



The RELAY)))

AUGUST
2022

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

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Three Ham Hero Stories Amateur Radio Operators to the Rescue

In this month's Relay, we look at 3 stories of individual amateur radio operators saving the day — and saving lives. One is as young as 13 years old, another is a ham with only bare bones equipment in a very remote area, and another was a wife and mother in Duluth, MN enjoying her hobby one evening by connecting with hams in Texas and Florida. These particular stories span a century, but there are hundreds, if not thousands, of other stories during that time, when individual amateur radio operators have been the key in rescue situations that would otherwise be tragic.

Our first story is a recent one, occurring June 15, 2020 in Vermont.

There are several accounts of that day, and this retelling will consist of information posted on ARRL.com and from writer Aden Tate on the emergency preparedness website www.theorganicprepper.com. Tate sets the scene:

"It was a beautiful summer day in Vermont, and Alden Summer Jones was making his way down the Long Trail — America's oldest hiking trail.

It's a 273-mile trek across the highest mountains in Vermont — across the entire length of Vermont as well — and all without making contact with any cities or towns, though it does cross a few roads."



Just 2 years prior, on

June 13, 2018, **Alden S. Jones IV, of Bennington, VT** was issued his Technician Class amateur radio license. His callsign, **KC1JWR**.

The Long Trail is considered one of the most remote hiking treks in the U.S. Located in Green Mountain National Forest, it is not far from Jones' house. He'd hiked quite a way into the national trail before his blood sugar reportedly started to drop and he suffered a seizure, passing out. Amazingly, an EMT who was hiking the trail on his day off, came upon Jones just as he was losing consciousness. Rushing to his side, the EMT immediately called 911.

Continued on Page 15

The Relay Co-Editors:

Kim & Steve Waller

Kim - KEØNQS Steve - KEØNQT
KEØNQS.mn@gmail.com KEØNQT@gmail.com



SUMMER 2022



Join us on
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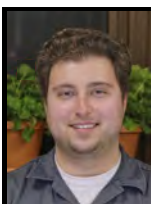
ARAC Board Meeting - July 5, 2022

PRESIDENT



NØVRM
Gene Ellefsen
3710 Chambersburg Ave
Duluth, MN 55811
218-390-3272
lspitech@mail.com

VICE PRESIDENT



KØDJP
David Pyrlík

david.pyrlík@gmail.com

SECRETARY



KFØGJW
Melinda Nelson

TREASURER



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

3RD YEAR BOARD



KD9ABS
Gary Minter
1621 N 26th St
Superior WI 54880

2ND YEAR BOARD



AAØAC
Dave Davis

218-348-6649
aaøac@outlook.com

1ST YEAR BOARD



AAØAW
Doug Nelson

aaøaw@arrl.net

Present:

Board Members

Gene Ellefsen – NØVRM, Bruce Carlson – KNØNUL,
Doug Nelson – AAØAW, Gary Minter – KD9ABS,
Melinda Nelson – KFØGJW, Dave Pyrlík – KØDJP

Board Advisors (Non-Board Members)

Randy Wabik – KRØB
Kim Waller – KEØNQS, Steve Waller – KEØNQT

Guest: Elmer Berg – KCØNGY, Del Minter – KEØCLI,
Gary – KAØALH, Rochelle Nelson

Meeting called to order by President Gene – NØVRM at 18:40
(6:40 pm)

Minutes:

Minutes were sent to Board Members via email. There were no questions or comments made. Motion to approve by Bruce Carlson – KNØNUL, seconded by Doug Nelson – AAØAW, motion passed.

Treasurer's Report:

Checking:	\$1,052.72
Savings:	\$2,374.63
Repeater:	\$4,666.67
Subtotal Cash	\$8,094.02

Winter CD :	\$1,730.42
Summer CD:	\$0.00
Subtotal CD:	\$1,730.42

Assets Subtotal: \$9,824.44

Minus Checks Outstanding:
1578 David Snyder \$245.00
Checks Subtotal: -\$245.00

Grand Total: \$9,579.44

Question from Gary Minter – The check for the Duluth Parks for Chambers Grove Park? Answer that was cleared in January 2022.

Continued on Page 3

ARAC Board Meeting - continued from page 2

Question from Doug Nelson – AA0AW – How many members are we currently at number is 153, with a silent key and a duplicate member so actually 151 members. Motion to approve by Gary Minter – KD9ABS, seconded by Melinda Nelson – KF0GJW.

Hamfest:

Gene – N0VRM received a letter in the mailbox from Matt Sanford – N0TCH the grand prize winner from Hamfest, will put the content of the letter in the newsletter.

Picnic

Doug Nelson – AA0AW motioned that we authorize up to \$300.00 for food. Bruce Carlson – KN0NUL seconded. Motion passed. Still have things left over from Hamfest. August 7th at Chambers Grove Park at 11:15 AM. We are looking for another Grill masters.

Repeater:

Randy Wabik – KR0B, Mahtowa – Trying to find an amplifier and there is nothing out there. The stuff I am finding is way overpriced and it does not fit our application for what we are looking for. I looked at garage amplifiers, and the one I am looking at is not available till September.

Testing:

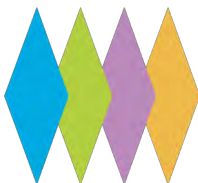
Doug Nelson – AA0AW New question pool is online now. There has not been any interest in setting up a testing session. The last test we had was a couple weeks ago. He tested on a Thursday. Filled out the information and he had his call sign by 01:00AM Friday morning. If anyone wants to test before the new test get ahold of Doug. If anyone needs testing contact Doug at AA0AW@ARRL.net and they will test individually.

New Business:

Gene – N0VRM made a request-ARRL had a funding was from the ARDC. They received \$250,000.00 to distribute to various clubs. You could apply up to \$25,000.00 grant. I sent in for a \$15,000.00 grant. Got all the paperwork sent in now to just wait and see. Deadline was June 30th and could take up to 90 days.

Races coming up – Curnow's is going to be on the 16th of July. Voyageur is going to be on July 30th. Will be using the 94 repeater for these races.

Motion to adjourn by Doug Nelson – AA0AW, seconded by Gary Minter – KD9ABS, motion passed at 19:07 (7:07 pm)





ARAC Club Meeting Minutes

July 14, 2022

Present:

President: Gene Ellefsen – N0VRM
Vice President: Dave Pyrlik – K0DJP
Treasurer/Membership: Bruce Carlson – KN0NUL
Secretary: Melinda Nelson – KF0GJW
First Year Board: Doug Nelson – AA0AW
Second Year Board: Dave Davis – AA0AC
Third Year Board: Gary Minter – KD9ABS
Special Events: Open/Gene Ellefsen – N0VRM (acting)
Parliamentarian: Grant Forsyth – KC0WUP
Repeater: Dave Pyrlik – K0DJP
Testing: Doug Nelson – AA0AW
Repeater: Randy Wabik – KR0B
Property/Picnic: Scott Ahlgren – N0VYU

Absent:

Chaplin:
HamFest/Education: Bob Schulz – KC0NFB
Web Site: Thomas Dorr – KE0RHA
Newsletter/Historian: Kim Waller – KE0NQS
Newsletter/Historian: Scott Waller – KE0NQT

Meeting called to order at 19:00 (7:00 PM) by President Gene Ellefsen – N0VRM. Thirty-nine (39) members in attendance.

Minutes:

Posted on the web page and in the newsletter. Motion to approve by Grant Forsyth – KC0WUP, seconded by Dave Davis – AA0AC, motion passed.

Treasurer's Report:

Checking:	\$1,052.72
Savings:	\$2,374.63
Repeater:	\$4,666.67
Subtotal Cash	\$8,094.02
Winter CD:	\$1,730.42
Summer CD:	\$0.00
Subtotal CD:	\$1,730.42
Assets Subtotal:	\$9,824.44
Minus Checks Outstanding	
1578 David Snyder	\$245.00
Checks Subtotal:	-\$245.00
Grand Total	\$9,579.44

No questions. Motion to accept as presented by Grant Forsyth – KC0WUP, seconded by Mark Soder – KI0DB, motion passed.

Education:

Paul Dallavia – KC0WDQ – Education classes will start September 20th and go till January 10th. Will be hosting via Zoom again.

Continued on Page 5



ARAC Club Meeting Minutes, continued

Testing:

Doug Nelson – AA0AW there are several changes that I think a lot of people know. There is now a \$35.00 fee instituted by the FCC for new licenses. For your General and Extra there are no extra cost. There are procedural and receiving a vanity call will have to pay the \$35.00 fee. For anyone under 18 years old the ARRL will reimburse your \$35.00. You will have to wait to receive your call then there is a form to apply for the reimbursement. Also, anyone under the age of 18, testing fee is now \$5.00. New Technician Syllabus started on July 1st. There are twelve (12) new tests that will be coming. The question pool is public domain. You can access it online. If anyone wants to test before the new tests get ahold of Doug. If anyone needs testing contact Doug Nelson at AA0AW@ARRL.net and they will test individually. When you apply on your 605 you will need an FRN number. You can go to FCC.gov/uls and register. You will also need an email address going forward.

Picnic:

August 7th at Chambers Grove Park. Potluck – bring a dish to share. We will be providing pulled pork, brats, and corn-on-the-cob. We will be able to get in at 10:00 AM, please be patient with us as the food will not be ready right at 10:00. We will be doing a fox hunt as well. The Board made a motion to not exceed \$300.00 on the picnic. 2nd by Grant Forsyth – KC0WUP. Motion passed.

Repeater:

Randy Wabik – KR0B, Mahtowa – Trying to find an amplifier and there is nothing out there. The stuff I am finding is way overpriced and it does not fit our application for what we are looking for. I looked at garage amplifiers, and the one I am looking at is not available till late September.

New Business:

Gene – N0VRM made a request-ARRL had a funding was from the ARDC. They received \$250,000.00 to distribute to various clubs. You could apply up to \$25,000.00 grant. I sent in for a \$15,000.00 grant. Got all the paperwork sent in now to just wait and see. Deadline was June 30th and could take up to 90 days.

Races coming up – Curnow's is going to be on the 16th of July. Voyageur is going to be on July 30th. Will be using the 94 repeater for these races.

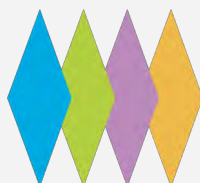
Scott Ahlgren – N0VYU – MS Society will be using the 94 repeater on Monday June 18th and possibly on Friday June 22nd.

New Members:

Helen Miller – KC7YFH
Ralph Garono – KA8ZGM
Justin Cheever – KD9VKI
Andrew Haugen – KF0DBH

Door Prize was won by Elmer Berg – KCONGY

Motion to adjourn by Bruce Carlson – KN0NUL, seconded by Dave Davis – AA0AC, motion passed at 19:24 (7:24 PM). Program presented by Doug Nelson – AA0AW and Melinda Nelson – KF0GJW on how to use Digital Modes.





Prez Sez...

Hi everyone,

Well it's Summer time and you know what that means: **Picnic time.**

Yes the **Annual ARAC Picnic** will be Sunday August 7 at 11:30 out in **Chambers Grove Park** in the far west **Fond du Lac** neighborhood. This is a Pot Luck , so please bring your favorite dish to share. The Club will be providing Pulled Pork, Brats, Corn on the Cob and Bottled Water. We have the Pavilion until 3:00 PM. So come out and have some fun. This is a good time for you newer Hams to get to know the rest of us!!

Thursday August 11th, is the **ARAC Club meeting**, 7:00 PM at the **Copper Top Church**. The program will be Mr. Bob Heil, former owner of **Heil Sound Products**. They produce quality Microphones and Headphones for Amateur Radio use. It should be a very good program!!!

Hope to see many of you at the Picnic,

73, Gene Ellefsen NØVRM
Club President

WELCOME New ARAC Members!

Extra: **Ralph Garono KA8ZGM**

General: **Helen Miller KC7YFH**

Technician: **Justin Cheever KD9VKI**

Technician: **Andrew Haugen KFØDBH**

CW Abbreviations

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

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	■■■■■■■■■



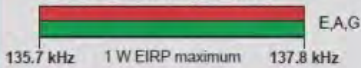
US Amateur Radio Bands

US AMATEUR POWER LIMITS

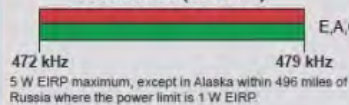
FCC 97.313 An amateur station must use the minimum transmitter power necessary to carry out the desired communications. (b) No station may transmit with a transmitter power exceeding 1.5 kW PEP.

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.

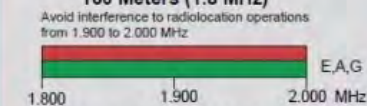
2,200 Meters (135 kHz)



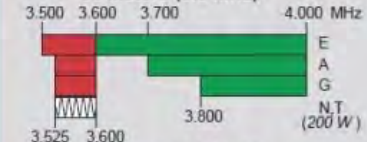
630 Meters (472 kHz)



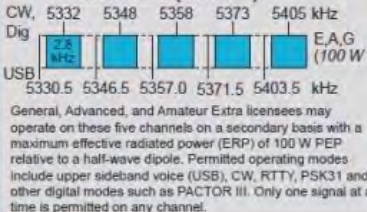
160 Meters (1.8 MHz)



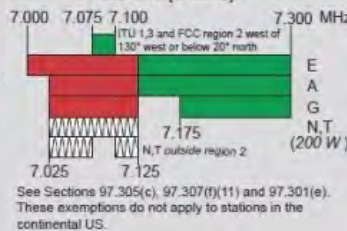
80 Meters (3.5 MHz)



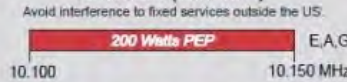
60 Meters (5.3 MHz)



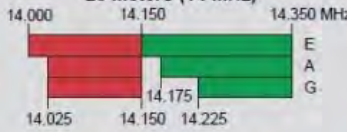
40 Meters (7 MHz)



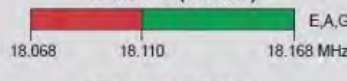
30 Meters (10.1 MHz)



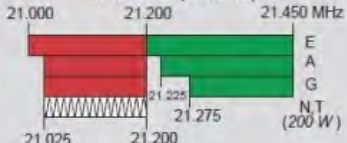
20 Meters (14 MHz)



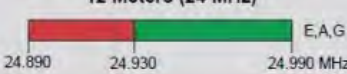
17 Meters (18 MHz)



15 Meters (21 MHz)



12 Meters (24 MHz)



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



ARRL The national association for
AMATEUR RADIO

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

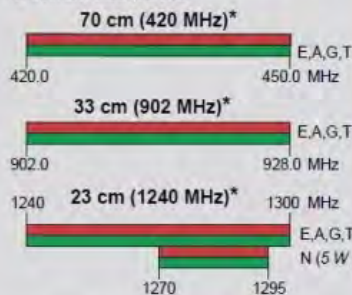
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Getting Started in Amateur Radio:
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email: ncwham@arrl.org

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

*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



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



UPCOMING EVENTS

Next ARAC Board Meeting

Tuesday, August 2, 2022
@ 6:30 p.m.

Sammy's Pizza - Spirit Valley

Next ARAC Club Meeting

Thursday, August 11th
7 p.m.

Coppertop Church!

Live Zoom Program:



*The
Legendary
BOB HEIL
K9EID*

ARAC Club Picnic

Sunday, August 7th
11:30 a.m. - 1:30 p.m.

Chambers Grove Park
Fond du Lac

Please bring a
Pot-Luck dish to share!

*The Club will furnish pulled
pork, brats, corn-on-the-cob
& water*



LOOKING
for an
Amateur Radio License
TESTING SESSION?

No need to wait for a class!

*Schedule your own
Testing Session TODAY!*

Contact Doug Nelson-AA0AW at
aa0aw@arrl.net or 218-391-5874



**WE'RE
HAVING A
PICNIC!**



DULUTH AREA REPEATERS

ARAC System WØGKP

Frequency	Offset	Tone	Location
146.940	minus	103.5	Duluth
146.940	minus	107.2	Lakeside (recv)
146.940	minus	151.4	Two Harbors (recv)
146.940	minus	100.0	Gary-New Duluth (recv)
146.940	minus	110.9	Cloquet (recv)
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)
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LSAC System #1

147.330	plus	151.4	Proctor
147.330	plus	103.5	Duluth (recv for Proctor)
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

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

Stand Alone Repeaters

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

Fusion

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

147.15Ø	plus	151.4	NTØB Gilbert, MN Fusion Repeater
145.17Ø	minus	11Ø.9	WA9KLM Superior – Douglas County RACES/ARES Fusion Repeater (Digital only) Fusion Room 28373

443.1ØØ 5.ØØ1Ø3.5 KBØYHX Cloquet - Carlton County RACES/ARES Fusion Repeater

Fusion continued

444.3ØØ 5.ØØ 1Ø3.5 NØEO Spirit Valley Amateurs Fusion Repeater WIRES-X NØEO (Analog only) Fusion Room 40494

444.3ØØ 5.ØØ 1Ø3.5 NØEO Spirit Valley Amateurs Fusion Repeater WIRES-X NØEO (Analog only) Fusion Room 40494

444.400 5.00 103.5 NAØRC Knife River, MN – Wires X Connected to NØEO Room 40494

444.500 5.00 103.5 NØLCR Two Harbors, MN – Wires X Connected to NØEO Room 40494

444.600 5.00 103.5 NØLCR Silver Bay, MN – Wires X Connected to NØEO Room 40494

D Star

147.375 plus NØEO D Star
442.200 plus NØEO D Star

Revised by KCØWDQ on 4/29/2022 for The ARAC Relay

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-mør / [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.

Name	Call Sign	Expertise
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...

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

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Wulf Gar WU1FGR
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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



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

AUGUST

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 ARAC BOARD MEETING Sammy's Pizza 6:30 pm DC Net 2000 CC Net 2030	3	4	5	6
7 Annual ARAC CLUB PICNIC Chambers Grove 11:30 a.m. CW 1930 AAØAW USB 2000 WØLWU ES 2100 NØVRM	8 DC ARES/RACES Mtg 1900 DC EOC WX 2000 KCØMKS	9	10 Lake County ARES/RACES Meeting 1800 Lake County Net 1900 2100 -BWAR	 11 ARAC Club Meeting Coppertop Church 7:00 PM	12	13
14 CW 1930 NØPDG USB 2000 K9KDK ES 2100 N9DMG	15 WX 2000 KCØMKS	16 DC Net 2000 CC Net 2030	17 St Louis County ARES/RACES Meeting 1800 2100 -BWAR	18	19	20
21 CW 1930 AAØAW USB 2000 NØVRM ES 2100 AAØAW	22 WX 2000 KCØMKS	23 DC Net 2000 CC Net 2030	24 Lake County Net 1900 2100 -BWAR	25 Carlton County ARES/RACES Meeting 1900 CC EOC	26	27 ARAC Club Breakfast The Chalet 4833 Miller Trunk Hwy Hermantown, MN 8 AM
28 CW 1930 NØPDG USB 2000 NØPDG ES 2100 KCØWDQ	29 WX 2000 KCØMKS	30 DC Net 2000 CC Net 2030	31 2100 -BWAR			

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

Next Meeting: Thursday,
August 11th, 2022 - 7 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

Chaplain:

Rollie Bockbader KBØCK

Visiting Chaplain:

Parliamentarian:

Grant Forsyth KCØWUP

Website:

Thomas Dorr KEØRHA

Membership:

Bruce Carlson KEØNIT

Property Chair:

Scott Ahlgren NØVYU

Testing:

Doug Nelson AAØAW

Field Day:

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 by KOGX

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2. AMERITRON ALS-600/PS600	Solid State Amplifier 10-160m 600w	\$1275.00
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4. ICOM IC-706	Mobile Transceiver 2 Meter/HF 10-160m 100w	\$475.00
5. ICOM IC-735	HF Transceiver	\$375.00
6. ICOM IC-2340H	Dual Band Mobile Transceiver UHF/VHF	\$150.00
7. ICOM IC-718	HF Transceiver 10-160m 100w	\$475.00
8. ICOM IC-7200	HF/VHF/UHF Transceiver 6-160m 2m 70cm	\$525.00
9. ICOM IC-751	HF Transceiver 10-160m 100w	\$475.00
10. DRAKE TR-4C	HF Transceiver	\$375.00
11. ALINCO DX-70	HF Mobile Transceiver 10-160m + 6m	\$350.00
12. KENWOOD TS-430S	HF Transceiver 10-160m 100w	\$325.00
13. BIRD 4300-400	Peak Reading Kit for BIRD 43	\$55.00
14. YASEU MD-100	Desk Microphone	\$95.00
15. MFJ-9020	20M QRP CW Transmitter	\$99.00

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

Ham Hero Stories, continued from page 1

Nothing happened. No ring, no connection, no cell service whatsoever. No way to call for backup. Jones began to regain consciousness, surprised to see the EMT at his side who was explaining that they had no way to call for help.

Writer Aden Tate picks up our story: "It just so happened that Alden Jones had brought along his HT (handy-talky) radio with him. Alden's radio was a Baofeng – easily the most hated radio brand amongst serious ham radio aficionados out there. In a disaster situation, though, Alden proved that even something as scorned as a Baofeng could save lives. Alden tuned in to a local repeater on Mt. Greylock, where he put out a call for a rescue. Two men, **Ron Wonderlick AG1W** and **Matthew Sacco KC1JPU**, were sitting at home listening to the radio traffic on the local repeater that day and heard Alden's call for help.

"After a brief discussion between Matthew and Ron, Matthew decided to go mobile. He grabbed his radio gear, jumped in his vehicle, and drove off to the parking lot of the Long Trail (after contacting emergency services). Matthew met the Incident Command Leader for the SAR operation at the parking lot, offering his services as a radio operator to help. The rescue operation agreed. Matthew first attempted to contact the Mt. Greylock repeater that Alden had used initially to make his call for help. Getting a hold of the repeater was tricky, and Matthew knew if he couldn't reach it, the rescue operation would only have a much more difficult time. He initially tried his HT unit. *It didn't work.*

"Then Matthew tried the mobile radio he had attached inside his vehicle. Mobile rigs have better power and range than an HT (they're hooked up to a car battery after all), and Matthew stood a good chance to contact the repeater with such. *However, that didn't work either.*

"Then Matthew had to get creative. Grabbing his "radio bag," he quickly constructed a J-pole antenna, attached it to his HT, and grabbed his fishing pole out of his vehicle as well. A heavy sinker was attached to the fishing pole. Matthew used that to cast his line up and over a tree branch 20' in the air. From there, he attached his J-pole antenna to the line, reeling it up high into the air. Antenna height is paramount to reaching far-away repeaters. After Matthew connected his HT to this new jerry-rigged setup, he could access the Mt. Greylock repeater. The Search and Rescue operation now had outside comms established."

The rescue team hiked in to Alden Jones' location on the trail, as an ATV wasn't able to access him on the trail. This also meant that an ATV would not be able to pull him out of the mountainous terrain either.

Tate continues, "The Mt. Greylock repeater was used to communicate with the New York State Search and Rescue team as they flew a helicopter to Alden's location. It wasn't long until yet another hiccup was introduced into the mix, however. The Search and Rescue team couldn't reach the helicopter with their radios! Why? Because they were using the stock "rubber duck" antennas that came with their radios – a type of antenna notorious for having poor range.

"At this point, Alden's Baofeng was able to assist yet again. He had upgraded his Baofeng stock antenna with an after-market version and lent his radio to the rescuers. Alden's radio was able to establish proper comms with the helicopter, the chopper arrived on site, and Alden was pulled out and brought to safety."

Using the Northern Berkshire Amateur Radio Club's K1FFK repeater on Mount Greylock that day, amateur radio operators Alden Jones KC1JWR, Matthew Sacco KC1JPU and Ron Wonderlick AG1W initiated what, according to ARRL, turned into an 8-hour effort to get Jones off the trail and to a medical facility. Sacco and Wonderlick acted as a relay among Jones, emergency crews, and other agencies involved.

The Bennington Post reported: "The Vermont State Police also received assistance from several licensed amateur radio operators who helped facilitate communications, greatly assisting in the rescue."

So, one Technician, hiking with his Baofeng radio, initiated and



Continued on Page 16

Ham Hero Stories, continued from page 15

and assisted in a massive emergency response operation that saved his own life.

Our next story goes back to 1961 and originates in Duluth, MN. Though short in duration, it captivated newspaper readers worldwide and fostered new-found interest in ham radio. The evening of September 20, 1961 amateur radio operator “Mrs. Donald McCubbin” was in her home. The next morning, The Duluth News Tribune related some details of what transpired that night. The front page headline shouted: **“Ecuador Mercy Call Heard: Duluthian Takes Life-Saving Role”**

The article went on to describe the distress call Mrs. McCubbin received from 3,346 miles away in South America: “A Duluth woman may have helped save the life of a nurse in Quito, Ecuador Wednesday night. Mrs. Donald McCubbin, 2206 Hillcrest Dr., was talking on her ham radio set to parties in Texas and Florida, when a ham operator from Quito, Ecuador broke in about 6:30 PM with an emergency message.

“The Quito operator asked Mrs. McCubbin if she lived near Rochester, Minnesota. He told her he wanted to contact the head medical doctor at the Mayo Clinic. He said a doctor in Quito was treating a 30 year old nurse bitten by a monkey for rabies, and that the doctor had never treated a rabies case before.

“Mrs. McCubbin quickly cleared the air for an emergency message, and then called the head of the Mayo Medical Department by telephone. ‘I hooked the telephone to my radio’, she said, ‘and the two doctors talked for about 12 minutes. The Quito doctor said he had tried to contact a doctor in Panama, but couldn’t reach him. He asked the doctor from Mayo if he should give the girl vaccine right away. The monkey had bitten the girl Tuesday and then the monkey had died Wednesday.’

“Mrs. McCubbin said in her two years of operating a ham radio set, this was the most exciting experience she has had. ‘I’ve relayed a lot of messages before’, she said, ‘but never one that was a matter of life and death.’

“Mrs. McCubbin’s husband also is a ham operator. ‘We have a ham set in our car as well as the house’, she related, ‘and we often talk to each other while my husband is driving’. ‘I really love being a ham’, Mr. McCubbin said. ‘An experience like tonight makes the whole thing really seem worthwhile.’

Were “Mr. & Mrs. Donald McCubbin” members of **Arrowhead Radio Amateur Club**? Maybe. Maybe they were relatives, friends or neighbors of yours! We don’t know their call signs or even Mrs. McCubbin’s first name, so any info you may have, dear reader, is much appreciated!

SIDEBAR: QSL Card Wiki for New Hams

Since way back in the early days of ham radio, amateur radio operators exchanged QSL cards to confirm two-way radio contact between stations.

Each card contains details about one or more contacts, the station and its operator. At a minimum, this includes the call sign of both stations participating in the contact, the time and date when it occurred (usually specified in UTC), the radio frequency or band used, the mode of transmission used, and a signal report.

Although some QSL cards are plain, they are a ham radio operator’s calling card and are therefore frequently used for the expression of individual creativity — from a photo of the operator at their station to original artwork, images of the operator’s home town or surrounding countryside, etc. Consequently, the collecting of QSL cards with especially interesting designs has become a frequent addition to the simple gathering of printed documentation of a ham’s communications over the course of his or her radio career.

Recognizing the historical significance of QSL cards, people are imaging and sharing the cards they collect and inviting relatives, friends and historians to furnish more details about the life and times of the hams behind them.

Now for our third story, which starts back in 1920 with a young boy named Robert J. Marx.

These days, Mr. Bob Green W8JYZ of Harris, NC runs a website you may have heard of called **oldqslcards.com**. He scans in images of old QSL cards and catalogs them in a list as well. He invites inquiries from the public looking for images of their relative’s QSL card and invites the families and friends to tell the story of who that ham was to post along with the QSL card images.

One old card from Mr Green’s collection has quite the story behind it. So much so, that a children’s book was written about the boy behind the QSL card. That boy was Robert J. Marx, who was born in New York City in 1913. Green’s website tells part of his story:

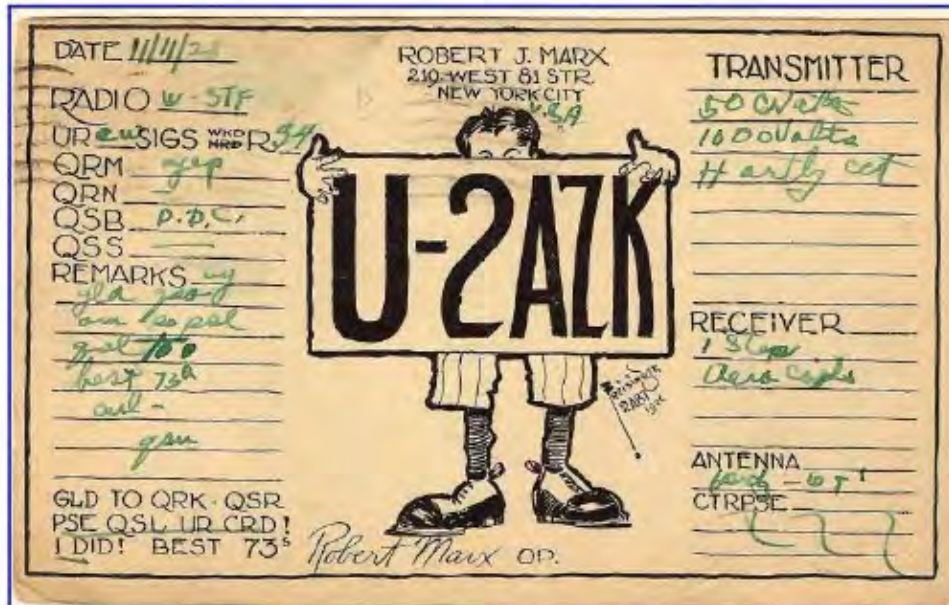
“One summer young Bob Marx came home from a session of camp at age 6 or 7 years. Robert wanted a bicycle but his parents discouraged that idea for safety’s sake because of the huge traffic problem in NYC, and mentioned: rather, would he like talking to the world on a wireless? That was it, wireless stuck and he was on his way.”

Various narratives report that from then on, Robert couldn’t wait to get his ham radio license. He practiced Morse code constantly and listened to radio traffic at every opportunity. He tried to pass the Novice License Test, but fails at CW proficiency. In 1923 at age 10, Robert Marx succeeds in passing the test and is officially the youngest person at that point in history to be licensed as an amateur radio operator. His cherished call sign is 2AKZ.

Continued on Page 17

Ham Hero Stories, continued from page 16

Bob Green says that Robert was “the youngest operator in that period of time representing the Ham radio world when it was blooming. A few years older than Robert, a young man named John Freisinger, who was a photographer and Ham—2ABT, was in residence in the same apartment building. He was asked by the Marx family to be young Robert’s Elmer, to which Freisinger agreed. As you can see from the QSL card design (image below), John Freisinger was also a creator of the nifty [card] that Robert mailed out faithfully to the gang who collected them. At one point Freisinger 2ABT was known to have the most elaborate of station equipment in the East. No expense was spared on his elaborate setup it was said.”



15 year-old Robert J Marx’s QSL Card from 1928 Photo Credit: www.oldqslcards.com

Robert gathered together equipment from various sources and built his own ham shack. He then spent his evenings communicating with radio operators all over the world, including U.S. Navy Ships. When he was 12 years old, a group of U.S. sailors showed up at his family’s doorstep to spend time with their radio pal while they were in port. In all the enjoyable, witty communications they had with Robert, they did not realize their good friend was a still a child.

In 1926, when Robert was 13 years old, his undivided attention turned to his radio in the midst of a terrible storm pounding the eastern United States. Telephone lines lashed by hurricanes were down and time was of the essence to find stranded people and save them.

Alone in his shack, Robert hears a Florida family’s distress call. They are desperately trapped and struggling for their lives. Without hesitation, Robert J. Marx expertly relays the crucial information to facilitate their rescue and saves the entire family.

Robert J Marx was bigger than life before he was even full-grown. That is why his daughter, children’s book author Lynn Barasch wrote a book called *Radio Rescue*, first released in October 2000. It is well-praised by teachers, parents and children as a fascinating read about a boy who learned & operated in Morse code at the dawn of “world wide communication” — long before the internet. Barasch worked with her father to transcribe a few of the stories of his many boyhood adventures in the early era of amateur radio communication. The book is written in first person, from young Robert’s “voice” narrating his story. People remark that this makes it especially well-crafted and enjoyable for children to read, child-to-child, as it were.

This lovely book is still available on Amazon as a hard cover for only \$5.95. Though “Yours Truly” has not yet read it to date, from all accounts, it is a gem, and highly recommended to teach young children about early communication, even perhaps interesting them in ham radio.

If you do go to Amazon to look at the book, take time to read some of the comments. Scroll down a bit and you’ll see an entry by one “Robert J. Marx” on November 10, 2000. He said:

[5.0 out of 5 stars great book i am the subject of this book](#)

Reviewed in Canada on November 10, 2000

Mostly true and faithful recording of my very younger days as a teenager with the wireless age at my fingertips. I am still completely fluent in Morse code as I learned it at age10 and up..the book went to press before we could include details about Admiral Byrd’s first expedition to south pole.. helped with that one too ..NY Times bldg on 43 St had a ham set that couldn’t reach Byrd. I could at 2AZK. Regards from RJMarx bobolane1

Regards, indeed Mr. Marx. Thanks for paving the way in inspiration and determination for generations to come. ★





Contest Calendar - August 2022

<u>+ K1USN Slow Speed Test</u>	0000Z-0100Z, Aug 1
<u>+ ICWC Medium Speed Test</u>	1300Z-1400Z, Aug 1
<u>+ OK1WC Memorial</u>	1630Z-1729Z, Aug 1
<u>+ ICWC Medium Speed Test</u>	1900Z-2000Z, Aug 1
<u>+ ARS Spartan Sprint</u>	0100Z-0300Z, Aug 2
<u>+ Worldwide Sideband Activity Contest</u>	0100Z-0159Z, Aug 2
<u>+ ICWC Medium Speed Test</u>	0300Z-0400Z, Aug 2
<u>+ RTTYOPS Weeksprint</u>	1700Z-1900Z, Aug 2
<u>+ Phone Weekly Test</u>	0230Z-0300Z, Aug 3
<u>+ A1Club AWT</u>	1200Z-1300Z, Aug 3
<u>+ CWops Test</u>	1300Z-1400Z, Aug 3
<u>+ Mini-Test 40</u>	1700Z-1759Z, Aug 3
<u>+ Mini-Test 80</u>	1800Z-1859Z, Aug 3
<u>+ CWops Test</u>	1900Z-2000Z, Aug 3
<u>+ Walk for the Bacon QRP Contest</u>	0000Z-0100Z, Aug 4 and 0200Z-0300Z, Aug 5
<u>+ CWops Test</u>	0300Z-0400Z, Aug 4
<u>+ CWops Test</u>	0700Z-0800Z, Aug 4
<u>+ RTTYOPS Weeksprint</u>	1700Z-1900Z, Aug 4
<u>+ NRAU 10m Activity Contest</u>	1700Z-1800Z, Aug 4 (CW) and 1800Z-1900Z, Aug 4 (SSB) and 1900Z-2000Z, Aug 4 (FM) and 2000Z-2100Z, Aug 4 (Dig)
<u>+ SKCC Sprint Europe</u>	1900Z-2100Z, Aug 4
<u>+ QRP Fox Hunt</u>	0100Z-0230Z, Aug 5
<u>+ NCCC RTTY Sprint</u>	0145Z-0215Z, Aug 5
<u>+ NCCC Sprint</u>	0230Z-0300Z, Aug 5
<u>+ K1USN Slow Speed Test</u>	2000Z-2100Z, Aug 5
<u>+ Batavia FT8 Contest</u>	0000Z, Aug 6 to 2359Z, Aug 7

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Contest Calendar - August 2022, Continued

<u>+ 10-10 Int. Summer Contest, SSB</u>	0001Z, Aug 6 to 2359Z, Aug 7
<u>+ European HF Championship</u>	Cancelled for 2022
<u>+ NRRL MGM Weekend Contest</u>	1400Z, Aug 6 to 1400Z, Aug 7
<u>+ North American QSO Party, CW</u>	1800Z, Aug 6 to 0559Z, Aug 7
<u>+ ARRL 222 MHz and Up Distance Contest</u>	1800Z, Aug 6 to 1800Z, Aug 7
<u>+ SARL HF Phone Contest</u>	1400Z-1700Z, Aug 7
<u>+ K1USN Slow Speed Test</u>	0000Z-0100Z, Aug 8
<u>+ ICWC Medium Speed Test</u>	1300Z-1400Z, Aug 8
<u>+ OK1WC Memorial</u>	1630Z-1729Z, Aug 8
<u>+ ICWC Medium Speed Test</u>	1900Z-2000Z, Aug 8
<u>+ Worldwide Sideband Activity Contest</u>	0100Z-0159Z, Aug 9
<u>+ ICWC Medium Speed Test</u>	0300Z-0400Z, Aug 9
<u>+ RTTYOPS Weeksprint</u>	1700Z-1900Z, Aug 9
<u>+ NAQCC CW Sprint</u>	0030Z-0230Z, Aug 10
<u>+ Phone Weekly Test</u>	0230Z-0300Z, Aug 10
<u>+ A1Club AWT</u>	1200Z-1300Z, Aug 10
<u>+ CWops Test</u>	1300Z-1400Z, Aug 10
<u>+ Mini-Test 40</u>	1700Z-1759Z, Aug 10
<u>+ VHF-UHF FT8 Activity Contest</u>	1700Z-2000Z, Aug 10
<u>+ Mini-Test 80</u>	1800Z-1859Z, Aug 10
<u>+ CWops Test</u>	1900Z-2000Z, Aug 10
<u>+ CWops Test</u>	0300Z-0400Z, Aug 11
<u>+ CWops Test</u>	0700Z-0800Z, Aug 11
<u>+ RTTYOPS Weeksprint</u>	1700Z-1900Z, Aug 11
<u>+ EACW Meeting</u>	1900Z-2000Z, Aug 11
<u>+ QRP Fox Hunt</u>	0100Z-0230Z, Aug 12
<u>+ NCCC RTTY Sprint</u>	0145Z-0215Z, Aug 12
<u>+ NCCC Sprint</u>	0230Z-0300Z, Aug 12
<u>+ North American Meteor Scatter Sprint</u>	1500Z, Aug 12 to 1459Z, Aug 14

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Contest Calendar - August 2022, Continued

<u>+ MMonVHF/DUBUS 144 MHz Meteorscatter Sprint Contest</u>	1500Z, Aug 12 to 1459Z, Aug 14
<u>+ K1USN Slow Speed Test</u>	2000Z-2100Z, Aug 12
<u>+ WAE DX Contest, CW</u>	0000Z, Aug 13 to 2359Z, Aug 14
<u>+ SARL Youth Sprint</u>	1200Z-1300Z, Aug 13
<u>+ Keyman's Club of Japan Contest</u>	1200Z, Aug 13 to 1200Z, Aug 14
<u>+ SKCC Weekend Sprintathon</u>	1200Z, Aug 13 to 2400Z, Aug 14
<u>+ Kentucky State Parks on the Air</u>	1400Z-2200Z, Aug 13
<u>+ Maryland-DC QSO Party</u>	1400Z, Aug 13 to 0400Z, Aug 14
<u>+ FISTS Saturday Sprint</u>	1600Z-1800Z, Aug 13
<u>+ 50 MHz Fall Sprint</u>	2300Z, Aug 13 to 0300Z, Aug 14
<u>+ 4 States QRP Group Second Sunday Sprint</u>	0000Z-0200Z, Aug 15
<u>+ K1USN Slow Speed Test</u>	0000Z-0100Z, Aug 15
<u>+ ICWC Medium Speed Test</u>	1300Z-1400Z, Aug 15
<u>+ OK1WC Memorial</u>	1630Z-1729Z, Aug 15
<u>+ ICWC Medium Speed Test</u>	1900Z-2000Z, Aug 15
<u>+ Worldwide Sideband Activity Contest</u>	0100Z-0159Z, Aug 16
<u>+ ICWC Medium Speed Test</u>	0300Z-0400Z, Aug 16
<u>+ RTTYOPS Weeksprint</u>	1700Z-1900Z, Aug 16
<u>+ Phone Weekly Test</u>	0230Z-0300Z, Aug 17
<u>+ A1Club AWT</u>	1200Z-1300Z, Aug 17
<u>+ CWops Test</u>	1300Z-1400Z, Aug 17
<u>+ Mini-Test 40</u>	1700Z-1759Z, Aug 17
<u>+ VHF-UHF FT8 Activity Contest</u>	1700Z-2000Z, Aug 17
<u>+ Mini-Test 80</u>	1800Z-1859Z, Aug 17
<u>+ CWops Test</u>	1900Z-2000Z, Aug 17
<u>+ Walk for the Bacon QRP Contest</u>	0000Z-0100Z, Aug 18 and 0200Z-0300Z, Aug 19
<u>+ CWops Test</u>	0300Z-0400Z, Aug 18

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Contest Calendar - August 2022, Continued

<u>+ CWops Test</u>	0700Z-0800Z, Aug 18
<u>+ RTTYOPS Weeksprint</u>	1700Z-1900Z, Aug 18
<u>+ NTC QSO Party</u>	1900Z-2000Z, Aug 18
<u>+ QRP Fox Hunt</u>	0100Z-0230Z, Aug 19
<u>+ NCCC RTTY Sprint</u>	0145Z-0215Z, Aug 19
<u>+ NCCC Sprint</u>	0230Z-0300Z, Aug 19
<u>+ K1USN Slow Speed Test</u>	2000Z-2100Z, Aug 19
<u>+ SARTG WW RTTY Contest</u>	0000Z-0800Z, Aug 20 and 1600Z-2400Z, Aug 20 and 0800Z-1600Z, Aug 21
<u>+ ARRL 10 GHz and Up Contest</u>	0600 local, Aug 20 to 2400 Aug 21
<u>+ Russian District Award Contest</u>	0800Z, Aug 20 to 0800Z, Aug 21
<u>+ Feld Hell Sprint</u>	1600Z-1759Z, Aug 20
<u>+ North American QSO Party, SSB</u>	1800Z, Aug 20 to 0559Z, Aug 21
<u>+ CVA DX Contest, CW</u>	2100Z, Aug 20 to 2100Z, Aug 21
<u>+ SARL HF Digital Contest</u>	1400Z-1700Z, Aug 21
<u>+ NJQRP Skeeter Hunt</u>	1700Z-2100Z, Aug 21
<u>+ ARRL Rookie Roundup, RTTY</u>	1800Z-2359Z, Aug 21
<u>+ FISTS Sunday Sprint</u>	2100Z-2300Z, Aug 21
<u>+ Run for the Bacon QRP Contest</u>	2300Z, Aug 21 to 0100Z, Aug 22
<u>+ K1USN Slow Speed Test</u>	0000Z-0100Z, Aug 22
<u>+ ICWC Medium Speed Test</u>	1300Z-1400Z, Aug 22
<u>+ OK1WC Memorial</u>	1630Z-1729Z, Aug 22
<u>+ ICWC Medium Speed Test</u>	1900Z-2000Z, Aug 22
<u>+ Worldwide Sideband Activity Contest</u>	0100Z-0159Z, Aug 23
<u>+ ICWC Medium Speed Test</u>	0300Z-0400Z, Aug 23
<u>+ RTTYOPS Weeksprint</u>	1700Z-1900Z, Aug 23
<u>+ SKCC Sprint</u>	0000Z-0200Z, Aug 24

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Contest Calendar - August 2022, Continued

<u>+ Phone Weekly Test</u>	0230Z-0300Z, Aug 24
<u>+ A1Club AWT</u>	1200Z-1300Z, Aug 24
<u>+ CWops Test</u>	1300Z-1400Z, Aug 24
<u>+ Mini-Test 40</u>	1700Z-1759Z, Aug 24
<u>+ Mini-Test 80</u>	1800Z-1859Z, Aug 24
<u>+ CWops Test</u>	1900Z-2000Z, Aug 24
<u>+ CWops Test</u>	0300Z-0400Z, Aug 25
<u>+ CWops Test</u>	0700Z-0800Z, Aug 25
<u>+ RTTYOPS Weeksprint</u>	1700Z-1900Z, Aug 25
<u>+ QRP Fox Hunt</u>	0100Z-0230Z, Aug 26
<u>+ NCCC RTTY Sprint</u>	0145Z-0215Z, Aug 26
<u>+ NCCC Sprint</u>	0230Z-0300Z, Aug 26
<u>+ K1USN Slow Speed Test</u>	2000Z-2100Z, Aug 26
<u>+ RTTYOps WW DX RTTY Contest</u>	2200Z, Aug 26 to 1200Z, Aug 27 and 1200Z-2359Z, Aug 28
<u>+ ARRL EME Contest</u>	0000Z, Aug 27 to 2359Z, Aug 28
<u>+ Hawaii QSO Party</u>	0400Z, Aug 27 to 0400Z, Aug 29
<u>+ ALARA Contest</u>	0600Z Aug 27 to 0559Z, Aug 28
<u>+ World Wide Digi DX Contest</u>	1200Z, Aug 27 to 1200Z, Aug 28
<u>+ W/VE Islands QSO Party</u>	1200Z, Aug 27 to 0300Z, Aug 28
<u>+ YO DX HF Contest</u>	1200Z, Aug 27 to 1200Z, Aug 28
<u>+ Kansas QSO Party</u>	1400Z, Aug 27 to 0200Z, Aug 28 and 1400Z-2000Z, Aug 28
<u>+ Ohio QSO Party</u>	1600Z, Aug 27 to 0400Z, Aug 28
<u>+ CVA DX Contest, SSB</u>	2100Z, Aug 27 to 2100Z, Aug 28
<u>+ SARL HF CW Contest</u>	1400Z-1700Z, Aug 28
<u>+ K1USN Slow Speed Test</u>	0000Z-0100Z, Aug 29
<u>+ ICWC Medium Speed Test</u>	1300Z-1400Z, Aug 29

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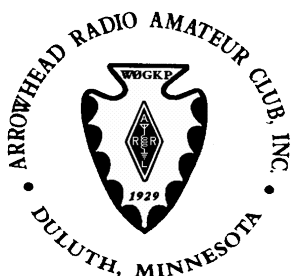
Contest Calendar - August 2022, Continued

<u>+ QCX Challenge</u>	1300Z-1400Z, Aug 29
<u>+ OK1WC Memorial</u>	1630Z-1729Z, Aug 29
<u>+ ICWC Medium Speed Test</u>	1900Z-2000Z, Aug 29
<u>+ QCX Challenge</u>	1900Z-2000Z, Aug 29
<u>+ Worldwide Sideband Activity Contest</u>	0100Z-0159Z, Aug 30
<u>+ QCX Challenge</u>	0300Z-0400Z, Aug 30
<u>+ ICWC Medium Speed Test</u>	0300Z-0400Z, Aug 30
<u>+ RTTYOPS Weeksprint</u>	1700Z-1900Z, Aug 30
<u>+ Phone Weekly Test</u>	0230Z-0300Z, Aug 31
<u>+ A1Club AWT</u>	1200Z-1300Z, Aug 31
<u>+ CWops Test</u>	1300Z-1400Z, Aug 31
<u>+ Mini-Test 40</u>	1700Z-1759Z, Aug 31
<u>+ Mini-Test 80</u>	1800Z-1859Z, Aug 31
<u>+ CWops Test</u>	1900Z-2000Z, Aug 31

Our thanks to **Bruce Horn, WA7BNM** for use of this calendar!

Visit Bruce at www.contestcalendar.com/contestcal.html

The ARAC RELAY



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