



AK-SAR-BEN Amateur Radio Club, Inc.

Ham Hum

March 11, 2022 Volume LXX, Issue 03

March 11th Meeting

7:00 pm Red Cross Building 2912 S 80th St

Program Topic:

Using Chirp to Program Your Radio

Presented by KEØOPB

Secretary's Report for the Ham Hum 02-14-2022

The February 2022 membership meeting was held in person and via Zoom on Friday, February 11. There were twenty seven members in person and seven on Zoom.

The meeting was called to order at 19:00. It was noted that our club president is out of the country on ham radio business and the meeting would be run by John ABØZT in his absence.

Secretary's Report - Terry KEØOPB

The club is using the ARRL Zoom account for our meeting tonight as a test.

Vice-President's Report - John ABØZT

1. Bill KEØXQ's wife is ill and a condolence card will be sent.

Shirts, hats, patches and stickers are available for purchase. See John if you would like to purchase these items.

Treasurer's Report by Dave NØJSB

The club has combined funds of \$24,310.53.

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Committee Reports:

Flea-Esta

At this time we do not have a chair for the event, if you are interested please contact a board member. It was noted that the published fee for the Springfield Fairgrounds has increased, but they might discount for non-profits and regular renters. John ABØZT will contact them about the cost of renting. The Bellevue Amateur Radio Club's *Spring Clean-Up Hamfest* is scheduled for Saturday, April 9, at the Reed Community Center at 1200 Lord Boulevard in Bellevue. Additional information can be found on the club website.

Membership - Mary NØTRK

The club has three new membership applications:

Terry Duncan NØDQO, General class

Jake Spanjer KEØEID, Technician class

Jack Manzer KFØHBQ, Technician class

A motion to accept these applicants as new members was made by Norm WAØJWD and seconded by John WBØCMC and was unanimously approved.

A.R.E.S. - Jim WØJRN

He is currently in contact with sixty volunteers and is establishing roles.

Greg KCØVTO is the Douglas County emergency coordinator.

Volunteers should keep up their SkyWarn and Spotter training certification, which is available from the National Weather Service (online only at this time).

Special Events Coordinator - Pat KØCTU

The Nebraska State Track Meet will be held over four days this year, May 18 through May 21. Our assistance will be needed mostly in the morning and early afternoons. Pat has contacted previous volunteers and others who have expressed interest in the past, so contact him if you are a new volunteer.

The 2022 Corporate Cup Run will be held on Sunday, April 10. Pat will contact previous volunteers, and contact him if you are interested as a new volunteer.

Repeater - John WBØCMC

The DStar antenna, located on top of the penthouse of the First National Bank Building, had blown over and was laying on the roof. He ordered a new one from DX Engineering and after some delivery issues had a new antenna sent to him. John and his neighbor installed the new antenna and he reported it is in perfect working order. John noted that our DStar repeater is connected to the Nebraska network, which consists of six repeaters (Omaha, Columbus, Grand Island, Kearney, Wood River, and Lincoln).

SATERN - Mary NØTRK

The next SATERN meeting will be held on Saturday, February 12, at 09:00 at the Salvation Army headquarters building at 10629 Burt Circle. All are invited to attend. The weekly SATERN *Stay Connected Net* has resumed on Monday nights at 19:00 on the KØUSA repeater. Please check in, you do not need to be a SATERN member to participate in the net.

Club Swag - John ABØZT

John noted that he is the contact person for shirts (red or gray, embroidered with our logo and your call sign), hats (red or gray, embroidered with our logo and your call sign), patches, and decals. New members get a free decal and a patch. All items are sold at cost.

Old Business

Hamfest 2021: The Board voted to return the \$273 sent to use from the Bellevue Club as our club only had two volunteers, and their club did all the work.

June 2022 Field Day: The club needs a Field Day Coordinator. No one volunteered at the meeting, so if you are interested please contact a board member.

Spring 2022 picnic: The picnic will be held on Sunday, May 15th at the Walnut Creek Reservoir from 10:00 - 14:00. We will be asking for volunteers for setup and takedown, and also for members to bring radios and make this into a “mini field day” event. Mark your calendar and stay tuned for updates. Members discussed having signage at the event and a talk-in channel for those that need directions.

Ralston Fourth of July Parade - John ABØZT

John discussed the parade event, and has invited the Bellevue club to participate, and at their last meeting they voted to support this event.

Pat WØOJU has volunteered his truck and trailer for the parade route.

Setup starts at 10:00, participants need to be ready to go at 12:00, and the parade starts at 13:00. The route is one mile in length and the parade speed is a slow walking pace.

Ideas were discussed about using the club trailer, other trailers, antennas, and members walking using handie-talkies.

Discussion was held about club and ARRL banners. It was noted the club may have banners and Mary NØTRK will check on them.

The parade charges a \$50 participation fee. A motion was made by Mary NØTRK to pursue participating in the parade, and was seconded by John WBØCMC. A friendly amendment was made to authorize the payment of the \$50 fee and the motion passed with one opposed.

New Business: None

Announcements:

1. SWIARC will be hosting a flea market at the McClelland, IA town hall on Saturday, March 5. Further details can be found on the ARRL hamfest site.

The Nebraska state ARRL convention will be held on Saturday, May 14, in Lincoln at the Lancaster Event Center. Information can be found on the ARRL website.

A motion to adjourn was made by Norm WAØJYD and was seconded by John KEØOPF, and was approved.

Nebraska State Convention

Scheduled for 14 May 2022 at the Lancaster Events Center in Lincoln

(More details to follow)

Presentation

John ABØZT demonstrated wire fishing using a small wall that he built and various fishing tools and techniques, and he also regaled the members with stories about his wire fishing experiences over the years.



John ABØZT doing his demo on using Fish Tape to run an antenna wire through a wall.



The finished job.

John also showed the tools needed to push through obstacles such as insulation as well as any Fire Blocks one might encounter.

AN EXPLANATION OF “2A MINUS B” INTERFERENCE

Paul Blain WB0GXD

Someone recently asked me about an intermodulation problem that had occurred from a local 2-meter net on 147.42 MHz that interfered with the operation of the local 146.82 MHz repeater. The interference would be present when some but not all operators on the simplex net. This person was trying to figure out what was causing this problem, and was not having any luck.

In order to help explain this we need to do some math. What appears to have caused this problem was a situation called “2A-B”, which occurs when the second harmonic from a transmitter mixes with the fundamental frequency of another transmitter. Let’s look at an example. In this case the 82 repeater output, 146.82, is frequency “A” The simplex operators on 147.42 is frequency “B”:

The formula is –

$$2A - B = C$$

$$A = 146.82; B = 147.42$$

So –

$$(146.82 \times 2) - 147.42 = C$$

$$293.64 - 147.42 = \underline{\underline{146.22 \text{ MHz}}}$$

And 146.22 is, of course, the input frequency of the 82 repeater.

So, any time that the 82 repeater was transmitting and simultaneously, select transmitters on the 147.42 simplex frequency would also be transmitting, a signal would land right on the 82 repeater input frequency. This signal will hold the repeater up until either the simplex frequency ceased or the repeater would time out.

Let’s look at another example. Again, we’ll use the 82 repeater as one frequency, but the other frequency will be 146.52 simplex.

The formula is –

$$2A - B = C$$

$$A = 146.52; B = 146.82$$

So –

$$(146.52 \times 2) - 146.82 = C$$

$$293.04 - 146.82 = \underline{146.22 \text{ MHz}}$$

And again, 146.22 is the input frequency of the 82 repeater.

Again, any time that the 82 repeater was transmitting and simultaneously select transmitters on 146.52 simplex would also be transmitting, a signal would land right on the 82 repeater input frequency and hold the repeater up until either the simplex frequency ceased or the repeater would time out.

Both transmitters would have to be running high power or be in close proximity to each other in order for the mixing to occur.

When this situation occurs, it frequently sounds like two stations “doubling”, or trying to talk at the same time, but not always.

I hope this explanation helps others to understand how some types of interference can occur, and how to look for the causes of this type of interference. de **Paul WBOGXD**

SATERN Meeting Invitation



The next SATERN meeting will be held on Saturday March 12th at 9:00 am at the SATERN Station within the Salvation Army's Emergency Disaster Service (EDS) building at 10629 Burt Circle in Omaha - The March activity will be a hands-on build of 2m antenna that is small enough to pack in your go kit to help reach net control or other stations

during a disaster deployment or community service event. Non SATERN members are welcome to attend and take part in this build, (materials provided) check out the SATERN Station and learn more about getting involved. Email n0trk@arrl.net for more details

Club Officers & Board Members

President	Pat Connell	WØOJU	president@aksarbenarc.org
Vice President	John E Fifer, Jr	ABØZT	vicepresident@aksarbenarc.org
Secretary	Terry Begley	KEØOPB	secretary@aksarbenarc.org
Treasurer	Dave Rice	NØJSB	treasurer@aksarbenarc.org
2021-2022 Director	Dave Rice	NØJSB	board@aksarbenarc.org
2021-2022 Director	Dan Buchholz	NØPOT	board@aksarbenarc.org
2022-2023 Director	Terry Begley	KEØOPB	board@aksarbenarc.org
2022-2023 Director	Ray Blackburn	NØREA	board@aksarbenarc.org

Club Committees

Courtesy Committee	Bill Snyder	KDØFJR	courtesy@aksarbenarc.org
Education	Ray Blackburn	NØREA	education@aksarbenarc.org
Field Day	Open		
Flea-Esta	Open		
Membership	Mary Joseph	NØTRK	membership@aksarbenarc.org
Monday Night .94 Net	Rich Swig	WAØZQG	wa0zqg@hotmail.com
Public Relations	Jim Westcott	KAØKCV	pr@aksarbenarc.org
Prizes	Open		prizes@aksarbenarc.org
Publications (Ham Hum)	Brian Pitchanau	WEØBEP	hamhum@aksarbenarc.org
QSL Manager & Technical	Ed Edwards	KØIL	qslmanager@aksarbenarc.org
Special Events Coordinator	Pat Joseph	KØCTU	community_service@aksarbenarc.org
Technical Assistance	Ed Edwards	KØIL	technical@aksarbenarc.org
Web Services	Mary Joseph	NØTRK	web_master@aksarbenarc.org

Repeater Committee

Chairman	John Gebuhr	WBØCMC	repeater@aksarbenarc.org
Vice Chairman	Steve Schmitz	NØUP	repeater@aksarbenarc.org
Control Operator	Mary Joseph	NØTRK	repeater@aksarbenarc.org
Club Call sign Trustee	Corby Krick	KØSKW	trustee@aksarbenarc.org
Member	Russ Hilton	ADØQH	repeater@aksarbenarc.org

Other Contacts

ARRL Midwest Director	Rod Blocksome	KØDAS	k0das@arrl.org
ARRL Midwest Vice-Dir.	Art Zygielbaum	KØAIZ	k0aiz@arrl.org
EC Douglas County	Greg Ervin	KCØVTO	
EC Sarpy County	Dennis Mitchell	KCØYKN	
Volunteer Council	Brian Zdan	KMØY	
NE Section Manager	Matt Anderson	KAØBOJ	ka0boj@arrl.org
VE Exams/ARRL Liaison	Ray Blackburn	NØREA	testing@aksarbenarc.org

AARC Ham Hum Post Office Box 24551, Omaha, NE 68124-0551

Astro Bob: Solar Cycle 25 is on a hot streak

As a follow-up to our January AARC program, Astro Bob is predicting good news for solar cycle 25.

Flares and sunspots have been more frequent than predicted in the current solar cycle, offering an optimistic outlook for auroras in the next few years. It wasn't Bob King's imagination. "Sunspot and solar flare activity have ticked up more quickly than anticipated in the past year. We know our star has its ups and downs. About every 11 years, sunspot numbers and solar storms peak, then fade and disappear before cresting again. Each cycle is numbered; the first, called Solar Cycle 1 commenced in February 1755 and ended in June 1766. We're now into Solar Cycle 25, which began in December 2019 and is predicted to reach maximum in July 2025.

On Jan. 11, 2022 four sunspot groups freckled the solar disk. The largest one, active region 2924, clearly showed north and south "poles" or polarities, with the leading spot negative and the follower positive. During the previous solar cycle, the poles in a similar group in the sun's southern hemisphere would have been reversed.

Back in the fall of 2020, the Solar Cycle 25 Prediction Panel, an international group of experts co-sponsored by NASA and NOAA, announced their prediction for the current solar activity cycle. Based on observed trends they predicted a fairly weak cycle similar to the previous one. But the sun has so far defied those projections. Instead, sunspot numbers, according to the [Spaceweather](https://www.spaceweather.com) website, have "exceeded predictions for 15 straight months."

Around solar minimum, the sun can be spotless for many weeks. But in a sign of good things to come, the year 2021 saw just 64 spotless days and nearly three times as many geomagnetic storms compared to 2020.

If the trend continues, Cycle 25 might be a barn burner or at least better than "weak." Powerful flares and coronal mass ejections have a good side and a bad side. Big storms can threaten poorly protected power grids and damage sensitive satellite electronics. On the flip side, they often lead to more frequent and intense northern and southern lights. Yeah, we'll take that.

As the sun rotates, the sunspots go along for the ride and take about four weeks to make a complete spin. Most groups are gone by the next rotation, but some can last up to about 100 days. Their appearance changes constantly as they grapple with the turbulent and super-hot solar surface which sizzles at around 10,000° F (5,500° C). Sunspots are several thousand degrees cooler than their surroundings, which makes them look dark in comparison. In truth, they would shine brilliantly if we could see them separate from the sun."

For the full article with great pictures and graphs, go to duluthnewtribune.com/astrobob .

Submitted by Pat Connell W00JU

Area Nets

Monday

7:00 PM 145.290 South-West Iowa ARES Glenwood, IA.

7:00 PM 146.940 Western Division HQ SATERN Net Omaha, NE.

8:00 PM 144.250 NE Missouri SWOT.

9:00 PM 146.940 AARC Chat Net. Ak-Sar-Ben ARC Omaha, NE.

Tuesday

9:00 PM 145.310 Washington Co. ARES Washington Co, NE.

Wednesday

7:00 PM 146.670 Dodge Co. ARES Dodge Co, NE.

7:30 PM 7.122 CW Four State QRP Comfortable Net.

8:00 PM 3.564 CW Four State QRP Comfortable Net.

8:00 PM 145.310 Saunders Co. ARES Saunders Co, NE.

8:30 PM 7.122 CW Four State QRP Comfortable Net.

9:00 PM 3.580.5 PSK Four State QRP Comfortable Net.

9:00 PM 146.820 Pottawattamie County ARES Council Bluffs, IA.

Thursday

8:30 AM 7.122 CW Four State QRP 40M Morning Net.

7:30 PM 145.310- Lincoln/Omaha SATERN Net. Ashland, NE.

8:00 PM 28.350 SSB 10-Meter Net.

8:00 PM 144.250 2-Meter SSB Net.

8:00 PM 147.360 Heartland DX Association.

9:00 PM 145.175 NE D-Star Net also on REF002C though internet.

Friday

10:00 PM 224.760- Tone 146.2 Promote the Band Net

Saturday

12:00 PM 146.82 Swap Net Council Bluffs, IA.

8:30 PM 3.921.000 QCWA Chapter 20.

Sunday

8:00 AM 3.902.500 Swap Net.

8:30 AM 3.897.500 3900 Club.

8:30 PM Locally IRLP and the Nebraska IRLP net is heard on:

145.410 - 97.4 PL ABOVX Honey Creek

444.800 + 97.4 PL ABOVX Honey Creek

444.925 + 136.5 PL KOBVC Mondamin

146.745 - 136.5 PL KOBVC Portsmouth

223.580 (Simplex) 100 PL KOOQL North Omaha

2:00 PM 50.200 6 Meter Net

9:00 PM 146.940- Douglas Co. ARES net, KØUSA repeater.

The ATV is off the air for a while. They are doing some major moving around at the site including removing a 25KW FM transmitter that was damaged by a direct lightning strike. They are on a stand-by TX right now. It will be replaced by a new one that doesn't take up as much room. They are moving some racks around including the one the ATV was in. Over all there should be more room in the building when it is all done. It is a good opportunity to go through the system and test, calibrate and repair as needed. The control receiver didn't work. The crystal had drifted way off frequency. I replaced it with a PXO (programmable crystal oscillator) available from Digikey. They have gone up in price to about \$20 with shipping, tax and packing. Still, It's cheaper than ICM (or other MFRs) of a few years ago, many of whom are now out of business. It required a slight mod to the RX since they run on 3.3 VDC. I had a bunch of boards from an earlier foray with them so it just took a bit of time to get the right voltage and switching to work correctly. The TV transmitter works fine. I'll do some more testing and calibration of the rest of the system so it's ready when we can get it back on the air. The TX will still do 300 watts CW but it needs to be backed off to 200 so it doesn't clip sync. The little pattern generator had a bad contact on it so that got fixed. The color bar generator is still in the rack out there but that is not an issue. 444.95 is still out there as well and working fine. It will probably be a few weeks before we can get the TV back out there since they are going to do some tower work as well. We'll see.

AARC club clothing available:

The club shirt and hat sales are ongoing, and those that have ordered have been quite pleased with the way our clothing looks. Members can order clothing at meetings.

Or you can send an e-mail to John jfifer@centurylink.net.

Polo shirts include a pocket, as well as the member's callsign & name, in red or slate gray. Baseball caps also come in either red or slate gray, and hats are \$18 each and include the member's callsign on the back.

Shirt sizes and prices are: small to XL: \$25, 2XL: \$28 3XL: \$30

4xl and 5xl can also be ordered. AARC patches are for for \$3 each. Club Decals are \$2

ARRL Club Competition:

I have heard from a number of you that you use the different contest to test out new antennas, radios, software and/or sharpen your operating skills. There are nine ARRL-sponsored contests that are designated as Affiliated Club Competitions (ACC) for ARRL and RAC affiliated clubs:

- 1 January VHF Contest².
- 2 RTTY Roundup
- 3 International DX Contest
- 4 June VHF Contest
- 5 222 MHz and Up Distance Contest
- 6 September VHF Contest
- 7 November Sweepstakes
- 8 160-Meter Contest
- 9 10-Meter Contest

We are curious as to how many of you are interested in also submitting your logs towards an AARC score? Please drop me an email if you are interested. at phconnell@cox.net Pat WØOJU.

Bellevue ARC Spring Clean-Up Hamfest 2022

On Saturday, April 9th, 2022
at the Reed Community Center
(1200 Lord Blvd in Bellevue)

Grand Door Prize: [RigExpert AA-650 Antenna Analyzer](#)

VE Testing will be available,
watch the [Bellevue ARC web site](#)
for details.

Breakfast and lunch provided by Athena Assembly 24, International order of Rainbow for Girls, Bellevue Nebraska.

Table Rental: \$15 (includes 1 admission per table)
(setup 7am-9am)

Mail table reservations to:

BARC Spring Cleanup, 8519 S. 47th Ave, Bellevue NE 68157-2639

Please make checks payable to: Bellevue Amateur Radio Club.