



The RELAY)))

DECEMBER 2021



The Official Publication of the Arrowhead Radio Amateur Club

A.R.A.C. Inc.

P.O. Box 7164 Duluth MN 55807-7164

<http://www.thearac.org>

Dues: Member \$20/Family \$25

INDEX

Season of Sharing	1
Board Mtg Minutes	2
Club Mtg Minutes	5
Prez Sez	7
Prez Picks Gift Ideas	7
MARS	8
CW Abbreviations	9
Band Plan	9
Nets	10
Upcoming Events	11
Repeaters	12
Members' Email	13
Calendar	14
Committee Chairs	15
FOR SALE	16
Holiday Gift Guide	17-21
Contest Calendar	23-27

The Relay Co-Editors:

Kim & Steve Waller

Kim - KEØNQS

Steve - KEØNQ7

KEØNQS.mn@gmail.com

KEØNQ7@gmail.com



Winter 2021

The Season of Sharing ARAC Continues Tradition

Here it is: December 2021. It has been a year of returning to “normal” in some ways and re-inventing our lives for a “new normal” in others. We’ve had a good year as a club, resuming in-person meetings and serving our community in relaying essential communications during marathons, races and weather emergencies.

We now look forward to continuing our tradition of gathering for our **Annual Christmas Party on December 9th, at 6 p.m.**, an hour earlier than our regular club meetings. We’ll share the Christmas Spirit of cheer again, along with beautiful Holiday music from the very talented pianist Louie Lincoln, and of course, enjoy delicious pot-luck food.

This marks our 92nd year as a club, and of serving the needs of our community in critical times.

The Holiday Season is especially challenging for families in need. **ARAC** is pleased to answer the call to volunteer as **Salvation Army Bell Ringers** during their **Annual Kettle Campaign**. Do-

nations raised during this time of year help the **Salvation Army** fund their work providing for the essential needs of children and families in our region. **ARAC** Club Members also donate much-needed non-perishable food items every year to the **Salvation Army Food Pantry**. We invite everyone to bring those food items to our Club Christmas Party on December 9th. For example, I was surprised to find a nice selection of Progresso soups at Menards, and



Salvation Army Volunteer Bell Ringers during the Annual Red Kettle Campaign

Continued on Page 22

ARAC Board of Directors

PRESIDENT



NØVRM
Gene Ellefsen
371Ø Chambersburg Ave
Duluth, MN 55811
218-39Ø-3272
lspitech@mail.com

VICE PRESIDENT



NØPDG
Mike Lovold
386Ø Birchwood Rd
Downtown Arnold, MN
558Ø3
lovoldm@gmail.com

SECRETARY



NØCALL
Robin Davis

218-391-3Ø77
davisfam2858@yahoo.com

TREASURER



KNØNUL
Bruce Carlson
9Ø6 Anderson Rd
Duluth, MN 55811
763-315-2967
carlsbr@gmail.com

3RD YEAR BOARD

AAØME
Randy Johnson

randy@nsw4x4.com

2ND YEAR BOARD



KD9ABS
Gary Minter
1621 N 26th St
Superior WI 5488Ø

1ST YEAR BOARD

AAØAC
Dave Davis

218-348-6649
aaØac@outlook.com

**It's time to elect our
ARAC Board Members for 2022!**

Nominations for Club Officers

PRESIDENT
Gene Ellefsen- NØVRM

VICE PRESIDENT
David Pyrlik-KØDJP

SECRETARY
Melinda Nelson-KFØGJW

TREASURER
Bruce Carlson- KEØNIT

FIRST YEAR BOARD MEMBER
Doug Nelson-AAØAW

**Attend the December 9th Club Meeting
at 6:00 p.m. to vote.**

The Thomas J Reibold Award
honors outstanding service to the Club
and to the hobby of Ham Radio.
The 2021 Award will be announced at
the December 9th meeting.

ALSO: Don't forget to bring
non-perishable food items to our
December 9th Christmas Party for the
Salvation Army Food Shelf
to share with families in need
this holiday season!

Continued on Page 3

ARAC Board Meeting - November 2, 2021

PRESIDENT



NØVRM
Gene Ellefsen
371Ø Chambersburg Ave
Duluth, MN 55811
218-39Ø-3272
lspitech@mail.com

VICE PRESIDENT



NØPDG
Mike Lovold
386Ø Birchwood Rd
Downtown Arnold, MN
558Ø3
lovoldm@gmail.com

SECRETARY



NØCALL
Robin Davis

218-391-3Ø77
davisfam2858@yahoo.com

TREASURER



KNØNUL
Bruce Carlson
9Ø6 Anderson Rd
Duluth, MN 55811
763-315-2967
carlsbr@gmail.com

3RD YEAR BOARD

AAØME
Randy Johnson

randy@nsw4x4.com

2ND YEAR BOARD



KD9ABS
Gary Minter
1621 N 26th St
Superior WI 5488Ø

1ST YEAR BOARD

AAØAC
Dave Davis

218-348-6649
aaØac@outlook.com

Present:

Board Members

Gene Ellefsen-NØVRM, Mike Lovold-NØPDG, Robin Davis, Dave Davis-AAØAC

Board Advisors (Non-Board Members)

Doug Nelson-AAØAW, Randy Wabik-KRØB,

Guests Elmer Berg-KCØNGY

Meeting called to order at 6:30 pm by President Gene-NØVRM

Minutes:

Posted on web site and in the newsletter. Any questions? Move to approve by Mike-NØPDG, seconded by Randy-AAØME, motion passed

Treasurer's Report:

As read by Robin, off Bruce Carlson-KNØNUL's report:

Checking 1,374.43
Savings 2,173.57
Subtotal Cash \$3,548.00

Winter CD 1,714.37
Summer CD 0.00
Subtotal CD \$1,714.37

Assets Subtotal: \$5,262.37

Outstanding Checks:

Mahtowa Repeater -1,100.00
Bob Boyd-KDØLYN Memorial -1,090.00
Reserved Funds -2,190.00

Grand Total \$3,142.03 (\$2,972.37)

Motion to accept as read by Dave-AAØAC, seconded by Randy, motion passed.

Christmas Party:

That time of year again for our Annual Club Christmas Party. Can we do food at the Church for the Christmas party? Yes, if we don't ask permission, it is allowed. Motion to spend \$300.00 for food and \$100.00 for prizes by Randy-AAØME, seconded by Robin, motion passed

Repeater:

\$200.00 check from Lake County, donation towards Repeater Upgrade. We are still waiting on check from Grandma's Marathon, which was mailed according to Doug-AAØAW.

Continued on Page 4

ARAC Board Meeting - November 2, 2021

Randy-KR0B talked to Randy Haglin-N0BZZ. Four Star Construction is going out of business, closing the doors. The owners have owned it for sixty (60) years and everyone is out of a job as of December 31, 2021. Randy-N0BZZ has decided he will no longer be tower climbing, especially the long, high climbs. This will change the proposal for the changes to the 94 Repeater system. There is a crew out of Bemidji that does tower climbing. FYI – Randy-N0BZZ is done as he is sixty-seven (67) years old and will no longer be climbing towers nor doing the big stuff anymore. General comments were good for him and welcome to retirement

Testing:

November 29, 2021, at the Moose Lodge 1302, 415 3rd Ave in Proctor MN. Registration is at 6:30 pm with testing starting by 7:00 pm. VEs are always welcome. The House of Refuge Church has become so busy in the evenings; it is difficult to hold testing sessions. Doug-AA0AW had a long talk with Pastor Dave Ballard and he agreed that it would be hard to schedule and hold testing session with the Church having worship and prayer every night

Salvation Army Bell Ringing:

Friday, December 3rd, from noon to 8:00 pm at the Miller Hill Super One, in the lobby as you leave the store. Gene-N0VRM will have a sign up sheet at the meeting for members to participate. It is indoors and everyone is encourage to come ring bells

Thomas J Reibold Award W9IBM Memorial Award:

No nominations yet from Club Members at this time. If you know of a deserving member, please contact one of the Officers

501C3:

Gene-N0VRM is continuing the process of getting the Club registered as a 501C3. He is working on the paperwork that needs to be submitted with the Application, such as the Club Bylaws, etc.

Elections:

Still seeking nominations for the offices of ARAC, through the Club November meeting

Motion to adjourn by Robin, seconded by Mike-N0PDG, motion passed





ARAC Club Meeting Minutes

November 11, 2021

Present:

President Gene Ellefsen-N0VRM
Vice President Mike Lovold-N0PDG
Treasurer / Membership Bruce Carlson-KN0NUL
Secretary Robin Davis
First Year Board Dave Davis-AA0AC
Second Year Board Gary Minter-KD9ABS
Third Year Board Randy Johnson-AA0ME
Special Events – Open / Gene Ellefsen-N0VRM acting
Ham Fest / Education Bob Schultz-KC0NFB
Property / Picnic Scott Ahlgren-N0VYU
Repeater Randy Wabik-KR0B
Repeater David Pyrlik-K0DJJ
Testing Doug Nelson-AA0AW

Absent:

Parliamentarian Grant Forsyth-KC0WUP
Chaplain (Visiting) Rolland Bockbrader-KB0CK
Newsletter / Historian Kim Waller-KE0NQS
Newsletter Steve Waller-KE0NQT
Repeater Randy Wabik-KR0B
Repeater Derek McCorison-W0DNF
Repeater Randy Haglin-N0BZZ
Web Site Thomas Dorr-KE0RHA

Meeting called to order by President Gene-N0VRM at 7:02 pm

Minutes:

Minutes posted in newsletter and on the web site. Motion to accept by Randy-AA0ME, seconded by Scott-N0VYU, motion passed

Treasurer's Report:

Checking	2,796.78
Savings	2,374.17
Subtotal Cash.....	\$5,170.95
Winter CD	1,724.37
Summer CD	0.00
Subtotal CD	\$1,724.37
Assets Subtotal:	\$6,895.32
Outstanding Checks:	
Mahtowa Repeater	-1,100.00
Bob Boyd-KD0LYN Memorial.....	-1,390.00
Reserved Funds	-\$2,490.00
Grand Total	\$4,405.32

Motion to approve as presented by John Cavanaugh-KC0AFE, seconded by Gary-KD9ABS, motion passed

Gene-N0VRM and Bruce-KN0NUL opened up a new account called the Repeater Fund and the monies from the Bob Boyd-KD0LYN Memorial sales, donations, grants from various entities; all are being deposited into this account. Other account balances will change as the monies have been transferred into the Repeater Account

Two donation grants have been award to ARAC: \$200.00 from Lake County EOC, \$1,500.00 from Grandma's Marathon. The Enbridge Grant of \$800.00 is coming soon. Randy Haglin-N0BZZ has been working on the Mahtowa Repeater. Gene-N0VRM and Randy-KR0B will be ordering the parts for the 94 Repeater project with the funds we have

Continued on Page 6



ARAC Club Meeting Minutes, continued

in the Repeater Fund. David-K0DJB volunteered to help maintain the Repeater as well as Randy-KR0B. Plans are to bench test fire all the equipment when it arrives and then put it into place. The upgrade process has begun

Christmas Party:

At the Board meeting, two motions were made:

Motion to spend up to \$300.00 for food, seconded by Doug-AA0AW, discussion? Question for the Christmas Party, will we have as many people as in previous years? Probably not and Gene-N0VRM will cut back as needed when buying the food. Motion passed

Motion to spend up to \$100.00 for gifts, seconded by Bruce-KN0NUL, discussion? Motion passed
Remember, we collect non-perishable food items for the Food Shelf. Christmas Party starts at 6:00 pm, one (1) hour earlier than our regularly scheduled Membership meeting

Salvation Army:

Bell Ringing for the Salvation Army is scheduled for December 3, 2021, noon to 8:00 pm, at the Miller Hill Super One. The Club has not rung bells since 2017

Committee Reports:

Education:

Class will be ending in January 2022. We will not have a class in the winter months

Testing:

Session scheduled for Monday, November 29, 2021, new location at 1302 Moose Lodge, in Proctor, MN. 6:30 pm registration, testing to follow. If anyone is interested, please contact Doug-AA0AW via email. He will also set up a test session for the end of class. Remember to bring a copy of your license, testing fee, an email address, a FRN, which is now required, prior to testing

Nominations for Officers:

President - Gene Ellefsen-N0VRM

Call for nominations for the office of President three (3) times. Nominations for President are closed

Vice President - David Pyrlik-K0DJP

Call for nominations for the office of Vice President three (3) times. Nominations for Vice President are closed

Secretary - Robin Davis declined nomination and nominated Melinda Nelson-KF0GJW

Call for nominations for the office of Secretary three (3) times. Nominations for Secretary are closed

Treasurer - Bruce Carlson-KN0NUL

Call for nominations for the office of Treasurer three (3) times. Nominations for Treasurer are closed

First Year Board Member - Doug Nelson-AA0AW, Mike Lovold-N0PDG declined

Call for nominations for the office of First Year Board Member three (3) times. Nominations for First Year Board Member are closed

Bob-KC0NFB made a motion to close the nominations, John-KC0AFE seconded, call in favor of closing the nominations say aye. Motion passed. A White Ballot will be cast for all offices

Thomas J Reibold Award W9IBM Memorial Award:

Nominate a member that is promoting the Club or the hobby of Ham Radio. Presently, no one has been nominated so please contact one of the officers if you know someone who is worthy of receiving the Reibold Award

Drawing for \$5.00 door prize was won by Elmer Berg-KC0NGY

Motion to adjourn by Geoff Bennett-KE0BNX, seconded by many, motion passed





Prez Sez...

Well everyone, we are coming to the end of yet another year, and that means the December meeting will be **Officer Elections** (see page 2 for nomination list) and the **Christmas Party!!**

Remember the Meeting on **Thursday, December 9th starts at 6:00 PM**. The Club will provide, as usual, several meat and cheese trays and if you would like to bring a dish to share for the Potluck, that would be great! We always get some wonderful offerings to enjoy.

Also, it's that time to get your **Membership Dues** in. If you can't make a meeting to pay in-person, you can send them in to our **Treasurer Bruce Carlson** direct or to the Club Post Office Box. Thank you!!!

Bruce Carlson
906 Anderson RD
Duluth, MN 55811

A.R.A.C.
P.O. Box 7164
Duluth, MN 55807-7164

I hope all of you have a **MERRY CHRISTMAS** and a **HAPPY NEW YEAR !!!!!**
Gene Ellefsen NØVRM 73



Prez Picks...

Need ideas for **Stocking Stuffers?**

Here are a few suggestions from **NØVRM:**

● **FOOD GIFT CARDS**

from SuperOne
or Cub Foods

● **GAS GIFT CARDS**

from Kwik Trip

● **GIFT CARDS**

from Menards or
Home Depot

● **SMALL HAND TOOLS**

● **ELECTRICAL TAPE**

from Harbor Freight or
Northern Tool Supply

Merry
CHRISTMAS



U.S. AIR FORCE MILITARY AUXILIARY RADIO SYSTEM

Minnesota State MARS Director
Reginald B. Cass / AFS5MN

Gene Ellefsen
NØVRM

Thank you for your time and interest.

Air Force MARS membership could be for you. We do hope that it is.

If you have the following interests, and capabilities, we are interested in recruiting you to become an Air Force MARS member. Completion of the following on line training is mandatory:

Personally, Identifiable Information (PII) <https://iatraining.disa.mil/eta/piiv2/launchPage.htm>
Cyber Awareness https://iatraining.disa.mil/eta/disa_cac2018/launchPage.htm

If you have completed: [Incident Command System](#) (ICS) -100, 200, 700, and 800 training, and have obtained certification for Air Force MARS or are willing to obtain this training, again, Air Force MARS could be for you.

You must be interested in joining a group of individuals that are dedicated to amateur radio, emergency communications, and willingness to learn and used military communications procedures for voice and digital communications.

You must have equipment that will meet the minimum requirements for voice and digital operation. The equipment will be: transmitter, receiver, (transceiver) modified to operate out of amateur radio bands, computer, modem, and antenna's that are designed to operate on military assigned frequencies. (The best antennas will be a dipole cut to the operational frequency. NVIS antennas work best. You will not need a linear amplifier, however if you have one that will operate on out of amateur radio bands that will be a plus)

You must go through and complete training. You are allowed up to 180 days to do so.

Air Force MARS operation's and procedures are based upon "MARS Operating Instruction", (MOI). The MOI manual uses as its basis for instruction a series of Allied Communications Publications (ACP's), Department of Defense Directives, Department of Defense Instructions, and Department of Defense Manual.

If you already belong to a MARS program and would like to consider Air Force MARS, please contact one of the recruiting team members.

Our recruitment team is as follows:

AFA5XK Dave, WB7DRU wb7dru@gmail.com

AFA5ZV Randy, KRØB afa5zv@gmail.com

AFA5JY Reg, KAØRJY reg_cass@msn.com



CW Abbreviations

- AR End of Message
- TU Thank You
- QST Calling all Amateurs
- QRV Are You Ready?
- AS Pse QRX
- PSE Please
- QRL Are You Busy?
- QRX Standby
- BK Back to You
- K Invite to Transmit
- QRU Have anything for me
- QRS Transit Slower
- SK End of Contact



A	●■■■	M	■■■■	Y	■■■■●
B	■■■■●	N	■■■●	Z	■■■■●●
C	■■■■●●	O	■■■■■	1	●■■■■■
D	■■■■●●●	P	■■■■●●	2	●●■■■■■
E	●	Q	■■■■●●●	3	●●●■■■■■
F	●●■■■■	R	■■■■●●	4	●●●●■■■■
G	■■■■●●	S	●●●	5	●●●●●
H	●●●●	T	■■■	6	■■■■●●●
I	●●	U	●●■■■	7	■■■■●●●●
J	■■■■■■■	V	●●●■■■	8	■■■■●●●●
K	■■■■●●■	W	■■■■●●●	9	■■■■●●●●●
L	■■■■●●●	X	■■■■●●●●	0	■■■■■■■■

US Amateur Radio Bands

US AMATEUR POWER LIMITS

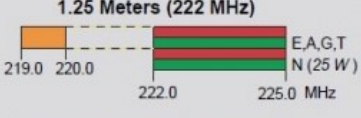
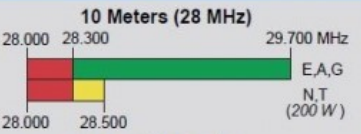
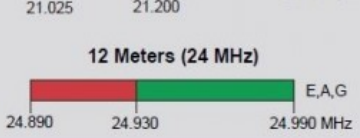
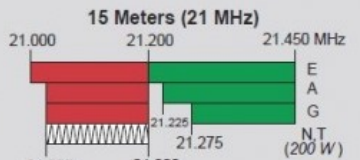
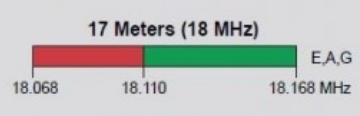
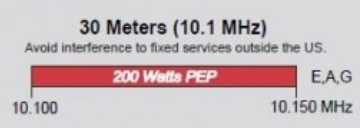
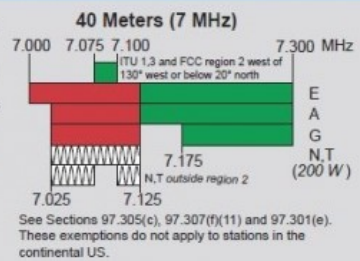
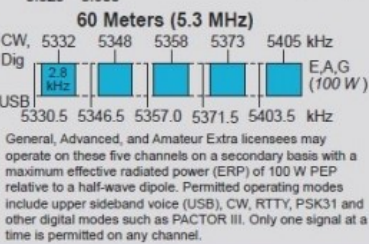
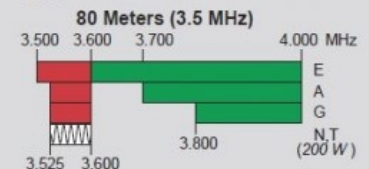
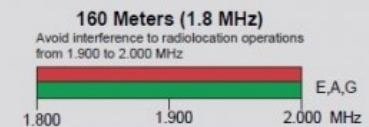
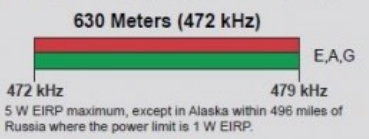
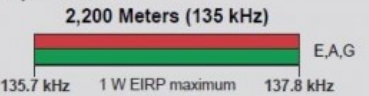
FCC 97.313 An amateur station must use the minimum transmitter power necessary to carry out the desired communications. (b) No station may transmit with a transmitter power exceeding 1.5 kW PEP.

Effective Date for
2,200 and 630 Meters
to be announced

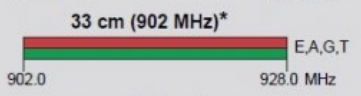
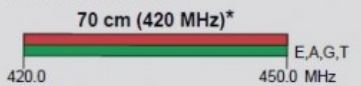


The national association for
ARRL AMATEUR RADIO

On March 28, 2017, the Federal Communications Commission adopted rules that will allow Amateur Radio access to 472-479 kHz (630 meters) and to 135.7-137.8 kHz (2,200 meters). However, amateurs cannot use these frequencies until 30 days after the Report and Order is published in the Federal Register and the final procedures for registering stations with the Utilities Telecom Council (UTC) have been approved and announced. At the time this chart was created, the Report and Order had not been published and the UTC online registration site is not yet available. Follow ARRL news for further information. New charts will be published at www.arrl.org/graphical-frequency-allocations when the bands are fully available for use.



*Geographical and power restrictions may apply to all bands above 420 MHz. See *The ARRL Operating Manual* for information about your area.



All licensees except Novices are authorized all modes on the following frequencies:

2300-2310 MHz	10.0-10.5 GHz ‡	122.25-123.0 GHz
2390-2450 MHz	24.0-24.25 GHz	134-141 GHz
3300-3500 MHz	47.0-47.2 GHz	241-250 GHz
5650-5925 MHz	76.0-81.0 GHz	All above 275 GHz

‡ No pulse emissions

KEY

Note: CW operation is permitted throughout all amateur bands.

MCW is authorized above 50.1 MHz, except for 144.0-144.1 and 219-220 MHz.

Test transmissions are authorized above 51 MHz, except for 219-220 MHz

- = RTTY and data
- = phone and image
- = CW only
- = SSB phone
- = USB phone, CW, RTTY, and data
- = Fixed digital message forwarding systems only

E = Amateur Extra
A = Advanced
G = General
T = Technician
N = Novice

See *ARRLWeb* at www.arrl.org for detailed band plans.

ARRL We're At Your Service

ARRL Headquarters:
860-594-0200 (Fax 860-594-0259)
email: hq@arrl.org

Publication Orders:
www.arrl.org/shop
Toll-Free 1-888-277-5289 (860-594-0355)
email: orders@arrl.org

Membership/Circulation Desk:
www.arrl.org/membership
Toll-Free 1-888-277-5289 (860-594-0338)
email: membership@arrl.org

Getting Started in Amateur Radio:
Toll-Free 1-800-326-3942 (860-594-0355)
email: nowham@arrl.org

Exams: 860-594-0300 email: vec@arrl.org

Copyright © ARRL 2017 rev. 4/25/2017



Have a favorite HF/6m/2m/1.25m/70cm net that you check into or listen in on? Also, please send corrections and we will add it to the list below - Kim KEØNQS at my email KEØNQS.mn@gmail.com.

- **Northland Weather Group Net:** Mondays 2000 on the ARAC repeater (146.940 MHz with a tone of 103.5 and standard offset).
- **Minnesota D-Star Net:** Sundays at 19:30 on Reflector 53A
- **Minnesota Section Net** 1200 and 1730 on 3.860 [Net Manager: NØYR] http://www.mn-section.org/dept_stm.html
- The non-non-net: Evenings 2000 144.200 USB except for Sunday evenings.
- Badger WX Net: 0500-0715 on 3.985. Give 24 hour high/low/current temperature, precipitation and snowfall.
- **PICONET:** 3.925 from 0900-1100 CT Mon-Sat and 1600-1700 CT Mon-Fri. Info at: <http://www.piconet3925.com>
- Michigan Upper Peninsula Net: 1600 (CST) on 3.921 MHz Sun-Sat and 1200 Sun. Info: <http://www.michupnet.com>
- Great Lakes Marine/Maritime Mobile Net: Morning 07:30 - 3.932; 08:15 - 7.261 MHz and evening 18:30 - 3.1730927; 19:15 - 7.268 MHz. Weekend extra net: 10:00 - 7.261/7.268 MHz. All CST, LSB and +/- QRM. See: <http://www.sailblogs.com/member/glimmnet/>
- MIDCARS: 07:30-13:00 - 7.258 MHz. See: <http://www.midcars.net>
- Iowa snowbird net on 14.257MHz, M-W-F at 10:00 am Local Time. This is an open net.
- Spider Web Net (Marco Island FL) on 14.347 every morning at 0730 CST/CDT: <http://www.spiderwebnet.net>
- Maritime Mobile Service Network: Daily at 1100—2100 Central on 14.300. <http://mmsn.org> and <http://www.14300.net>
- RV Radio Network: Every day at 1900 Central on 7.265 MHz. Web site: <http://www.rvradionetwork.com>
- Upper Midwest Ten Meter Net: Every Thursday Evening @ 8 PM – 28.480 MHz USB
- Wisconsin Sideband Net: Daily @ 5:15 PM – 3985 [or 3982.5] KHz LSB
- Upper Midwest Ten Meter Net: Every Thursday Evening @ 8 PM – 28.480 MHz USB
- Hobby Helpers Net - Tuesday @ 8 PM – 28.330 MHz USB (Isanti MN) LSB [Net Manager: WOØA].
- Northstar Trader Net: 3.908 +/- at 0830 CST Sundays
- WARFA: 3.908 +/- Sun/Tue/Thu nights at 2200 CST, <http://warfa.org/>
- Youth Net: 14.320-14330 Sundays 1800-1900 UTC, Net Control: AC8PI
- YACHT: Saturdays 1900 CST on EchoLink #481872, <http://yachthams.webstarts.com>
- Northwestern Ontario ARES Net: Evenings at 20:15 (Central) on +/- 3.750Mhz
- The Iron Range Net: Saturdays at 0800 Central time on or near 3.919 Mhz. Look them up on Facebook!
- FORX Net: Mondays at 1900 Central at 3.941 Mhz +/- QRM. WAØJXT — Grand Forks, North Dakota
- HF CW: Fridays 08:00 CST, 7.112 MHz. Informal slow speed CW Net. W8IRT NCS. Email: w8irt@aol.com
- Minnesota ARES Digital Net: Thursdays at 2000 CST, 3.5835 MHz USB +/- QRM, Mode: Olivia 8/500.
- SARA Digital Net: Sundays at 1900 Local, 3.582.150 MHz USB +/- QRM, Mode: BPSK31/BPSK63
- Spider Web Net (Marco Island FL): 14.347 every morning at 0730 CST/CDT: <http://www.spiderwebnet.net>
- Broadcaster Net: 7.231 or 3.855 M/W/F @ 1500 UTC. 14.255 M-F @ 2130 UTC. <http://www.cbsretirees.com/ham.htm>
- Old Military Radio Net: 7.268 +/- nightly at 0200z. Other times/Frequencies too. See: <http://www.mrca.ar88.net/>
- Rag Chew Crew/Tailgaters/Freewheelers Nets: 3.916 +/- nightly at 1900 CST, <http://www.tailgatersnet.com>
- North South Net: 7.214.6 +/- at 0700 CST, Monday-Saturday



Next ARAC Board Meeting

Tuesday, December 7, 2021
@ 6:30 p.m.
Sammy's Pizza



ARAC CHRISTMAS PARTY 6:00 p.m.

Thursday, December 9th
at the Coppertop Church!

Musical Guest:

Piano Player
Louie Lincoln
with a selection of
Christmas favorites!

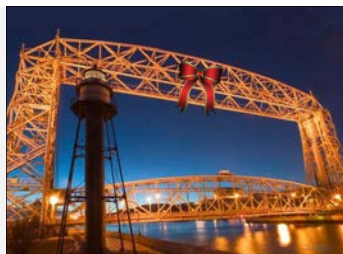


DOING
THE MOST
GOOD®



Don't forget to bring **non-perishable food items**
for the **Salvation Army Food Shelf** to share with
families in need this holiday season!

Duluth Area Repeaters



ARAC System WØGKP

Freq. Offset Tone Location

146.940	minus	103.5	Duluth
146.940	minus	107.2	Lakeside (rcv)
146.940	minus	151.4	Two Harbors (rcv)
146.940	minus	100.0	Gary-New Duluth (rcv)
146.940	minus	123.0	Solway (rcv)
146.940	minus	110.9	Cloquet (rcv)
147.000	minus	103.5	Mahtowa
444.100	plus	103.5	Duluth UHF Link

N9MMU/N9QWH System (WI)

145.310	minus	110.9	Duluth
145.490	minus	110.9	Solon Springs
147.255	plus	110.9	Hayward
145.110	minus	110.9	Rice Lake
147.345	minus	136.5	Holcombe
145.230	minus	110.9	Eau Claire

WECOMM – WI Statewide Linked System WE9COM

147.075 plus 110.9 Meteor Hill (closest repeater to Duluth)

LSAC System #1

147.330	plus	151.4	Proctor
147.330	plus	103.5	Duluth (rcv for Proctor)
147.330	plus	156.7	Duluth (North) (Fish Lake)
147.270	plus	114.8	Two Harbors
147.270	plus	103.5	Wales
147.090	plus	114.8	Silver Bay
145.410	minus	114.8	Finland
147.300	plus	114.8	Isabella
145.150	minus	103.5	Washburn, WI
146.700	minus	103.5	Bayfield, WI
443.850	+5.00	none	Bayfield, WI
147.165	plus	110.9	Hurley, WI
146.640	minus	151.4	Ely
443.500	+5.00	141.3	Gilbert
147.060	plus	103.5	Virginia
147.360	plus	162.2	Cook
147.165	plus	114.8	Coleraine
443.925	+5.00	110.9	Brainerd
443.200	+5.00	114.8	Tamarack
147.360	plus	203.5	Aitkin
146.865	minus	146.2	Giese
147.570	simplex	146.2	Hinckley
444.575	+5.00	146.2	Hinckley
443.325	+5.00	146.2	Isanti

NARC System NAØRC

145.45Ø	minus	1Ø3.5	Solway Twp
145.45Ø	minus	114.8	Park Point (rcv)
147.135	plus	114.8	Park Point (rcv)
147.135	plus	1Ø3.5	Knife River

Stand Alone Repeaters

145.21Ø	minus	11Ø.9	Clam Lake, WI
146.88Ø	minus	123.Ø	Grand Rapids
146.91Ø	minus	146.2	Duxbury, MN

Fusion and D Star

Fusion (Analog has tone and C4FM digital with no tone)

147.15Ø	plus	151.4	NTØB Gilbert Fusion Rptr
145.17Ø	minus	11Ø.9	WA9KLM Superior –
Douglas County RACES/ARES Fusion Repeater			
443.1ØØ	+5.ØØ	1Ø3.5	KBØYHX Cloquet –
Carlton County RACES/ARES Fusion Repeater			
444.3ØØ	+5.ØØ	1Ø3.5	NØEO Spirit Valley Amateurs Fusion
Repeater WIRES-X NØEO (Analog only) Fusion Room 40494			
147.375	plus		NØEO D Star
442.2ØØ	plus		NØEO D Star

Repeater list compiled by Dr. Frequency—KCØWDQ

ST. Louis County Department of Emergency Services Net Control Roster

N9DMG	Scott Swanson	NØVRM	Gene Ellefsen
AAØAW	Doug Nelson	KCØWDQ	Paul Dallavia
WØNWO	Dave Miller	WØDIO	Dennis Anderson
KØDSL	Diane Saunders	AAØME	Randy Johnson

Sunday Nights at 21ØØ on the ARAC System
(See Calendar for net control schedule)

Ten Meter SSB Net Control Roster

AAØAW	Doug Nelson	WØLWU	Joe Meese
NUØW	Gary Hanson	K9KDK	Al Babcock
WØDIO	Dennis Anderson	NØVRM	Gene Ellefsen
AAØME	Randy Johnson	KØDSL	Diane Saunders

Sunday Nights at 2ØØØ on 28.45Ø MHz USB

Ten Meter CW Net Control Roster

AAØAW	Doug Nelson	NØPDG	Mike Lovold
-------	-------------	-------	-------------

Sunday Nights at 193Ø on 28.125 MHz

Northland Weather Group Net Control Roster

KCØMKS Jeff Nast

Monday Nights at 2ØØØ on the ARAC System

Douglas County Net

Tuesday Nights at 2ØØØ on 145.49Ø (N9QWH System)

Central Carlton County Net

Tuesday Nights at 2Ø3Ø on the ARAC System

Lake County RACES/ARES Net

2nd & 4th Wednesday Nights at 19ØØ on the LSAC 1 System



Elmers

El-mer / el-mær/ [el-mer]

1. a male given name: from Old English words meaning "noble" and "famous."
2. an adhesive used to bond like or unlike materials
3. An experienced ham radio operator who mentors new and prospective hams.

<u>Name</u>	<u>Call</u>	<u>Expertise</u>
Jeff Nast	KCØMKS	APRS, EchoLink, WinLink, Fusion, Contesting
Bob Schulz	KCØNFB	Contesting
Jim Anderson	NØJWA	QsoNet
Doug Nelson	AAØAW	HF, VHF/UHF, Contesting, Packet, APRS, Morse Code, VE testing, Echolink, Allstar, EmCom...

Membership E-mail Directory

Ahlgren, Scott NØVYU
sahlgren01@msn.com

Anderson, Jim NØJWA
kcØmko@centurylink.net

Anway, Allen KC9LJN
allen@a2d2.com

Bakke, Richard KDØQHE
rabakke46@aol.com

Barnes, Ray KEØZN
KEØZN@outdrs.net

Blodgett, Warren KDØXI
kdØxi@aol.com

Blotti, Nick KBØMHD
NickBlotti@hotmail.com

Bockbrader, Jonah KEØCXD
j@pelirrojo.ninja

Bockbrader, Rollie KBØCK
Rollie.bockbrader@q.com

Clemens, Butch KBØSMG
kbØsmg@2z.net

Currier, Barb
bjcurrier@peoplepc.com

Dall, Jim WDØGVW
Dall, Teresa KAØCDO
wdØgvw@gmail.com

Dallavia, Paul KCØWDQ
kcØwdq@yahoo.com

Daly, Ed KØYMF
eddalymn@aol.com

Ellefsen, Gene NØVRM
lspitech@mail.com

Ferch, Tim AKØTF
akØtf@aol.com

Ferguson, Tom WBØDHB
tferg5@msn.com

Fleischman, Bill KCØZZL
wfleisch@d.umn.edu

Forsyth, Grant KCØWUP
forsythgrantc@gmail.com

Frederick, Jerry NØBNG
nØbng@mchsi.com

Frederick, Julie NØPIE
jfreds@mchsi.com

Gibbs, Rex NØKXT
nØkxt@yahoo.com

Godbout, Med WØEEZ
wØeezmedgodbout@centurytel.net

Hanson, Gary NUØW
captaingary@chartermi.net

Harstad, Ben KEØJDB
coast_guard_aux_duluth@yahoo.com

Hawkinson, Garry WØELH
garryhawkinson@yahoo.com

Hegrenes, Bruce KØOE
Hegrenes@charter.com

Jakubek, Patrick KDØSGK
kdØsgk@gmail.com

Johnson, Randy AAØME
randy@nsw4x4.com

Leslie, Shirl KBØSBM
dsleslie@centurytel.net

Maida, Tom KFØALP
tmaida@outlook.com

Makowski, Cletus KBØLBS
kbØlbs52@msn.com

Makowski, Karen NØWEZ
k-wez1@hotmail.com

Marchetti, Jim KEØLHX
KEØLHX@outlook.com

Mattson, Bing KCØKRA
, Kathy KCØTIV
HamToHam@msn.com

McCorison, Derek WØDNF
derek1Ø68@hotmail.com

Meese, Joe WØLWU
rxcpd@yahoo.com

Miller, Dave WØNWO
dmiller@nwoutlet.com

Mullozzi, Anthony (Nick)
KDØYQA
AJ KDØYPZ
Ben KDØYQB
Joe KDØYQC
amulloz@hotmail.com

Murray, Edwin W1ELM
w1elm@arrl.net

Nast, Jeffrey KCØMKS
kcØmks@gmail.com

Nelson, Doug AAØAW
aaØaw@chartermi.net

Nelson, Glen KAØGGG
mgnelsonØ1@gmail.com

Nelson, John KBØSUW
jon275@q.com

Nordin, Al WBØDBQ
anordin@aol.com

Olson, Lloyd Jr. KC9JTC
kc9jtc@yahoo.com

Pearson, Wayne WØKRH
meppsy@netzero.net

Pettit, Kathy KCØYVM
kcØyvm@gmail.com

Pomroy, Deb KCØUKC
dpomroy@d.umn.edu

Pyrlik, David KØDJP
David.pyrlik@gmail.com

Reger, Bernard KB9KQZ
Mike KB9KRA
Brian KB9KUX
Chris KB9WJQ
bjr5488@yahoo.com

Rosell, Dawson KEØHEL
rosel032@d.umn.edu

Saunders, Diane KØDSL
kØdslae@gmail.com

Scholz, Greg KDØUYN
kdØuyn@gmail.com

Contact Kim or Steve Waller to include your name in this listing!

Schreyer, Dave WAØAWZ
wa0awz@gmail.com

Schulz, Robert KCØNFB
kcØnfb@charter.net

Snyder, Mark ACØLE
snyds1118@msn.com

Stark, John KCØYVH
johnvinyl@yahoo.com

Swanson, Scott N9DMG
sswanson6749@charter.net

Waller, Kim KEØNQS
keØnqs.mn@gmail.com

Waller, Steve KEØNQT
keØnqt@gmail.com

Whelan, Jacqui KBØJIM
cndymx@gmail.com

Whelan, John KØJRW
jr-whelan@hotmail.com

Winterscheidt, Heinz
KD6FSA
alter.skipper@gmail.com

Wulf Gar WU1FGR
wu1fgr.ham@gmail.com

Members, please check your name and email address for accuracy. If you are not on this list and want to be on the list, contact us with your info. If you need to make a change, please let us know at KEØNQS.mn@gmail.com Or KEØNQT@gmail.com

Co-Editors,



Contact Kim or Steve Waller to include your name in this listing!

SUNDAY NIGHT NETS
 1930 - CW - 28.125 MHz USB-CW
 2000 - USB 28.450 MHz
 2100 - Southern St. Louis County
 Emergency Services Net
MONDAY NIGHT NETS
 2000 - Northland WX Net - ARAC Repeater

DECEMBER

CLUB EVENTS

TUESDAY NIGHT NETS
 2000 - Douglas Cty 145.490 MHz
 2030 - Central Carlton County
WEDNESDAY NIGHT NETS
 1900 - Lake County - LSAC1
 2nd & 4th Wednesdays
 2100 - BWAR



Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	 0000z-2400z
5 CW 1930 NØPDG USB 2000 NØPDG ES 2100 AAØAW	6 WX 2000 KCØMKS	7 ARAC BOARD MEETING Sammy's Pizza 6:30 pm DC Net 2000 CC Net 2030	8 Lake County ARES/RACES Meeting 1800 Lake County Net 1900 2100 - BWAR	 ARAC Christmas Party Coppertop 6:00 PM!	10	11
12 CW 1930 AAØAW USB 2000 AAØAW ES 2100 AAØME	13 DC ARES/RACES Mtg 1900 DC EOC WX 2000 KCØMKS	14 DC Net 2000 CC Net 2030	15 St. Louis County ARES/RACES Mtg 1630 Pike Lake EOC 2100 - BWAR	16	17	18 ARAC Club Breakfast The Chalet 4833 Miller Trunk Hwy Hermantown, MN 8 am
19 CW 1930 NØPDG USB 2000 WØLWU ES 2100 N9DMG	20 WX 2000 KCØMKS	21 DC Net 2000 CC Net 2030	22 Lake County Net 1900 2100 - BWAR	23 Carlton County ARES/RACES Meeting 1900 CC EOC	24	25 
26 CW 1930 AAØAW USB 2000 K9KDK ES 2100 AAØAW	27 WX 2000 KCØMKS	28 DC Net 2000 CC Net 2030	29 2100 - BWAR	30	31	

Get this newsletter *faster*
via email!
Email Doug AAØAW at
aa0aw@arrl.net

Next Meeting: Thursday,
December 9th, 2021 - 6 pm
at the Coppertop Church!

ARAC Committee Chairs



Club License Trustee:

Ray Barnes KEØZN

Control Operators:

AAØAW - NØKXT - KCØNFB

Newsletter/Historian:

Kim KEØNQS & Steve KEØNQT
Waller

Education Chair:

Bob Schulz KCØNFB

Hamfest Chair:

Bob Schulz KCØNFB

Chaplains:

Visiting Chaplain:

Denny Anderson WØDIO

Parliamentarian:

Grant Forsyth KCØWUP

Website:

Thomas Dorr KEØRHA

Membership:

Bruce Carlson KEØNIT

Property Chair:

Wulf Gar WU1FGR

Testing:

Doug Nelson AAØAW

Field Day:

Dennis Anderson WØDIO

Picnic Chair:

Scott Ahlgren, NØVYU

Repeater Chairs:

Randy Haglin NØBZZ
Randy Wabik KAØJZV

Contest Calendar at www.contestcalendar.com

National Contest Journal at www.ncjweb.com

QSO Party Note: State/Province/National QSO Parties are abbreviated with the 2 or 3 letter abbreviation for the state/province/national designation followed by QP for QSO Party:

Examples: Minnesota QSO Party is MNQP
British Columbia QSO Party = BCQP

QRZ web site at www.qrz.com

VHF Propagation site at www.aprs.mountainlake.k12.mn.us

Reminder: The Contest Corral monthly listing of contests can be found in each issue of QST. ARRL sponsored contests can be found in Contest Corral, highlighted, or on the ARRL's web site at arrl.org.

FOR SALE



**For Sale:
Four sections Rohn 25G tower,
plus one top section.**

**Included are mast and home-
brew gin pole. \$500.**

**Located in Warba, can be deliv-
ered to Duluth area for \$50.**

**Contact Jeff Bodin, WA0VOM
at jdbodin@gmail.com**

Denny Burt KB0SPA has a close friend—Lynn Johnson KB9PFF of Siren, WI—who became a Silent Key. KB9PFF's radio equipment is now located in Barnum at the house of KB0SPA. Denny has difficulty hearing phone calls, so those interested in the following items, please send texts to KB0SPA at [218-341-4033](tel:218-341-4033)

1. Lafayette swr signal strength meter. 30.00
2. Radio shack htx 242, 2 meter mobile 50.00
3. Icom 2000 2 meter mobile.65.00
4. Icom 2100 2 meter mobile 65.00
5. Kenwood ts-480 hf 200 watt radio 550.00
6. Palomar dx-100 hf mobile amp 3-30 MHz 50.00
7. mirage 35 watt 2 meter mobile amp FM only 30.00
8. Mfj 259 antenna analyzer 150.00
9. Uniden bc60lt handheld scanner 20.00
10. Kenwood HT-22at 60.00
11. Mfj RF line insulator 25.00
12. 2 tv antenna rotors 40.00 each
13. 2 vintage regency crystal scanners 10.00 each
14. Homemade 80 meter antenna 30.00
15. 1/4 inch guy wire 80 feet. 20.00
16. Stud finder 3.00
17. Straight line Lazer tape 5.00
18. 2 realistic speakers 5.00
19. Homemade 2 meter beam 5.00
20. Yaesu hf 757 gx Radio 200.00

List Your **FOR SALE** items in the next ARAC Relay! Submit photos and descriptions to ke0nqs.mn@gmail.com



HOLIDAY GIFT IDEAS & BUYING GUIDE

RADIOS

& Equipment



YAESU FTM-6000R 50W 144/430MHz Dual Band FM Mobile Transceiver \$319.95 at Ham Radio Outlet, HamRadio.com

YAESU FTDX-10 HF/50MHz 100W SDR Amateur Radio Transceiver \$1,599.95 at HamRadio.com



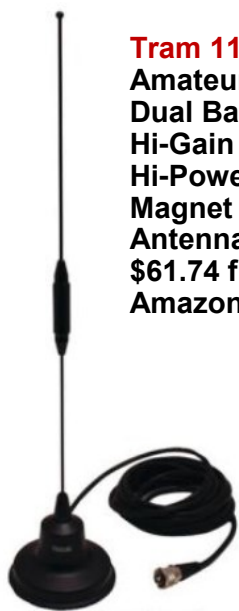
SDRPLAY RSPdx
Single-tuner 14-bit SDR 1 kHz to 2 GHz
2-SMA 1-BNC

Complete redesign of the popular RSP 2 pro multi antenna receiver. Wideband full featured 14 bit SDR, covers entire RF spectrum from 1 kHz to 2 GHz. Combined with the power of readily available SDR receiver software (including SDRUno supplied by SDRplay), you can monitor up to 10 MHz spectrum at a time.

3 software selectable antenna inputs & an external clock input. With a computer and an antenna, it provides excellent communications receiver functionality. A documented API allows developers to create new demodulators or applications around the platform. \$239.99 at HamRadio.com



ICOM IC-V86
2M 7 Watt FM HT
W/2250mAh Li-ion
Battery & Traditional
BNC Connector.
\$128.95 at
HamRadio.com



Tram 11861
Amateur
Dual Band
Hi-Gain
Hi-Power
Magnet
Antenna,
\$61.74 from
Amazon.com



**KENWOOD SP-23 External
Speaker**
for TS-590SG / TS-450 / TS-
690

Matches several Kenwood transceivers including the TS-590SG, TS-450S, TS-570S/D and TS-690. \$92.95 at HamRadio.com

**MMDVM Hotspot Spot Radio Station
WiFi Digital Voice Modem**

Supports Digital Radio Only NXDN
POCSAG P25 YSF DSTAR C4FM
DMR

Pre-configured for a Wi-Fi network.
SSID: Pi-Star (or Pi-Star-Setup) Just
connect to temporarily WIFI: pi-star,
access the device through your web
browser using Pi-Star. Then save
your own house WIFI details to
HOTSPOT \$128.73 at Amazon.com



The SDS200
incorporates the
latest True I/Q
Receiver technology

Best digital de-
code perform-
ance in the
industry

\$699.99 from
Amazon.com



UNIDEN SDS200
Advanced X Base/Mobile Digital
Trunking Scanner

Continued on Page 18



HOLIDAY GIFT IDEAS & BUYING GUIDE *continued*

SIGNS, POSTERS, & PLAQUES



Vintage-look Sign, 11"X17"
\$19.36 from Amazon.com



Parking Only Sign, 8"X12"
\$16.99 Etsy.com



CUSTOM Call Sign Circle Sign, 18" Shown, \$79.95.
Other Sizes: 8" - \$32.95, 12" - \$48.95, 14" - \$61.95,
24" - \$99.95, 28" - \$147.95, 32" - \$185.95 at Pamotee.com



Vintage-look unframed poster, 24"X36" \$26.99 on Ebay.com



CUSTOM US Navy Cut Metal sign. Choice of ship model,
Choice of ship name. Multiple sizes: 8" - \$36.95,
12" - \$51.95, 14" - \$62.95, 18" - \$79.95, 24" - \$98.95,
28" - \$151.95, 32" - \$161.95 at Pamotee.com



Wooden sign,
11.5"W x 6"H
Natural wood color,
etched with your call
sign, 2 holes
for mounting,
\$18.95 on
Ebay.com

Continued on Page 19



HOLIDAY GIFT IDEAS & BUYING GUIDE *continued*

APPAREL



Grandpa Ham Radio Legend hat, \$27.33 at RedBubble.com



Ham Radio Works Tee
Multiple colors & sizes, \$17 & up, Teepublic.com



Tee Shirt - \$14, Hoodie - \$45, as-sorted colors & sizes from Teepublic.com



Ham Radio Ugly Christmas Sweater T-Shirt, 24 Colors, Sizes Small to 5XL, \$14 from Teepublic.com



"Proud to be 0.2%" Tee - \$14.45, available in 4 colors & 6 sizes at Printerval.com



Ham Radio Apron
10 colors, \$23.95 from Printerval.com

"I Love" Tee - \$14 & up, available in 20 assorted solid colors & 8 sizes up to 5XL, from Teepublic.com



Hat with custom call sign, khaki (shown), black, navy or olive, choice of 23 thread colors \$20.95, Etsy.com, seller JohnsEmbroidery



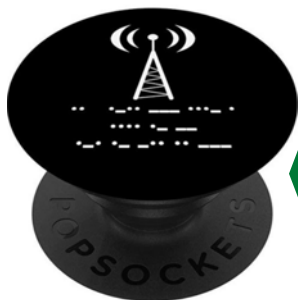
Ham Radio The Original Social Network Amateur Operator T-Shirt. 6 colors; Men, Women, Youth Sizes, \$18.45 at printerval.com

Continued on Page 20



HOLIDAY GIFT IDEAS & BUYING GUIDE *continued*

Accessories



"I Love Ham Radio" CW Pop Socket grip for phones & tablets, \$14.99 at Amazon.com



Amateur Radio International Symbol iPhone Case \$22.75 from RedBubble.com

HEIL PRO7BU

Heil Rugged Passive Noise Reduction Headset with Dynamic HC-7 Element - Blue

\$274.95 from Ham Radio Outlet

HamRadio.com



Drinkware



"I Think therefore I HAM" Drinkware

19 oz pilsner pub glass \$18.95 from Amazon.com

Stemless wine glass, \$25.94 from Etsy.com seller RealPeopleGoods



Personalized "Amateur Radio Knowledge/ I'm Radio-Active" 20 Oz. Insulated Cup with Lid \$29.99 at Amazon.com

"Goddess of Ham Radio" Mug

15 oz mug is printed on both sides for left hand or right hand view

Truly Permanent special ceramic ink will never fade or wear

\$21.95 at Amazon.com



"May The Morse Be With You" Mug

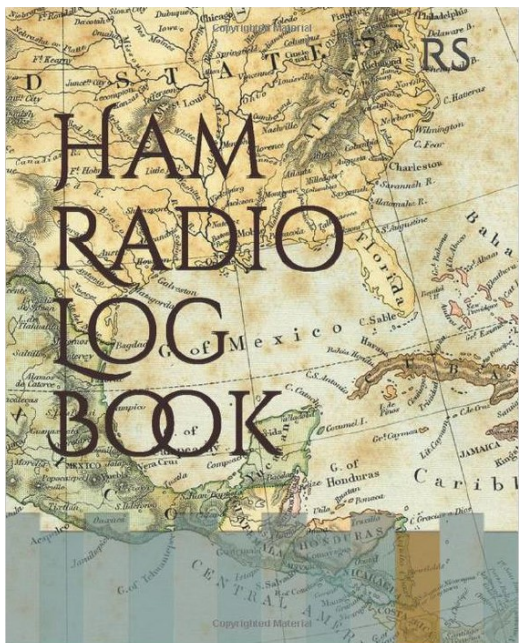
Available in two sizes:
11 oz - \$14.95
15 oz - \$17.95

Go to Etsy.com and select the seller PicksPlaceGifts

Continued on Page 21



MORE FUN GIFT IDEAS ...



Amateur Radio Operator Log Book, "8"x10", by Vintage Ham Operators

Record all the details of your contact:

- ◆ Start and end time
- ◆ Frequency
- ◆ Station contacted
- ◆ Signal report
- ◆ Contact's location
- ◆ Additional notes

Vintage world map globe cover style, Paperback, 102 pages.

\$8.99 from Amazon.com



Proud Ham Radio Operator Tote Bag
Colors: black, white, navy, red, natural
15.25"X15.75", \$15.95 at Printerval.com

Bench Mount Rack Stack Clean up your desktop by going UP instead of out! Sturdy & made in USA with choices of side color; tops are choice of white or wood-grain look. \$29.99 from Ebay.com



24x36 Ham Radio World Map 2021 Edition, with the DXCC country list. Professional quality offset printing (NOT an inkjet digital print). Highly detailed, with CQ zones, US and Canada call areas, and all current DXCC entities. \$34.99, Amazon.com

SEASON of SHARING, Continued from Page 1

for a price that is usually lower than anywhere else in town. Dollar Tree also has a really good selection of canned and boxed items as well, and often they are name-brand, really high quality items. In addition, those multipacks you purchase at Sam's Club make great sources of canned & boxed food to share. If you're shopping at Fleet Farm, they have a small, but generally well-priced, non-perishable food selection. And finally, don't forget to consider donating pet food to the Salvation Army Food Pantry. Families in need often have pets, and thinking of their furry friends is very much appreciated.

The Duluth Salvation Army is a wonderful way to share the joy of the Holiday Season, from your family to another less-fortunate family in our area. Christmas toys for kids, the Food Pantry, and help paying for heat through the Heat Share program are just a few areas of immediate impact. What's more, Salvation Army is dedicated to serving the needs of Northland families the whole year through. See below for an "at-a-glance" summary of their programs and services. You, or someone you know, may just need a "hand up" this year. If not, consider being a helping hand to someone in our community that does.

Merry Christmas Everyone! ★

Duluth Salvation Army Programs and Services

Our programs and services are funded by generous donors and staffed by kind-hearted volunteers. When you donate online or become a volunteer, we can do even more good for people in need in the Greater Duluth area.

Call **218-722-7934** to learn about the help that is currently available.

You may also visit <https://centralusa.salvationarmy.org/northern/Duluth/>

Local programs and services include:

FOOD

Weekday hot lunch – Our hot lunch program provides a free, nutritious weekday meal to anyone who visits our Salvation Army service center at 215 South 27th Avenue West. Lunch is served from 11:30 a.m. – 12:30 p.m.

Emergency Food Shelf – Our food pantry offers free groceries to individuals and families in need who live between 10th and 40th Ave. W., and in the Piedmont neighborhood. Food is distributed at the Salvation Army service center on Mondays and Thursdays from 1:30 – 4 p.m.

Medical food shelf – Our medical food shelf is available by appointment on Wednesdays from 1:30 – 3 p.m. This service is for people with special dietary needs. A medical referral is required.

HOUSING

Housing assistance is a cornerstone of our mission to offer a hand up to Duluth residents who are homeless or are at risk becoming homeless

OTHER BASIC NEEDS

We support Duluth residents with a wide array of basic needs by providing help with:

- Rent and mortgage payments
- Heat and other utilities
- Clothing and household items from our Salvation Army Store
- Transportation
- Meeting the needs of disaster survivors
- Christmas toys and food for low-income families

YOUTH ENRICHMENT

Our youth enrichment programs offer fun and fellowship for boys and girls. Wednesday youth programming during the school year includes Bible study, music, crafts and dinner.

Our popular Rookie Basketball Association teaches teamwork, skill formation and character development through the game of basketball.

ADULTS

Forever 50s is a senior group that meets twice a month (2nd and 4th Wednesday) for outings and social activities. Anyone over 50 is welcome. Call us to request a program schedule.

Our Caring Ministries support monthly events at three Duluth nursing homes. Seasonal visits and gift distribution take place at nine other centers. Visits are also made to home-bound seniors.



Contest Calendar - December 2021

+ QRP Fox Hunt	0200Z-0330Z, Dec 1
+ Phone Weekly Test - Fray	0230Z-0300Z, Dec 1
+ CWops Mini-CWT Test	1300Z-1400Z, Dec 1
+ VHF-UHF FT8 Activity Contest	1700Z-2000Z, Dec 1
+ CWops Mini-CWT Test	1900Z-2000Z, Dec 1
	0000Z-0100Z, Dec 2 and
+ Walk for the Bacon QRP Contest	0200Z-0300Z, Dec 3
+ QRP ARCI Topband Sprint	0000Z-0300Z, Dec 2
+ CWops Mini-CWT Test	0300Z-0400Z, Dec 2
+ CWops Mini-CWT Test	0700Z-0800Z, Dec 2
+ RTTYOPS Weeksprint	1700Z-1900Z, Dec 2
	1800Z-1900Z, Dec 2 (CW) and
	1900Z-2000Z, Dec 2 (SSB) and
	2000Z-2100Z, Dec 2 (FM) and
+ NRAU 10m Activity Contest	2100Z-2200Z, Dec 2 (Dig)
+ SKCC Sprint Europe	2000Z-2200Z, Dec 2
+ NCCC RTTY Sprint	0145Z-0215Z, Dec 3
+ QRP Fox Hunt	0200Z-0330Z, Dec 3
+ NCCC Sprint	0230Z-0300Z, Dec 3
+ K1USN Slow Speed Test	2000Z-2100Z, Dec 3
+ ARRL 160-Meter Contest	2200Z, Dec 3 to 1600Z, Dec 5
	0500Z-0800Z, Dec 4 and
	1500Z-1800Z, Dec 4 and
+ UFT Meeting	0700Z-1000Z, Dec 5
	0600Z-0629Z, Dec 4 and
	0630Z-0659Z, Dec 4 and
	0700Z-0729Z, Dec 4 and
+ Wake-Up! QRP Sprint	0730Z-0800Z, Dec 4

Continued on Page 24



Contest Calendar - December 2021, Continued

+ PRO CW Contest	1200Z, Dec 4 to 1159Z, Dec 5
+ Two-Meter Classic Sprint	1300Z-1330Z, Dec 4
+ INORC Contest	1400Z, Dec 4 to 1359Z, Dec 5
+ FT Roundup	1800Z, Dec 4 to 2359Z, Dec 5
+ K1USN Slow Speed Test	0000Z-0100Z, Dec 6
+ OK1WC Memorial	1630Z-1729Z, Dec 6
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Dec 7
+ ARS Spartan Sprint	0200Z-0400Z, Dec 7
+ RTTYOPS Weeksprint	1700Z-1900Z, Dec 7
+ NAQCC CW Sprint	0130Z-0330Z, Dec 8
+ QRP Fox Hunt	0200Z-0330Z, Dec 8
+ Phone Weekly Test - Fray	0230Z-0300Z, Dec 8
+ CWops Mini-CWT Test	1300Z-1400Z, Dec 8
+ VHF-UHF FT8 Activity Contest	1700Z-2000Z, Dec 8
+ CWops Mini-CWT Test	1900Z-2000Z, Dec 8
+ CWops Mini-CWT Test	0300Z-0400Z, Dec 9
+ CWops Mini-CWT Test	0700Z-0800Z, Dec 9
+ RTTYOPS Weeksprint	1700Z-1900Z, Dec 9
+ NCCC RTTY Sprint	0145Z-0215Z, Dec 10
+ QRP Fox Hunt	0200Z-0330Z, Dec 10
+ NCCC Sprint	0230Z-0300Z, Dec 10
+ K1USN Slow Speed Test	2000Z-2100Z, Dec 10
+ PODXS 070 Club Triple Play Low Band Sprint	0000Z, Dec 11 to 2359Z, Dec 13
+ ARRL 10-Meter Contest	0000Z, Dec 11 to 2400Z, Dec 12
+ TRC Digi Contest	0600Z, Dec 11 to 1800Z, Dec 12
+ SKCC Weekend Sprintathon	1200Z, Dec 11 to 2400Z, Dec 12
+ ARI 40/80 Contest	1300Z, Dec 11 to 1300Z, Dec 12
+ International Naval Contest	1600Z, Dec 11 to 1559Z, Dec 12

Continued on Page 25



Contest Calendar - December 2021, Continued

+ QRP ARCI Holiday Spirits Homebrew Sprint	2000Z-2300Z, Dec 12
+ CQC Great Colorado Snowshoe Run	2100Z-2259Z, Dec 12
+ K1USN Slow Speed Test	0000Z-0100Z, Dec 13
+ 4 States QRP Group Second Sunday Sprint	0100Z-0300Z, Dec 13
+ OK1WC Memorial	1630Z-1729Z, Dec 13
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Dec 14
+ RTTYOPS Weeksprint	1700Z-1900Z, Dec 14
+ QRP Fox Hunt	0200Z-0330Z, Dec 15
+ Phone Weekly Test - Fray	0230Z-0300Z, Dec 15
+ CWops Mini-CWT Test	1300Z-1400Z, Dec 15
+ CWops Mini-CWT Test	1900Z-2000Z, Dec 15
	0000Z-0100Z, Dec 16 and
+ Walk for the Bacon QRP Contest	0200Z-0300Z, Dec 17
+ CWops Mini-CWT Test	0300Z-0400Z, Dec 16
+ CWops Mini-CWT Test	0700Z-0800Z, Dec 16
+ RTTYOPS Weeksprint	1700Z-1900Z, Dec 16
+ NCCC RTTY Sprint	0145Z-0215Z, Dec 17
+ QRP Fox Hunt	0200Z-0330Z, Dec 17
+ NCCC Sprint	0230Z-0300Z, Dec 17
+ AGB-Party Contest	1600Z-1700Z, Dec 17
+ Russian 160-Meter Contest	1800Z-2200Z, Dec 17
+ K1USN Slow Speed Test	2000Z-2100Z, Dec 17
+ OK DX RTTY Contest	0000Z-2400Z, Dec 18
+ RAC Winter Contest	0000Z-2359Z, Dec 18
+ Feld Hell Sprint	0000Z-2359Z, Dec 18
+ ARRL EME Contest	0000Z, Dec 18 to 2359Z, Dec 19
+ Padang DX Contest	1200Z, Dec 18 to 1159Z, Dec 19

Continued on Page 26



Contest Calendar - December 2021, Continued

+ Croatian CW Contest	1400Z, Dec 18 to 1400Z, Dec 19
+ Stew Perry Topband Challenge	1500Z, Dec 18 to 1500Z, Dec 19
+ ARRL Rookie Roundup, CW	1800Z-2359Z, Dec 19
+ Run for the Bacon QRP Contest	2300Z, Dec 19 to 0100Z, Dec 20
+ K1USN Slow Speed Test	0000Z-0100Z, Dec 20
+ OK1WC Memorial	1630Z-1729Z, Dec 20
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Dec 21
+ RTTYOPS Weeksprint	1700Z-1900Z, Dec 21
+ SKCC Sprint	0000Z-0200Z, Dec 22
+ NAQCC CW Sprint	0130Z-0330Z, Dec 22
+ Phone Weekly Test - Fray	0230Z-0300Z, Dec 22
+ CWops Mini-CWT Test	1300Z-1400Z, Dec 22
+ CWops Mini-CWT Test	1900Z-2000Z, Dec 22
+ CWops Mini-CWT Test	0300Z-0400Z, Dec 23
+ CWops Mini-CWT Test	0700Z-0800Z, Dec 23
+ RTTYOPS Weeksprint	1700Z-1900Z, Dec 23
+ NCCC RTTY Sprint	0145Z-0215Z, Dec 24
+ NCCC Sprint	0230Z-0300Z, Dec 24
+ K1USN Slow Speed Test	2000Z-2100Z, Dec 24
+ Gedebage CW Contest	1200Z, Dec 25 to 1159Z, Dec 26
+ RAEM Contest	0000Z-1159Z, Dec 26
+ DARC Christmas Contest	0830Z-1059Z, Dec 26
+ K1USN Slow Speed Test	0000Z-0100Z, Dec 27
+ QCX Challenge	1300Z-1400Z, Dec 27
+ OK1WC Memorial	1630Z-1729Z, Dec 27
+ QCX Challenge	1900Z-2000Z, Dec 27

Continued on Page 27



Contest Calendar - December 2021, Continued

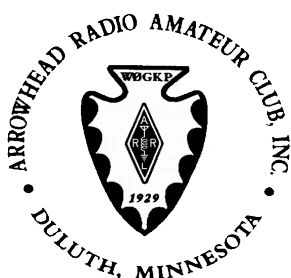
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Dec 28
+ QCX Challenge	0300Z-0400Z, Dec 28
+ RTTYOPS Weeksprint	1700Z-1900Z, Dec 28
+ QRP Fox Hunt	0200Z-0330Z, Dec 29
+ Phone Weekly Test - Fray	0230Z-0300Z, Dec 29
+ CWops Mini-CWT Test	1300Z-1400Z, Dec 29
+ CWops Mini-CWT Test	1900Z-2000Z, Dec 29
+ CWops Mini-CWT Test	0300Z-0400Z, Dec 30
+ CWops Mini-CWT Test	0700Z-0800Z, Dec 30
+ YOTA Contest	1200Z-2359Z, Dec 30
+ RTTYOPS Weeksprint	1700Z-1900Z, Dec 30
+ NCCC RTTY Sprint	0145Z-0215Z, Dec 31
+ QRP Fox Hunt	0200Z-0330Z, Dec 31
+ NCCC Sprint	0230Z-0300Z, Dec 31
+ Bogor Old and New Contest	0900Z-2359Z, Dec 31
+ K1USN Slow Speed Test	2000Z-2100Z, Dec 31

Our thanks to **Bruce Horn, WA7BNM** for use of this calendar! Please visit Bruce's site at www.contestcalendar.com/contestcal.html for many other helpful contest calendar formats.



**WISHING YOU A MERRY CHRISTMAS
AND A HAPPY NEW YEAR!**

The ARAC RELAY



Published monthly and distributed free to members, "The RELAY" is the official publication of the Arrowhead Radio Amateur Club, Inc. Members are encouraged to submit articles, opinions, and classifieds. Your submission will be placed as soon as possible providing it does not conflict with the bylaws of the Arrowhead Radio Amateur Club, Inc. The editors reserve the right to omit any submission that is not a required item. If a submission is questionable, it will be presented to the Board of Directors at the next scheduled board meeting for authorization.

