restaurant. The details have not yet been finalized but you should pencil in January 14th at 6:30 and keep an eye out for the confirmation email.

In the shack, I am planning on making an appearance in the ARRL 10 Meter Contest which starts on Friday evening, Dec 13th and runs through most of the weekend. 10 meters has been "on fire" of late. I'm hoping the conditions are wild this year. Fingers crossed.

Finally, best Holiday wishes to everyone. Enjoy the season and it's OK to indulge in a bit of excess this time of year!!

MJ, WO9B

WARAC General Meeting Minutes – November 12, 2024

Called to order by Mike Johnson WO9B @ 7pm.

Attendance: 27 – 24 Member's, 3 Visitor's.

Mike – Did intro's.

Oct. 22nd Board Meeting Recap.

- a. Committee Chair's were confirmed.
 1. Frank KA9FZR: Hamtrix, Sendik's.
 2. Dave WB9OWN: Field Day.
 3. Chuck W9WLX: WIQP.
 4. Howard WA9AXQ: Scholarship.
 5. Pierre KD9SSY: Publicity.
- b. 2025 Budget was approved.
- c. Club priorities for 2025
 1. New Berlin Out reach – after January.
 2. Web Site – MJ – by January.
 3. Symposium – Feroz – Target - January 2026.
 4. Club Directory – Bill D. KD9BJZ – January.

November is Membership renewal. See Bill Reed N9KPH.

Oct. General Meeting Minutes: - Approved.

Oct. 22nd Board Meeting Minutes: - Approved.

Treasurers Report: Bill Reed - Stable. Approved.

Dave WB9OWN: Field Day summary.

Chuck W9WLX: WIQP Hardware, software update request. More information to be published in Dec. Hamtrix.

The current meeting location is scheduled to be demolished in the near future. The school at Sunny Slope and Cleveland is being remodeled to be the new location of the community center.

Presentation: Al Hovey, WA9BZW: Working Dx, AI Style.

What is Dxing - identifying distant radio or television signals or making two-way radio contact with remote stations. Right now is the prime time for chasing Countries with the current sunspot activity.

There are 3 parts to Dxing. Identify, location, verifying and log, upload the station. (LoTW, eQSL, QRZ log).

Al uses Ham Radio Deluxe.

Tools and tricks for working Dx.

Resources:

Arll Dx Bulletin (email) – Free (on Fri.).

Dx World, [DX-World | The World's Biggest and Best DX News Service for DXers and IOTA enthusiasts](#) – Free.

The Dx Daily, [The Daily DX Newsletter | The Daily DX](#) – Paid.

Locating Stations:

DXSummit. [DXSummit.fi.](#)

Club log. [Club Log: Log Search.](#)

pskreporter. [Display Reception Reports.](#)

VOACAP. [VOACAP Voice of America Coverage Analysis Program.](#)

DXMAP, [QSO/SWL real time maps and lists.](#)

You can receive Awards for Dxing through – Arrl - LoTW, Dxcc challenges, Dx Century Club - Century Club, [The 3905 Century Club.](#)

Dec. presentation: HamClock by Chuck. W9WLX.

Meeting Adjourned at 8:32 pm.

Respectfully Submitted

Bill Dargis KD9BJZ

Secretary WARAC, November 12, 2024

WARAC Board Meeting Minutes Dec 3, 2024 7:00 PM

In Attendance:

- Michael Johnson, WO9B
- Pierre Porter, KD9SSY
- Bill Reed, N9KPH
- Bill Dargis, KD9BJZ (absent)
- Thomas Macon, K9BTQ
- Jeff Pahl, W9JSP
- Feroz Ghouse, WU9N
- Howard Smith, WA9AXQ

1. WIQP IT Tech Upgrade Funding Resolution was reviewed. The amount needed by the WIQP is \$500. Due to membership donations, the remaining balance to be funded by the club is less than \$150. Motion was approved to fund the shortfall.

2. Membership Renewal: Membership renewal status was reviewed. The board approved membership fee waivers for 3 Life Members.

3. 2025 David Knaus Memorial Scholarship Funding Resolution was reviewed and unanimously approved. Will be published in Hamtrix for membership consideration and approval at the December Meeting.

MEMBERSHIP FUNDING PROPOSALS FOR THE DECEMBER CLUB MEETING

In accordance with WARAC's rule and by-laws, expenditures in excess of \$250 need to be noticed in Hamtrix in advance of being presented to the membership for review, discussion and approval. This month we have (2) proposals being presented.

1) MEMBERSHIP FUNDING PROPOSAL FOR THE WIQP COMMITTEE

BOARD ACTION: *The WIQP Committee approached the Board in Oct with a request for funding for new computer equipment and software. The details are below. What started out as a very significant funding request, due to an outpouring of donations from the club members, has turned into a minor club expense well below the Board limit of \$250. At a special board meeting on Dec 3rd, a unanimous vote authorizing that expense was approved. This is a wonderful story and I'll share the details at the club meeting on Dec 10th. Thank you to everyone that contributed. Just outstanding. No membership vote is required for this item.*

Wisconsin QSO Party IT Update Proposal

Sponsorship of the Wisconsin QSO party has been a fixture of the West Allis Radio Amateur Club for 50 years. The club has overwhelmingly supported the event through member's time and dedication, making it a highly regarded affair in the Amateur Radio Community.

On rare occasions, it becomes necessary to refresh the IT tools that are used to accept, process, and analyze the logs and report the contest results. Several factors have accelerated the need to update at this time.

The current hardware is 13 years old and does not support Windows 11. Microsoft is discontinuing support of Windows 10 in September, 2025. New hardware is needed to run the updated operating system. The WIQP ecosystem is based on Microsoft Office, specifically Access, Outlook, and Excel. Presently, Office 2010 is being used, however, its support ended October, 2020.

Since this system is on the public internet and one of its primary functions is to accept files from unknown sources, continuing to use unsupported/unpatched software is a security risk. Catastrophic events can never be eliminated entirely, but we need to do our due diligence to mitigate the risk as best we can.

The West Allis Radio Amateur Club by-laws require that any expenditures exceeding \$250 need membership approval. The approval, if needed, will be up for vote at the December, 2024, meeting.

Numerous members have made donations to the cause already. A heartfelt THANK YOU goes out to everyone who has contributed. If the donation amount reduces the club expense to less than \$250, a vote will not be necessary.

Expenses:

PC hardware--\$399.

Amount not to exceed \$100 for Office 2021 (cost is variable due to purchase under club's 501(c)(3) status.

Monitor, keyboard, mouse—\$0 as PC is used in headless configuration

Other ancillary software--\$0, freeware

Respectfully,

Chuck

Chuck Dellis

WIQP Chairman

2) FUNDING AUTHORIZATION FOR THE 2025 DAVID KNAUS MEMORIAL SCHOLARSHIP

BOARD ACTION: *The Board has reviewed the following request and unanimously recommends approval by the membership*

Since 1988, the West Allis Radio Amateur Club, Inc., has awarded educational scholarships to outstanding qualified amateur radio college students, primarily from Wisconsin, to further their studies in technical related fields. Roughly 10 years ago, WARAC joined with the ARRL Foundation by establishing an endowment administered by the ARRL Foundation to better facilitate scholarship awards and actively manage the endowed funds. In addition to the endowed funds, WARAC maintains and manages a separate account earmarked solely for use in funding the annual scholarship as may be needed.

On or about January 1st of every year, the ARRL Foundation reports on the financial status of the endowment fund and confirms with WARAC the desired scholarship award amount for that year. At times, the situation requires additional monies be forwarded to the Foundation. The requested confirmation typically has a very narrow response window which normally does not work well with our membership required approval process. As such this proposal is requesting prior authorization from the members for the 2025 scholarship so that we can better work with the ARRL Foundation process and timing.

Authorization Request

WARAC will be authorizing a \$3000 scholarship amount for 2025. The normal endowed funding typically supports a \$2000 scholarship amount. We are requesting the membership approve a disbursement not to exceed \$1000 from the club's scholarship accounts for WARAC's portion of the 2025 scholarship.



December 2024 * Hamtrix * By Michael Johnson, WO9B

A New Trick for the QDX

[QRPLabs](#) QDX digital QRP transceiver has been around for 4 years now. It seems like yesterday, but in the fast-moving digital kit radio world, that is a lifetime. I've written about the QDX numerous times and have been consistently impressed with this little black box. Originally marketed as an FT8 QRP transceiver that pumps out 5 watts and services 4 bands—20/30/40/80—it literally flew off the shelves. I managed to snag a Rev 2 version with a buying strategy aggressive enough to make an eBay pirate smile. The best part is, it pretty much worked as expected. And it still does 4 years later. As these things go, the QDX has been superseded by an even more capable model, the [QMX](#). This new shiny bauble offers not just FT8, but CW, and maybe someday soon, SSB, in a package just a tad bigger than the old QDX. Life out of the spotlight means less attention from the Devs (last firmware update Ver 10 dated July 23) and scant few posts on the user-fueled [GroupsIO forum](#). But every once in a while, something new pops up. The QDX has a little magic left after all.

QRPLabs creates products that are a hacker's delight. Their products don't just deliver ham radio functionality; they actively engage with their fan base to encourage all manner of hacking and pushing the envelope. The QDX, while certainly backseated to the QMX, remains in many respects backwards compatible regarding the digital modes. Since they basically operate in the same fashion, they share a common bag of tricks. The digital mode operation is limited to generating only a single tone at a time. This facilitates a number of digital modes within the capability envelope of these units, and the QRPLabs user community is more than happy to explore all the possibilities: RTTY, Olivia, FTx, JTx, and more.

There are two modes that were not on the list: CW and VARA. CW, alas, is a trick reserved for the QMX as it requires wave shaping circuitry and filters that the QDX lacks. VARA, however, has been hinted at for some time now. [KJ7RBS](#) started to report some success with VARA on the QDX in Mar 2024. By modifying the configuration setting for generating the digital signals and limiting the signal sampling, VARA transmission proved workable. The transmission speed (bandwidth) is at the lower tiers, but it worked. The importance of VARA is that now the QDX is WinLink capable. That caught my attention. I had to try it out for myself.

Modifying the configuration settings is simple. A [PUTTYserial](#) connection brings up the configuration screen where the Rise, Fall, and Minimum Samples settings are reset. After a reboot, you are off and running. With only 2 watts of output on 40 meters, I successfully sent and received an email via WinLink HF Node KD7UHR located near St. Louis. I rate that a WOW!!

Swap Corner

FOR SALE

Yaesu FT 817Nd radio, LDG Z100 Autotuner (160-6 meters) in genuine Pelican case. Radio has WLB Lithium Polymer battery. Original manual. Rig hasn't been used much as the mode I bought it for was not enjoyable to me. \$500.

**Brad Smith KC9UQR
corlissbs@aol.com**



From the Editor

Another month has sped by. I have two new experiments going on as time and weather permits. One is how adding a so called Faraday blanket to my portable travel vertical will effect it.. At this time I have no news. It's too cold to set up outside and do some experimenting. Will try to get some time if it warms up a little. I have some hope for this since one of the contacts I got up at my daughters house was when my single radial was over the top of a metal fence she had. More news to come.

My other project was installing an Allstar Node in my house. With help from Mike WO9B it went in without a lot of gnashing of teeth. Looks like it could be interesting and another way to talk to Hams all over world. More to come as time permits.

Not that much else going on here. Like all of you getting ready for the Holidays is usually fun and a lot of work!!.

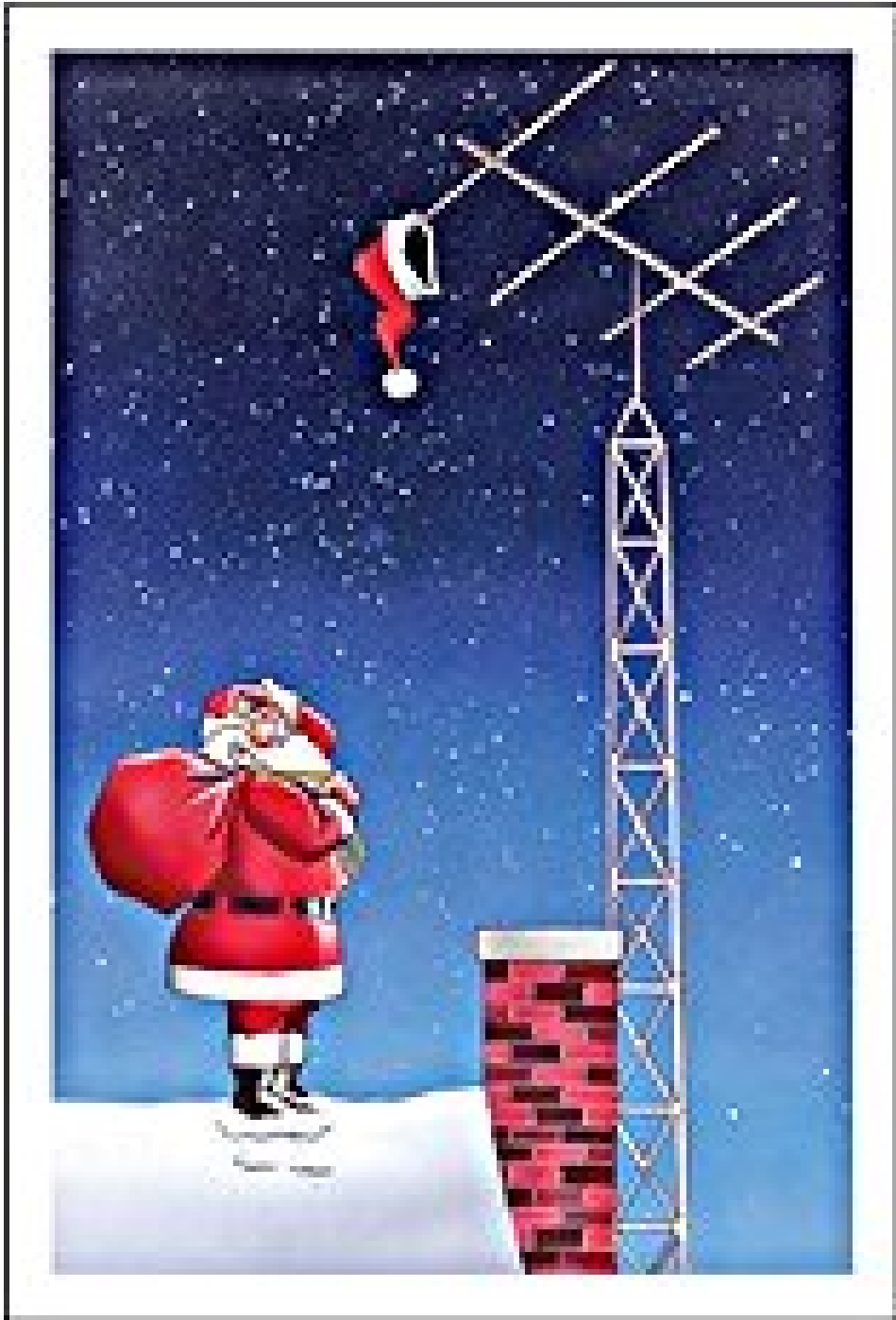
Happy Holidays
Frank Hamtrix editor

ELMER

by Rich Regent, K9GDF



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





The Winter Field Association Presents

Winter Field Day 2025

January 25th - 26th

Starts 1600 UTC Saturday January 25th

Ends 21:59 UTC Sunday January 26th

More Info

<https://winterfieldday.org/downloads/2025-rules.pdf>



Lightning

Tom Langer, KD9FPC



We are beginning a look at space. It is an amazing place and provides all with a wonderment as to God's creation. I remember as a younger guy walking out in the sticks just marveling at the night time sky. The billions of stars. The planets, many of which can be seen with the naked eye. In fact, I painted the solar system on my bedroom wall in junior high. Boy that made my parents mad! Try to paint over that!

So, why write an article on lightning? One, it is an issue that all of us deal with in our ham radio hobby. Two, it is a subject that until I learned about it and researched it I didn't truly understand. Three because even today there are things about lightning that the experts really don't understand. Lastly, because I don't have thousands to replace my shack stuff. To say nothing of the pipes and electrical in the house.

Lightning is as old as our world. The Romans called it by Zeus. It even appears dozens of times in the Bible both BC and AD... He loads the clouds with moisture; he scatters his lightning through them. Job 37:11 And, many of the things we use today are the result of understanding how to create what is essentially an arc. Take copiers and laser printers that work by creating an arc between ink and a piece of paper. That's why you may notice the smell of ozone when using this equipment.

In fact, it is time for an activity. Please shuffle your feet across the floor to a door and grab hold of the handle. Go ahead, I'll wait. Besides you know we all need movement to stay healthy. Assuming the air is fairly dry you will feel a static discharge in your hand. You have created an arc. You have created a mini arc of lightning! Or, as its science name, it's called triboelectricity. From the physics classroom... "triboelectric charging, also known as charging by friction or rubbing."

In ham radio we talk about static strikes. The same way your feet created a mini arc, think of your antenna. Let's say we have a wind storm. The wind passing over the antenna may likely cause an arc in your antenna as well. This is especially true in drier areas. It's also why you ground the antenna. The antenna is positive and the ground is negative (earth). As a result most of the static discharge will simply run to your ground. And, if you have a sudden charge from lightning or static charge your fuse (lightning arrestor) will blow sending the charge to ground and hopefully not to your rig.

On to the lightning itself. So that I avoid turning this into a science treatise I'll start with bullet points:

- A bolt of lightning on average is 300 million volts. They can run over 1,000 million volts in the Super Bolts.

- The typical lightning temperature is 50,000 degrees Fahrenheit and can be higher. Overall about 5X hotter than our sun.

There are various types of lightning including intra cloud, cloud to cloud, inter cloud, sheet, cloud to air, cloud to ground, spider. There is also lightning that can only be seen from above the clouds. It is called a sprite, blue jets and gigantic jets.

The rarest color of lightning is pink.

Florida has the most lightning of any state.

If the lightning strikes sand it turns the sand to pure glass. These fragments are called fulgurites. You are able to buy fulgurites online, at crystal shops and more. They do make a great talking piece. And they are relatively cheap.

So far in 2024 11 people have died being struck by lightning. Most in Florida.

In the U.S. there are 25 million lightning flashes in an average year.

As lightning travels it heats the air immediately around it (the channel) causing rapidly expanding air that results in noise known as thunder.

When discussing tribo it is important to understand that whether it's a static charge on the door knob or lightning, it is from the interchange of electrons (charge) and ions which can be positive (cations) or negative (anions).

So, we have some understanding at this point that electricity generation is our cause of lightning. The heat and movement of air the cause of thunder. To go deeper into this area you'll want to take a good physics class. But, we are able to look at the creation of lightning, which really starts on the earth. As a general aviation pilot I had to learn much about this since one did not want to find themselves any closer than 20 miles from a thunderstorm. So here's the process:

The sun heats the ground. Pockets of the warm air rise.

At a level in the atmosphere these pockets gather and we see cumulus clouds being formed.

As the day warms more heat (and moisture if it is humid) will keep pushing up to create towering cumulus. Strong "convection" by warm air and moisture can push the towers to 60,000 feet and more. At the towering stage you also begin to see an anvil formation on top.

As the cloud has grown ice crystals, hail and melting are happening. Air movement in the middle of the cloud causes all of these to collide. The collisions are at such a speed and temperature point as to cause intense friction. Within the cloud we have 3 levels. Lighter crystals of ice go to the top, the heavier hail falls to the lower level with a mix in the middle.

To this point the air has acted as an insulator between the positive and negative charges. But at some point the charges collide and from that you have a very strong, violent and rapid electrical discharge... lightning. Electricity looking for a ground. Splitting and channeling the air then creates thunder.

So that is the basics of lightning. At this point I must stress the safety aspects to keep all of us hams safe!

You can be electrocuted by lightning. I will share one ham's experience. He lived in the country. He had a wonderful antenna. No, it did not get struck. But, his mailbox out by the road did get hit. As it was raining the lawn was wet. The energy from the lightning spread out

across the wet grass and found his antenna base pole and traveled up the antenna destroying that. It also shot down the coax and entered into the house where the charge was still so strong that it melted nearby water and sewer pipes. He had disconnected the coax from the radio. But the charge hit the coax end and started a fire on his operating station.

Having once coached many levels of soccer (futbal for my EU/UK friends) I was aware that lightning can strike a soccer goal, then spider out across the ground and has been responsible for killing and injuring players. Sure that's true in every outdoor sport. We had to have an operating lightning detector at every game and practice. And, I learned a rule of thumb. When you see lightning, start counting seconds in your head. Stop when you hear the thunder. Divide that by 5 and that's how many miles you are from the storm.

Back when I taught this kind of stuff to other coaches and people sooner or later someone would ask whether they were safe in their car. The answer is yes. And it's not the rubber tires. A car by its design to create an interior actually works as a Faraday Cage. The outside will be charged electrically and no doubt electrical and paint may have an issue, but folks inside will remain safe as the charge heads to ground.

And there's a sinister side of lightning. If you are also a fisherman take note that lightning does like fishing poles. Especially in the middle of the pond. And even more if it's one of the fancy new carbon fibre rods since the rod is a super conductor. Lastly, if there is a ground strike or strike on something on ground, lightning will easily travel along electrical, plumbing or water lines. That's why they tell you not to shower or go to the toilet during lightning. Could be our last midnight run to the bathroom! Good news. Glass is not a good conductor so it won't come through windows, just break the glass and burn your house down.

Well, on that cheery thought I will end now. In our next article we'll be looking further out towards space. Hoping you find all of this a fascinating and amazing as I do... just head out tonight, see if it's clear and take a look around. If you have them, take your binoculars.

P.S. – If you have an idea or question about this series, please let me know. Frank will pass it along and I'll do my best to address it as soon as possible.

Sources: NOAA, NWS, various physics and aviation texts, physicsclassroom and more.





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:

Mike Johnson WO9B

Vice-President

Pierre Porter KD9SSY

Treasure:

Bill Reed N9KPH

Secretary:

Bill Dargis KD9BJZ

Committee member(2)

Jeff Pahl W9JSP

Tom Macon K9BTQ

Past President:

Feroz Ghouse WU9N

Newsletter Editor

Frank Humpal, KA9FZR

fhump@milwpc.com

West Allis Radio Amateur Club
P. O. box 511381
New Berlin, WI 53151-1381

**West Allis Radio Club
PO Box 511381
New Berlin, WI 53151-1381**