

B-PLUS

Albany Amateur Radio Association – AARA

September 2024

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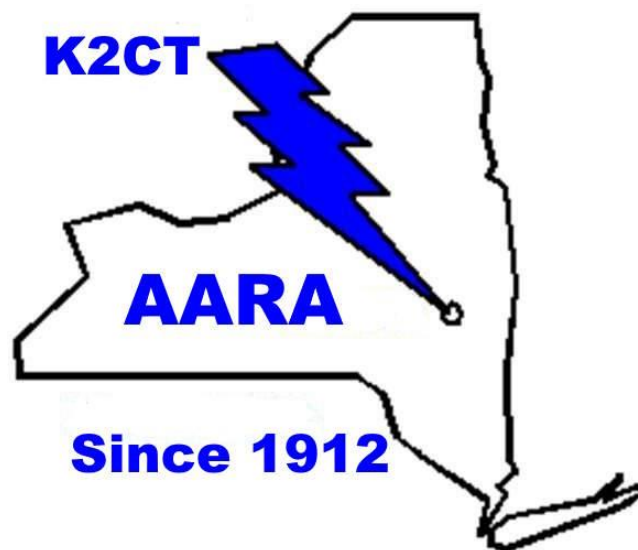
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**AARA Next Meeting:
October 2nd, 2024 @ 7:30 PM
Slingerlands Fire Dept.**

**Topic:
To Be Announced**

**PLEASE Pay Your Dues
Dues are \$20
Checks can be sent to:**

**Saul Abrams, K2XA
307 Maple Rd.
Slingerlands, NY 12159**

Fred's Sandbox

2024 Field day Recap!

I really enjoyed Field Day this year. Well, maybe not the rain, but the friendship, food, antennas, and operating was fantastic! Thank you to all of you who helped make it happen. Here's a summary of what we did right. First, the raw score for our 4A transmitters, ignoring GOTA and VHF;

Band	CW QSOs	FT8 QSOs	SSB QSOs	QSO pts	% of Total
80	69	16	47	217	9.2%
40	308	201	245	1263	53.4%
20	97	140	56	530	22.4%
15	28	69	76	270	11.4%
10	1	15	2	34	1.4%
Total	503	441	455		
QSO pts	1006	882	455	2343	
% of Tot	42.6%	38.2%	19.2%		

It is immediately obvious that our CW score was awesome. 100% of that score was due to W2EG's operating skills along with the EFHW antenna that Rich used on every single contact! The key to the antenna's performance was the high efficiency 49:1 transformer that Rich bought, the Guanella BALUN that I built, the exact length of wire necessary to resonant on all 5 bands, and the extra loading coil used to move the SWR dip to the perfect frequency on the higher bands. I used that same antenna for 16 FT8 QSOs on 80 meters. The antenna did so well, that I expect that we should use it at Winter Field day in the highest antenna location possible.

The next accomplishment was an incredible score using the FT8 mode. Notice that on 20 meters the FT8 QSO points were 280 compared to 250 points for CW and SSB combined! Here's where our operators did an amazing thing, we were on 20

meter CW, FT8, and SSB simultaneously! CW used the EFHW antenna, FT8 and SSB shared the stacked tribanders and the Spider Beam. I am not aware that there was any inter-station interference between these 3 stations on the same band at the same time. There were a number of factors that allowed for this. Those include; greatest possible distance between antennas, avoidance of aiming antennas at each other, transmitters with extremely low phase noise transmitters, receivers with excellent 3rd order dynamic range, and operators who know how to bypass all preamps, (AKA enable IPO) plus the smart use of receive attenuators. Today's high-end transceivers easily outperform older model equipment in this environment.

Here is a table that compares the equipment that we used; data is from Sherwood's test table.

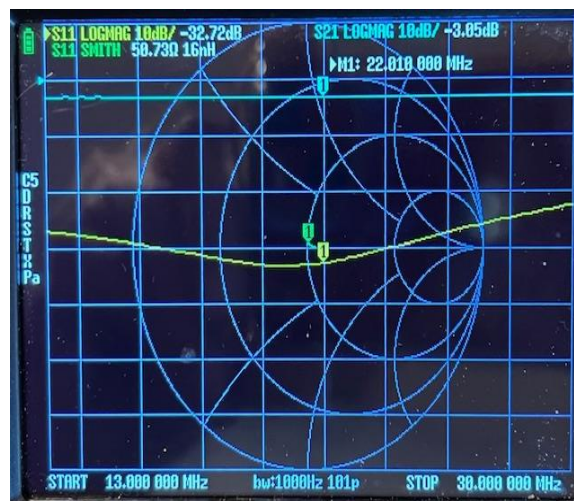
Radio	TX noise @ 10 Khz	RX dynamic range @ 20 KHz
K3S	-144 dB	107 dB
FTDX10	-152 dB	107 dB
IC-7600	-126 dB	100 dB
TS-570S	-143 dB	95 dB
FT-450	-120 dB	97 dB (Used at Winter FD)
FT-101E	NA	60 dB (legacy comparison)

You may conclude from this table that excellent receiver performance makes a huge difference. Another band that was active on three modes simultaneously was 40 meters. As usual, 40 was our most productive band. CW had an incredible 308 QSOs on 40 using the EFHW. FT8 was connected to the 2 element beam for many hours. When I finally got to use the beam on SSB, my QSO rate skyrocketed. I am thinking about a third 40 meter antenna with some gain. The trick will be where to put it to maximize isolation to the existing beam. Options are a Moxon, a phased inverted V array; or colinear dipoles. As I think about a plan for multiple 40 meter antennas, one of my ideas is to also configure the antenna to be useful for Winter Field day. Note that the Winter Field day rules, while allowing for digital contacts, do not allow the FT8 mode. Hence, I am not that concerned with CW and FT8 simultaneously in January.

The stacked tribanders worked very well on 20 meters. The SWR was high on 15,

but worked fine with the antenna tuner in my FTDX10. I'll need to test the antennas to see what might have happened to the match. 15 meter SSB had wall to wall QRM from Europeans working the King of Spain contest. The activity on 10 was almost non-existent. Next year I'm considering the possibility of getting the top tribander about 5' higher than it was this time.

Part of that stack was a broadband matching transformer. The commercial version is called a StackMatch. The core is a T240-43 rated for 1.5 KW. I wound a 1.5:1 transmission line transformer as specified, but note that a 1.5:1 transformer is actually an impedance transformer of 2.25:1 or an SWR of 1.125:1. The SWR turned out higher than that on 10 meters. When I added 120 pf of compensating capacitors, it improved the 10 meter match and tuned 15 meters nicely. (1.05:1) If I had to build it again I would try 3 turns instead of 4. Notice that the VNA trace in blue shows a loss of 3.05 db because the second antenna port was terminated in a 50 ohm resistor, so the expected loss would have been 3.01 dB; a net loss of only .04 dB. The yellow trace is return loss (the lower the better) and can be easily converted to SWR.



Our combination of several multiband antennas worked out well for the 4A transmitters as well as the GOTA station. I'd hope for something similar next year!

Online Voting For The 2024 Hudson Division Election

In a few days, email messages will be sent to members indicating that the online voting site for the 2024 ARRL Hudson Division Election is now open. The message will include instructions to access candidate statements, the electronic ballot, and to vote online.

A third party was selected by the ARRL Ethics and Elections Committee to conduct the election: **Election Services Co. (ESC)** of Melville, New York. This is the same company that conducted ARRL elections in 2023 and 2022. Some background about the effort to modernize Division elections, including transitioning members to use electronic ballots, can be found in the October 2024 issue of *QST* magazine, page 69, in the article "Upcoming Elections and How to Vote."

Please watch your email for the message from **Election Services Co.**

The email message will include the following header:

From: **ARRLElection@mg.ElectionServicesCorp.com**

Be sure to check your Inbox, and folders for spam and junk, to make sure you do not miss this message.

Tip: if the link included in your message from Election Services Co. does not work, try copying the web address into your web browser to load the page.

Should you need any assistance with voting, please contact the helpdesk for Election Services Co.:

Telephone 866-720-4357

email ARRLElection@ElectionServicesCorp.com

Online voting ends at noon (ET), November 15, 2024.

You will also be receiving a post card with the same information for voting online, and instructions for requesting a paper ballot if you would prefer to vote by mail. Please note that only one vote per member will be counted.

73

David A. Minster, NA2AA

Secretary

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The New York QSO Party

Begins on October 19th, 2024 @ 1400Z

Details are at: <https://nyqp.org/wordpress/>

Tentative:

Winter 2024 SKYWARN Training

7:00 PM November 6

Slingerlands Fire House

Swap Shop

Have radio gear you want to buy, sell, trade, or give away?

Please send your item descriptions to wa3afs@arrl.net or dgherring@hotmail.com

Important Links:

Find a license class in your area: www.arrl.org/class

Find a license exam in your area: www.arrl.org/exam

The Eastern Iowa DX Bulletin:

<http://www.eidxa.org/EIDXBulletin.html>