

for the ARRL Board Meeting
July 18 and 19, 2025

Submitted by Ned Stearns AA7A (Board Liaison) and
Carl Luetzelschwab K9LA (Chair, ARRL EMC Committee)



Meetings during 2025

April 3, 2025 – The minutes from this meeting (Rev B) are [Appendix A](#). Read [Appendix A](#) first, then read the major updates below for happenings in April, May and June.

Major updates to the April 3 minutes

Interference from Comcast (Xfinity)/REMC box

Comcast resolved this issue. Thanks to W1EMI and N0IVN for their help.

222-225 MHz experimental license in the Los Angeles area (6 July 2025 update from K3ZJ)

In June, K3ZJ learned that Caos was still operating and causing interference in the LA area. He discussed this with FCC staff and separately with representatives of Caos. At this point, K3ZJ reminded Caos that their licenses are explicitly conditioned on ceasing operation unless or until interference to amateur licensees are resolved. He confirmed that Caos had direct contact information for the lead amateur licensee for the repeater(s) suffering interference, and informed Caos that while only the FCC can decide whether to issue future licenses or cancel existing licenses, the failure of Caos to shut down and resolve the interference situation seriously undercut any confidence that Caos would comply with the same conditions on future licenses for which they had applied. Caos personnel said that they also had talked with the FCC and promised to immediately address the interference issues. They also said that they were working with government officials to move all their operations outside the Amateur 222-225 MHz band.

As of July 3, this Caos case remains open, awaiting future developments.

WPT-EV at Purdue University

The Purdue/INDOT latest schedule indicates they will now be done with the installation of their WPT-EV system sometime in August.

Due to the schedules of ARRL personnel, those who could be at the testing include two to three of the following: W9XA, K9LA, W1RFI, W1GKS, KB1PIU.

The 3rd DRAFT of the test plan is underway. We may be asked to sign a Non-Disclosure Agreement with Purdue/INDOT – if so, W1GKS will handle this with HQ.

HF Trading RM11953

Minimal activity occurred from April through June. The FCC has not yet acted on this petition from the Shortwave Modernization Coalition.

It has been tough lining up volunteers to monitor a bunch of frequencies for a burst transmission. The best chance is believed to be with a monitor extremely close to an HF Trading site. With a strong signal, an SDR could monitor the entire 2-25 MHz spectrum (although the lower frequency is more likely to be around 6 MHz). Using the frequencies specified in the Experimental License, a program could be written to scan the appropriate frequencies, which may help in getting a narrow-bandwidth screen shot of one of these stations.

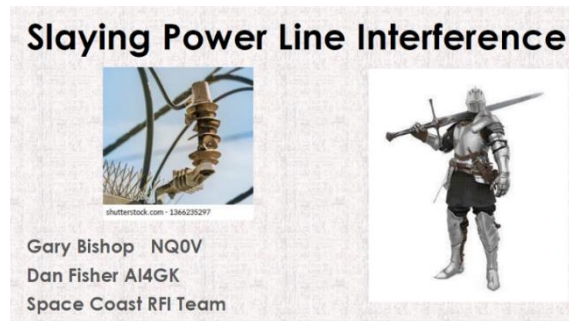
The Volunteer Monitors are keeping an eye out, too, but with no definite results to date.

RFI Teams

There has been some chatter about forming more RFI Teams, but nothing is definite yet.

Dayton RFI Forum

Gary NQ0V and Dan AI4GK held an RFI presentation at Dayton titled “Slaying Power Line Interference”.



The thrust of the presentation was a combination of:

1. You can do this; you don't need a bunch of expensive equipment (although it's nice to have)
2. There are resources to help you, such as the RFI Teams in the New England Division, the Space Coast RFI team along with some of the other groups that they know of.

AI4GK plans to try to download the audio of this presentation and make it available.

Goals for 2025

There are four major issues that the EMC Committee needs to address in the remainder of 2025:

- 1) HF Trading – Try to take data at selected stations, get a screenshot of station near a band edge and continue working with the Volunteer Monitors.
- 2) WPT-EV – Continue planning for the Purdue University testing this summer. Attempt to acquire test data from Detroit testing. Also check on alleged Utah and Texas testing.
- 3) RFI Teams – Continue plans to implement more RFI Teams.
- 4) Standards – Continue work as necessary to address standards.

Appendix A

Minutes of the April 3, 2025 ARRL EMC Committee Meeting – Rev B Carl Luetzelschwab K9LA

Venue

Via Zoom at 8:30 PM EDT

Attendees

AA7A, W1EMI, K3ZJ, N0IVN, WA6MEM, K3EW, W9RFI, KZ1X, N9GL, AI4GK, K9LA

EMC-C report to the January 2025 Board Meeting

Visit www.arrl.org. In Website Search in the top right corner, type in ‘committee reports’ and click on GO. Expand Committee Reports and go to January 2025 Ad Hoc Committees.

Tesla waiver request

Tesla requested a waiver of FCC rules to allow authorization for an ultra-wideband positioning system operating in the 7.5-8.5 GHz frequency range to facilitate wireless charging of electric vehicles. Only four comments received, and they all had no problem with this. The ARRL did not comment as the ARRL does not comment on frequencies that aren’t Amateur Radio bands.

222-225 MHz interference in the Los Angeles area

Gary WA6MEM reported on the Part 5 Experimental License by Caos Capital, LLC to determine if radar could detect drones. Much effort was expended by Los Angeles area Amateurs to eventually track down this interference. The FCC Enforcement Bureau from the Cerritos Office shut down their system as Amateurs are Primary in 222-225 MHz and the radar was interfering with Amateur operations.

K3ZJ suggested that in the future amateurs experiencing in-band interference that may originate from an experimental licensee contact the ARRL Regulatory Affairs Manager (currently Bart W9JJ). K3ZJ has discussed with Bart how to use the FCC database to efficiently determine if any experimental licensee(s) are within range of the amateur station experiencing interference, and if so, how to contact the person responsible for the transmissions. K3ZJ emphasized that Experimental licensees are a normal, permissible use but that they are prohibited from interfering with amateur operations on any band -- even on bands where we have only secondary status.

222-225 MHz experimental license in the Yuma, AZ area

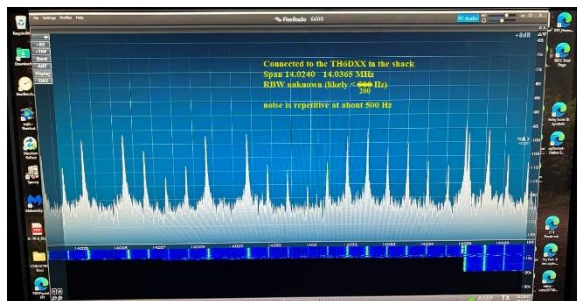
When K3ZJ became aware of the situation, Caos Capital had four additional applications pending at the FCC for experimental licenses. The purpose was to demonstrate their radar to federal military officials on various federal bases, including in Yuma. He reported that he held discussions with Caos Capital to warn them of the interference potential and to suggest resources

to find and coordinate with fixed amateur operations that may be within range. He also determined that their purpose legitimately related to an important national defense need and that they had no intention of using 222-225 MHz other than for short-term tests. Any follow-on more permanent operations would be confined to government spectrum.

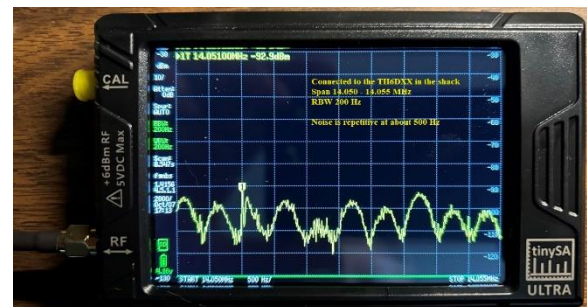
The discussions concluded with Caos agreeing to withdraw two of their four applications and limiting the remaining two to one week or less each for intermittent demonstrations. They also agreed to review on-line repeater information and any other resource available so as to avoid potential interference with amateur stations in the future. They also understand that there are multiple other amateur stations authorized to operate within any area that are not repeaters and not listed, but which must be protected. Since the time of these discussions, Caos has received at least one additional experimental license for the military spectrum above 225 MHz.

Interference from Comcast (Xfinity)/REMC box

There is a Comcast (Xfinity)/REMC box near the QTH of KR9U (Ft Wayne), and screen shots from a FLEX 6600 and a TinySA Ultra shows spikes every 512 Hz or so in the 20-meter band (and other bands, too). The following images are on 20-meters.



FLEX 6600



TinySA Ultra

Ron N0IVN reported on what is likely in the box, and why it could be the cause. KR9U is in contact with Comcast and the local REMC, and is awaiting further response and action. AA9H (Ft Wayne) and Steve W1EMI at HQ have aided to resolve this problem, and Steve will get even more involved as necessary.

Solar Farm in Indiana

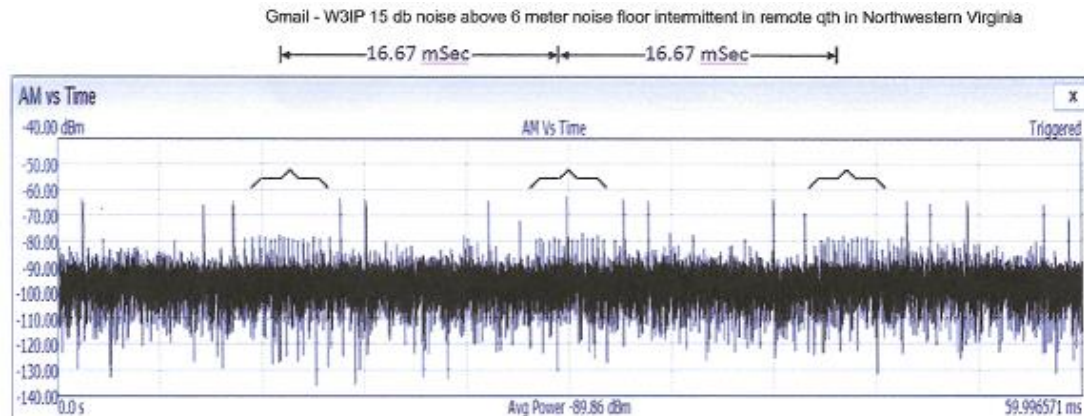
A big (1200 acre) solar farm is being installed about one mile from K9WX's QTH. Steve W1EMI commented that his experience with solar farms is limited, but no major problems have surfaced. He also reported that the ARRL investigated a solar farm in CT with no issues. I will encourage K9WX to do 'before' and 'after' screen shots using his FLEX 6600.

Ed W1RFI says he has visited about a dozen solar farms and found none that created loud noise on HF to a mobile antenna about 10 meters away from the site. Slight noise was observed when he was immediately next to the large electronics located within the perimeter of the fence. With the lack of interference reports and preliminary findings, the current spate of solar farms does not

appear to pose a significant interference risk. That could change with future designs, so ARRL will continue to watch the development of these systems.

W3IP noise on 6-meters

Mike W3IP is seeing noise from 10 to 25 dB above his 6-meter noise floor.



His power company is Dominion Virginia, and there are two other power companies in the area: Rappahannock Electric Cooperative and Northern Virginia Electric Cooperative. The problem company appears to be Rappahannock Electric Cooperative. Steve W1EMI is helping with this one.

WPT-EV at Purdue University

Their coils-in-the-highway system is expected to be ready for testing in late May. To reiterate, this is a proof-of-concept endeavor. I wrote a brief test plan, and I need to talk to George W1GKS about the logistics of this – will Ed W1RFI be coming, or will Kermit and I (and perhaps one or two other persons) have to get Kermit’s antenna calibrated and acquire a good spectrum analyzer that can record data?

Phil K3EW reported that the car manufacturer Kia asked if he would like a charging system on a floor mat for his home. I encourage Phil to work with Kia to somehow acquire one temporarily for testing.

Greg N9GL reported that the FCC limits for RF Safety are in U.S. FCC, 47 CFR 1.1310, “Radiofrequency radiation exposure limits.” But this document only goes down to 300 kHz. Remember the Purdue system is at 85 kHz. IEEE C95.1-1-2019 goes down to dc, which is more appropriate for the Purdue system. This IEEE standard includes not only heating, but electrostimulation as well.

WPT-EV in general

I participate in the IARU Region 1 EMC meetings, and it was reported that the UK, Norway and US IARU societies voted NO to CIS/H/507/CDV (Limits for the Protection of Radio Services)

as the limits aren't believed to be strict enough. This standard defines limits, test methods and calibration requirements for the measurement of magnetic field strength from mainly WPT equipment in the frequency range below 30 MHz, which is to be implemented into the Generic emission standard IEC 61000-6-3.

All the other IARU societies voted YES. Some of the IARU Region 1 people believe that the YES votes happened because those who voted YES believed that anything is better than nothing. There is also concern that automobile manufactures may generate their own limits to help their designs.

Jerry KI6LGY reports that ANSC-C63 is opening up their C63.31 WPT Standard for revision soon. They are starting to draft the PINS next. He suggests that Steve W1EMI should sit on this committee.

HF Trading

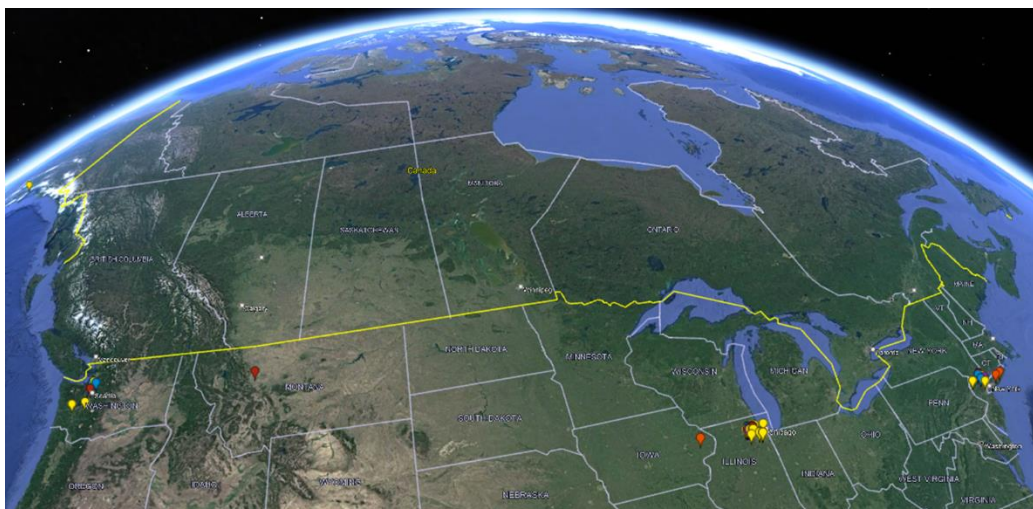
I think we all agree that we need to do some long-duration monitoring of these stations. N9RD in northwest Indiana is about 7.5 miles northwest of the Wanatah (IN) HF Trading station (see image on right), but the antennas on his tower were damaged a couple weeks ago when a line of big thunderstorms went through.

I'll see if I can round up some people to monitor some of the stations in the Chicago area. I'd appreciate if any of you could round up some people to monitor the New England HF Trading stations.

The image on the next page shows general locations of HF Trading stations. For some reason, this image missed the IN station.



HF Trading system at Wanatah, IN



RFI teams

I encourage you to visit <https://nediv.arrl.org/new-england-division-rfi-teams-by-arrrl-section/> for information about the RFI Teams in the seven sections in the New England Division. The lead person for each section is given, along with other contacts. Note that the CT section has two RFI Teams – this is a good way to address large sections.

At the bottom of that page are two links. The first link, *Team Training Information*, gives details on the training for the RFI Teams, links to many videos on tracking down RFI and a nice 17-page document titled RFI Team Tool-kit Operation.

The second link, *Team RFI Toolkits and Division RFI Toolkit*, lists the tools that each RFI Team uses to track down RFI. Also included are lists of RFI tools that can be borrowed from the ARRL Lab and from the New England Division to help you track down your noise.

This part of the New England Division website is a great plan to use for RFI Teams in the other fourteen Divisions. Rob K1UI reports that the challenge of establishing and equipping RFI teams is three-fold:

- 1) Recruiting those willing to participate
- 2) Obtaining the equipment for the teams
- 3) Building a reference library of RFI cases

More on expanding the RFI Teams to the other Divisions in subsequent EMC-C meetings.

Standards

In addition to Jerry KI6LGY reporting that ANSC-C63 is opening up their C63.31 WPT Standard for revision soon, Ghery N6TPT reports the following:

- a) C63.4 is being discussed by the committee working on updating it
- b) CISPR 32 (3rd Edition) is still being worked on, with an update likely in 2026

- c) CISPR 35 (2nd Edition) is also still being worked on, with a likely 2026 update
- d) CISPR SC I and CISPR have their plenary meetings in September 2025 in New Delhi

Illegal transmitters

Hopefully, when the new administration 'settles down', the FCC will address this major issue. Ed W1RFI put together a very detailed document on this issue titled *Analysis of the Marketing and Technical Performance of Baofeng and Other Imported VHF and UHF Transceivers* dated 18 Jan 2023. I composed a 2-page synopsis for the FCC on 25 May 2023.