



The RELAY)))

JULY
2020

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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Our Fireworks Tradition: America Celebrates Freedom

With Duluth's Fourth Fest "postponed" until Labor Day on September 7th (wait, what? We're still calling it Fourth Fest but actually rescheduling to the 7th?), families are planning to celebrate Independence Day this year, well, *independently*.

The joy of seeing fireworks, a long-time American celebratory tradition, might mean even more to us this difficult year. Off we go to our local retailer to purchase the brightly colored, enticing packages that promise to delight us with all the familiar "oos and ahs" that we remember when life seemed so much simpler.

The American Pyrotechnics Association has a nice article this month that touches on the history of fireworks from the second century B.C. in China. Check it out at <https://www.americanpyro.com/history-of-fireworks>

They mentioned that most likely the idea of fireworks began when bamboo stalks were thrown into a fire and due to the expanding hollow air pockets they would explode with loud bangs.

It is believed that a mix of potassium nitrate, sulfur and charcoal that resulted in the black powder that was the first known gun powder. Apparently the idea of pouring this powder into bamboo sticks to create even louder bangs than the natural phenomenon occurred to someone, eventually followed by the use of paper tubes instead of bamboo.

Europeans began using some version of fireworks in the 13th century, which evolved into use for public celebrations. This tradition followed



"Betsy Ross" American Flag from 1776, with 13 stars & stripes for the 13 colonies.

across the Atlantic to the "new world" that became the United States. In fact, fireworks were used to celebrate our very first Independence Day upon signing the Declaration of Independence on July 4, 1776.

John Adams, one of the

Continued on page 14



Summer 2020



Join us on
facebook!

Co-Editors:

Kim & Steve Waller

Kim - KEØNQS ● Steve - KEØNQT

KEØNQS.mn@gmail.com
KEØNQT@gmail.com

ARAC Board Meeting Minutes – June 2 2020

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



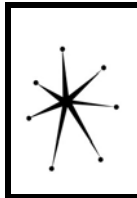
NØCALL
Robin Davis
218-391-3Ø77
davisfam2858@yahoo.com

TREASURER



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

3RD YEAR BOARD



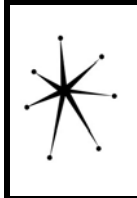
KD9ABS
Gary Minter
1621 N 26th St
Superior WI 5488Ø

2ND YEAR BOARD



AAØAC
Dave Davis
218-348-6649
aaØac@outlook.com

1ST YEAR BOARD



Open Seat

Present: Gene Ellefsen-NØVRM, Mike Lovold-NØPDG, Bruce Carlson-KEØNIT, Gary Minter-KD9ABS, Doug Nelson-AAØAW, Randy Wabik-KRØB, Bob Schultz-KCØNFB

Guest: Randy Johnson-AAØME

Meeting called to order at 6:31 pm via Zoom by President Gene-NØVRM

Minutes:

Posted in newsletter and on the web page. Motion to accept by Dave-AAØAC, seconded by Gary-KD9ABS, motion passed

Treasurer's Report:

Checking	1,143.67
Savings	1,373.40
Cash Subtotal.....	\$2,517.07
Outstanding Check (Repeater # 1414)....	-1,100.00
Winter CD	1,714.03
Summer CD	1,700.00
CD Subtotal.....	\$3,414.03
Grand Total	\$4,831.10

Not a lot of activity due in part to the COVID-19 Shelter in Place. There were two (2) deposits and one (1) check for details. Gene-NØVRM was at the Post office and the only thing was a notice for the PO Box rental, which he believes was paid. Confirmed payment by Bruce-KEØNIT. Motion to accept by Gary-KD9ABS, seconded by Mike-NØPDG, motion passed

Committee Reports:

Testing:

There will be a Test Session one week from tonight, June 9, 2020, at House of Refuge, registration 5:30 pm, testing at 6:00 pm. Limit number of folks that will be testing. It has been announced on the nets. We held a test session last Tuesday, May 26, 2020. One was at 1:00 pm and the second one at 5:00 pm. We gained three (3) Ham Radio Operators. We are following the recommended guidelines with hand sanitizer, masks and social distancing

Donation – Church Rental:

Normally we pay the church two (2) donations a year, one in December and one in June. Bruce-KEØNIT thinks we should continue with the \$150.00 donation for June. Motion by Bruce-KEØNIT that the Board authorize the payment even though we couldn't met there due to the COVID-19 pandemic. Seconded by Gene-NØVRM. Bruce-KEØNIT will make the payment in June, middle of the month and drop it off at the church. Not much for expenses. May not be able to have the picnic - more to come.

Board Seat:

We need to get a replacement on the board for Bob Boyd-KDØLYN. Board can appointment.

ARAC Bylaws - Section 4 (Gene-NØVRM) reads the Bylaw, while Bob-KCØNFB read it over Zoom meeting. Anyone have a nomination? AAØAC nominated AAØME, seconded by Mike-NØPDG and Gary-KD9ABS. Randy Johnson-AAØME accepted pending Club approval

Continued on page 3

ARAC Board Meeting Minutes – Continued from page 2

Education:

Fallen out of use until the fall. They are self-studying. Directed them to the online testing on the ARRL Web Page. They have been instructed when they are ready to test to email Bob-KB0NFB and he will let Doug-AA0AW know

Newsletter:

Correct for the newsletter - Brainerd is the Tailgate Ham Fest, on August 28, 2020, not a Ham Fest

Ham Fest:

Looking for more tables. John and Cliff are looking - availability and cost? John has people available to help with the kitchen. Other option would be invite a food truck. Mid-Winter Madness was cancelled for this year. We have a chance to be the biggest Ham Fest in the State. No new reservations for tables. Only fifteen (15) tables are reserved. Believe people are waiting to see if it will happen. This is a larger venue. Suggestion to announce we have a larger venue on the web page and on the Facebook page. People can post it on their Facebook pages, individually, to promote our Ham Fest in the fall

Web Page:

Not all the PDFs are accessible on the web page at this time, assuming something was changed. Gene-N0VRM will contact Thomas Dorr-KE0RHA

Repeater:

No update. Randy-KR0B did talk to Randy Haglin-N0BZZ today and he has fifteen (15) projects and he is sixteen (16) projects behind

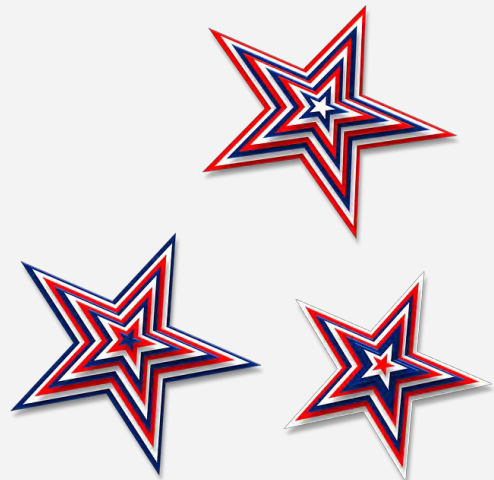
Programs:

Having some problems with his computer so Mike-N0PDG needs help with a program for June. Any suggestions? What was he planning to do? Bob-KC0NFB will think about some kind of trivia game

Any other business?

Motion to adjourn by Bruce-KE0NIT, Robin seconded, motion passed at 6:50 pm

Thank you to Kim Waller-KE0NQS for setting this up (Zoom)





ARAC Club Meeting Minutes

June 11, 2020

Present:

President Gene Ellefsen-N0VRM
Treasurer / Membership Bruce Carlson-KE0NIT
Secretary Robin Davis
Third Year Board Dave Davis-AA0AC
First Year Board Gary Minter-KD9ABS
Special Events – Open / Gene Ellefsen-N0VRM acting
Ham Fest / Education Bob Schultz-KC0NFB
Testing Doug Nelson-AA0AW

Absent:

Vice President Mike Lovold-N0PDG
Second Year Board Open
Chaplain (Visiting) Rolland Bockbrader-KB0CK
Parliamentarian Grant Forsyth-KC0WUP
Property / Picnic Scott Ahlgren-N0VYU
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 started at 7:00 pm

We have a silent key – Robert (Bob) Boyd-KD0LYN passed. Asking for a moment of silence to honor his passing

Minutes:

Posted in newsletter and on the web page. Motion to accept by Jeff Nast-KC0MKS, seconded by Gary-KD9ABS, any opposition? Consider it passed

Treasurer's Report:

Checking	1,143.67
Savings	1,373.40
Cash Subtotal.....	\$2,517.07
Outstanding Check (Repeater # 1414).....	-1,100.00
Winter CD.....	1,714.03
Summer CD.....	1,700.00
CD Subtotal.....	\$3,414.03
Grand Total	\$4,831.10

Any questions on Treasurer's Report? Motion to approve by Dave-AA0AC, seconded Tim Ferch-AK0TF, any opposed? Motion passed as presented

Committee Reports:

Picnic:

Our next event is probably the Annual Picnic. Right now, they have opened up some parks to the picnic. Chambers Grove is not open yet and they are not issuing new permits at this time. We already have our permit and we'll keep checking with the COD. Maybe they will bend for us by August 2, 2020, to allow our picnic

Education:

No updates other than we'll see how the ISD #709 Community Ed deals with classes in the fall. Planning for a Tech Class in September either at the church or via Zoom

Ham Fest:

Nothing new. Planned for last weekend in September. More information as the date comes closer. Keeping our fingers crossed. We are looking for door prizes when you are out shopping

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ARAC Club Meeting Minutes

Continued from Page 4

Testing:

Good test session last Tuesday, June 9, 2020. Six (6) candidates, with four (4) new Techs, two (2) upgrades to General. Next testing session is scheduled for June 23, 2020, 5:30 pm registration with 6:00 pm testing at House of Refuge. Already has two (2) candidates lined for the next session. Spread the word. Have them contact Doug-AA0AW to prepare for number of people coming to test. We are still respecting the Social Distancing during the test sessions

Field Day:

We cannot use the Spirit Mountain parking lot this year as they are closed. ARRL is asking people to operate from their homes, working as remotely as possible. Use a generator; plug in your radio and an antenna, operating from your back yard. We are good at adapting. Think of it as an emergency situation with no power, yet you need to communicate with the outside world. It's all about making contacts. Buddy up if you would like to, have fun, consider joining in for Field Day this year

If you hear a new ham on the Repeater, come back to them and make them feel welcome. They can be nervous first times on the mic and on the air

Old Business:

None

New Business:

Diane Saunders-K0DSL - thank you, Gene-N0VRM. In regards to the fall classes, since I will be moving, I can no longer running the General and Extra Study Groups. I want to encourage someone to step up who already has an Extra license. It would be a good service. Thank you, Diane-K0DSL. Best of luck in your new adventure in Florida

Any announcements? Any items for sale?

Brandon Ware-KE0ZDF – thank you for holding the Club meeting tonight and everyone who helped him to get his General license

Board Vacancy:

One of the board members being a silent key, we have a recommendation to fill the vacancy on the board, following our Bylaws. There is a recommendation for Randy Johnson-AA0ME to complete Bob-KD0LYN's term until the December elections. Does anyone have a recommendation or are interested in completing the rest of Bob-KD0LYN's term? Motion by Dave-AA0AC nominating Randy-AA0ME, Diane-K0DSL seconded, any discussion? KC0AFE thinks AA0ME would be a good addition to the Board. He would just filling out the remainder of Bob-KD0LYN's term, until December. Jeff-KC0MKS with a comment. I have no problem with his nomination but is he aware of the nomination and has he accepted this? Back to Dave-AA0AC, with a yes. At the Board meeting on the first Tuesday of month, Randy-AA0ME accepted at that meeting. No other name was put forward at that time. Just wanted to be sure he wouldn't be blind-sided, with a thank you from Jeff-KC0MKS. He's ex-Army; he's used to be voluntold. Any other recommendations? Question – Bob-KD0LYN was first year board, so one (1) year or two (2) years to complete the term on the Board? Gene-N0VRM said complete this year and elected with the remainder of the elections in December. Hearing no objections, Randy-AA0ME joins the ARAC Board

Hope everyone has a good weekend. Anything else any?

Tim-AK0TF has been looking for Bob-KD0LYN's Obituary in the local paper and hasn't found it. It wasn't in the Duluth Paper but an Obituary was posted on Facebook from the Funeral Home in Ohio by Mike-N0PDG. Check the ARAC Facebook page as it is posted there. His brother-in-law reached out to Mike-N0PDG and Bob-KD0LYN talked highly about the club. They appreciated how we included him in the Club. Gene-N0VRM has gone twice to the park to talk to the Manager without success. Hoping we can talk to his brother-in-law and sister when they come up to collect Bob-KD0LYN's belongings

Motion to adjourn by Randy-AA0ME, seconded by Gary-KD9ABS, anybody opposed? Motion passed at 7:26 pm

Bob-KC0NFB getting set up for the program tonight via Zoom. Access Meeting # 77916676857 password is ARAC (all caps). The program is a demonstration on an antenna analyzer

Arrowhead Radio Amateur Club **HAM FEST!**

Sat. Sept. 26, 2020 9:00am – 1:00pm

Four Seasons Sports Complex and Events Center

90 Chestnut Avenue Carlton, Mn. 55718

Under the water tower in downtown Carlton

Admission: \$7.00 (12 & under FREE!)

Used and like new radios, supplies, equipment, and computer related items including software and hardware! Personalized Ham items also available!

Yaesu Representative John N9UPC will be on site with new radio equipment displayed and for sale.

<<< QSL card checking for ARRL awards program by Mike Cizek W0VTT >>>

Mike's email: mgcizek@gmail.com



This is an A.R.R.L. sanctioned event.

Talk-in on W0GKP Repeater:
146.940(-) [103.5] Duluth
147.000(-) [103.5] Mahtowa
146.940(-) [114.8] 2-Harbors

Testing on site!

10:00 AM 4-H Building
Contact: Doug Nelson
AA0AW / 218-391-5874
aa0aw@arrl.net

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Dealer / Vendor Tables:
4 foot table: \$5.00
8 foot table: \$10.00
Vendor setup starts at: 7:00am

Table Reservations:

Robert Schulz, KC0NFB
115 Eden Lane
Duluth, MN 55805-1533
218-481-7458
arac_hamfest@charter.net

Hourly Drawings!

NETS

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, July 7, 2020
@ 6:30 p.m.

**via conference call; Board Members will be informed of the call-in number*

Next ARAC Club Meeting

Thursday, July 9, 2020
7 p.m.

on the **94 Repeater**

Tune into the
Sunday night ES Net
on **July 6th at 9:00 p.m.** for
more information on access-
ing the program portion of
the meeting as a webinar.

July Program

John Kruk of **Yaesu**

*Interested in providing a pro-
gram, or have an idea for one?
Contact Mike NØPDG at
lovoldm@gmail.com*

CLUB REPEATER
WØGKP

146.94 (-)
CTCSS TONE
103.5

Thanks to **Diane Saunders**
KØDSL for her many years
dedicated to **ARAC!**

Let's gather to show our ap-
preciation as a Club and help
pack her truck for her
upcoming move!

Free Pizza Lunch with sodas
and water **for all who help**

Date: July 28th
Time: 10:00 hours

Address:
1321 E 1st St, at the corner of
East 1st Street and 14th
Avenue East in Duluth

Questions? Contact:
Diane Saunders
KØDSL

k0dslae@gmail.com
763-807-8772

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

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

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
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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.

Name	Call	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...

Membership E-mail Directory

Ahlgren, Scott NØVYU
sahlgren01@msn.com
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kcØmko@centurylink.net
Anway, Allen KC9LJN
allen@a2d2.com
Anway, Dorothy KC9LSG
dorothy@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
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eddalymn@aol.com
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Co-Editors,
Kim & Steve Waller
KEØNQS & KEØNQT





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

JULY

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 2100 - BWAR	2	3	4 
5 CW 1930 NØPDG USB 2000 WØDIO ES 2100 AAØAW	6 WX 2000 KCØMKS	7 ARAC BOARD MEETING Via conference call DC Net 2000 CC Net 2030	8 Lake County ARES/RACES Meeting 1800 Lake County Net 1900 2100 - BWAR	9  ARAC Club Meeting 94 Repeater 7 pm	10	11 Eugene Curnow Half Voyage Race
12 CW 1930 AAØAW USB 2000 NØVRM ES 2100 KCØWDQ	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
19 CW 1930 NØPDG USB 2000 NØPDG ES 2100 WØNWO	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 Club Breakfast @ The Chalet 0800-0900
26 CW 1930 AAØAW USB 2000 AAØAW ES 2100 NØVRM	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,
July 9, 2020 - 7 pm
On the 94 Repeater

ARAC Committee Chairs



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AAØAW - NØKXT - KCØNFB

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Waller

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Doug Nelson AAØAW

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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.

founding fathers & drafters of the Declaration, as well as our second President, wrote his wife and trusted advisor Abigail following the signing of the document. He said, "I am apt to believe that [this day] will be celebrated by succeeding generations as the great anniversary festival... It ought to be solemnized with bonfires and illuminations from one end of this continent to the other, from this time forward forever more." "Illuminations" was the term used for fireworks, and so began the American tradition that came to be a celebration our hard-fought freedom, in the words of the Declaration, our right to "life, liberty and the pursuit of happiness."



Abigail & John Adams

Well that was 244 years ago, and John Adams was absolutely right. Fireworks have been used ever since to mark the birth of a nation that is unlike any other place on earth.

Through wars, depressions, earthquakes, floods, and pandemics, the tradition has continued. In fact, it is especially important to celebrate Independence Day through the difficult times, because when we reflect upon all that we've been through as a country, whether fighting other nations, fighting each other, fighting terror attacks, fighting natural disasters, or fighting disease, one thing is true about America: We're fighters and we fight to win. We **will** get through this difficult year and pull together again, coming through this turbulent time stronger than ever before.

So get those sizzling spinners, fountain cones, snakes and sparklers. Gather your family and celebrate. Reflect with gratitude on the generations before us who sacrificed so that America can stand in freedom, now and forever. ★

What Fireworks can I have in MINNESOTA?

"Consumer" fireworks that are allowed:

- Wire or wood **sparklers** of not more than 100 grams of pyrotechnic composition per item.
- **Ground-based sparkling devices** which are non-explosive and non-aerial, and contain 75 grams or less of chemical mixture per tube or a total of 500 grams or less for multiple tube items and include:
- **fountains, cones, illuminating torches, wheels, ground spinners, flitter sparklers, flash / strobes, and novelty devices including snakes, glow worms, trick noisemakers, party poppers, and snappers.**

Age to purchase: 18 years

Fireworks Specifically prohibited:

Firecrackers, torpedoes, missiles, skyrockets, bottle rockets, roman candles, daygo bombs, mines and shells, chasers, and parachutes.



Contest Calendar - July 2020

<u>± RAC Canada Day Contest</u>	0000Z-2359Z, Jul 1
<u>± Phone Fray</u>	0230Z-0300Z, Jul 1
<u>± CWops Mini-CWT Test</u>	1300Z-1400Z, Jul 1
<u>± VHF-UHF FT8 Activity Contest</u>	1700Z-2000Z, Jul 1
<u>± CWops Mini-CWT Test</u>	1900Z-2000Z, Jul 1
<u>± CWops Mini-CWT Test</u>	0300Z-0400Z, Jul 2
<u>± RTTYOPS Weeksprint</u>	1700Z-1900Z, Jul 2
<u>± NRAU 10m Activity Contest</u>	1800Z-1900Z, Jul 2 (CW) and 1900Z-2000Z, Jul 2 (SSB) and 2000Z-2100Z, Jul 2 (FM) and 2100Z-2200Z, Jul 2 (Dig)
<u>± SKCC Sprint Europe</u>	1900Z-2100Z, Jul 2
<u>± QRP Fox Hunt</u>	0100Z-0230Z, Jul 3
<u>± NCCC RTTY Sprint</u>	0145Z-0215Z, Jul 3
<u>± NCCC Sprint</u>	0230Z-0300Z, Jul 3
<u>± FISTS Summer Slow Speed Sprint</u>	0000Z-0400Z, Jul 4
<u>± YBDXC 80m Contest</u>	0900Z, Jul 4 to 0859Z, Jul 5
<u>± DL-DX RTTY Contest</u>	1100Z, Jul 4 to 1059Z, Jul 5
<u>± Marconi Memorial HF Contest</u>	1400Z, Jul 4 to 1400Z, Jul 5
<u>± Original QRP Contest</u>	1500Z, Jul 4 to 1500Z, Jul 5
<u>± PODXS 070 Club 40m Firecracker Sprint</u>	2000Z, Jul 4 to 2000Z, Jul 5
<u>± RSGB 80m Club Championship, CW</u>	1900Z-2030Z, Jul 6
<u>± Worldwide Sideband Activity Contest</u>	0100Z-0159Z, Jul 7
<u>± ARS Spartan Sprint</u>	0100Z-0300Z, Jul 7
<u>± RTTYOPS Weeksprint</u>	1700Z-1900Z, Jul 7
<u>± Phone Fray</u>	0230Z-0300Z, Jul 8
<u>± CWops Mini-CWT Test</u>	1300Z-1400Z, Jul 8
<u>± VHF-UHF FT8 Activity Contest</u>	1700Z-2000Z, Jul 8
<u>± CWops Mini-CWT Test</u>	1900Z-2000Z, Jul 8
<u>± CWops Mini-CWT Test</u>	0300Z-0400Z, Jul 9
<u>± RTTYOPS Weeksprint</u>	1700Z-1900Z, Jul 9
<u>± QRP Fox Hunt</u>	0100Z-0230Z, Jul 10
<u>± NCCC RTTY Sprint</u>	0145Z-0215Z, Jul 10
<u>± NCCC Sprint</u>	0230Z-0300Z, Jul 10
<u>± FISTS Summer Unlimited Sprint</u>	0000Z-0400Z, Jul 11

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Contest Calendar - July 2020

Continued from Page 15

<u>+</u> IARU HF World Championship	1200Z, Jul 11 to 1200Z, Jul 12
<u>+</u> SKCC Weekend Sprintathon	1200Z, Jul 11 to 2400Z, Jul 12
<u>+</u> QRP ARCI Summer Homebrew Sprint	2000Z-2300Z, Jul 12
<u>+</u> 4 States QRP Group Second Sunday Sprint	0000Z-0200Z, Jul 13
<u>+</u> Worldwide Sideband Activity Contest	0100Z-0159Z, Jul 14
<u>+</u> RTTYOPS Weeksprint	1700Z-1900Z, Jul 14
<u>+</u> Phone Fray	0230Z-0300Z, Jul 15
<u>+</u> CWops Mini-CWT Test	1300Z-1400Z, Jul 15
<u>+</u> CWops Mini-CWT Test	1900Z-2000Z, Jul 15
<u>+</u> RSGB 80m Club Championship, SSB	1900Z-2030Z, Jul 15
<u>+</u> NAQCC CW Sprint	0030Z-0230Z, Jul 16
<u>+</u> CWops Mini-CWT Test	0300Z-0400Z, Jul 16
<u>+</u> RTTYOPS Weeksprint	1700Z-1900Z, Jul 16
<u>+</u> QRP Fox Hunt	0100Z-0230Z, Jul 17
<u>+</u> NCCC RTTY Sprint	0145Z-0215Z, Jul 17
<u>+</u> NCCC Sprint	0230Z-0300Z, Jul 17
<u>+</u> Russian Radio Team Championship	0700Z-1459Z, Jul 18
<u>+</u> Trans-Tasman Low-Bands Challenge	0800Z-1400Z, Jul 18
<u>+</u> Feld Hell Sprint	1200Z-1359Z, Jul 18
<u>+</u> North American QSO Party, RTTY	1800Z, Jul 18 to 0559Z, Jul 19
<u>+</u> CQ Worldwide VHF Contest	1800Z, Jul 18 to 2100Z, Jul 19
<u>+</u> RSGB Low Power Contest	0900Z-1200Z and 1300Z-1600Z, Jul 19
<u>+</u> RTTYOPS Weekend Sprint	1600Z-1959Z, Jul 19
<u>+</u> CQC Great Colorado Gold Rush	2000Z-2159Z, Jul 19
<u>+</u> Run for the Bacon QRP Contest	2300Z, Jul 19 to 0100Z, Jul 20
<u>+</u> Worldwide Sideband Activity Contest	0100Z-0159Z, Jul 21
<u>+</u> RTTYOPS Weeksprint	1700Z-1900Z, Jul 21
<u>+</u> SKCC Sprint	0000Z-0200Z, Jul 22
<u>+</u> Phone Fray	0230Z-0300Z, Jul 22
<u>+</u> CWops Mini-CWT Test	1300Z-1400Z, Jul 22
<u>+</u> CWops Mini-CWT Test	1900Z-2000Z, Jul 22
<u>+</u> CWops Mini-CWT Test	0300Z-0400Z, Jul 23

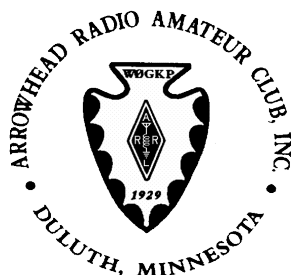
Continued on Page 17

Contest Calendar - July 2020

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+ RTTYOPS Weeksprint	1700Z-1900Z, Jul 23
+ RSGB 80m Club Championship, Data	1900Z-2030Z, Jul 23
+ QRP Fox Hunt	0100Z-0230Z, Jul 24
+ NCCC RTTY Sprint	0145Z-0215Z, Jul 24
+ NCCC Sprint	0230Z-0300Z, Jul 24
+ RSGB IOTA Contest	1200Z, Jul 25 to 1200Z, Jul 26
+ ARS Flight of the Bumblebees	1700Z-2100Z, Jul 26
+ QCX Challenge	1300Z-1400Z, Jul 27
+ RSGB FT4 Contest Series	1900Z-2030Z, Jul 27
+ QCX Challenge	1900Z-2000Z, Jul 27
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Jul 28
+ QCX Challenge	0300Z-0400Z, Jul 28
+ RTTYOPS Weeksprint	1700Z-1900Z, Jul 28
+ Phone Fray	0230Z-0300Z, Jul 29
+ CWops Mini-CWT Test	1300Z-1400Z, Jul 29
+ CWops Mini-CWT Test	1900Z-2000Z, Jul 29
+ CWops Mini-CWT Test	0300Z-0400Z, Jul 30
+ RTTYOPS Weeksprint	1700Z-1900Z, Jul 30
+ QRP Fox Hunt	0100Z-0230Z, Jul 31
+ NCCC RTTY Sprint	0145Z-0215Z, Jul 31
+ NCCC Sprint	0230Z-0300Z, Jul 31

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.

