



The RELAY)))

JUNE
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

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SUMMER 2021



Join us on
facebook!

Co-Editors:

Kim & Steve Waller

Kim - KEØNQS • Steve - KEØNQT

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Field Day Flashback

Eighty-six years ago, an experimental contest called Field Day was announced in a simple, one-column format of plain text in the June 1933 issue of QST with the headline of "International Field Day – June 10-11". Since 1915, the Amateur Radio Relay League published the journal, which ham radio enthusiasts eagerly embraced as the go-to source for the latest information on this captivating hobby. The International Field Day event plan was this: For 27 hours, beginning the second Saturday in June at 4 p.m., hams were to go into "the field" and set up portable stations.

A.R.R.L. Communications Manager Francis Edward Handy W1BDI, wrote this description:

"Clubs, 56-mc. Operators, all hams with licenses for portable stations, attention!! All U.S.A. and Canadian station owner are invited to schedule 'field activities', excursions with concentrated operation of portable transmitters and receivers. Only portable stations, actually in the field, away from the 'home' address are eligible to submit field day scores.

The object will be for each 'portable' station to work as many other amateur stations as possible—each to count one point toward a score. Any or all amateur frequency bands may be used, voice or c.w. telegraph likewise."

Addition scoring was explained. A credit would be given of 2 points for each contact with another portable station and 3 points for "two-way work with a foreign station. In addition, to which each foreign country prefix may be added to the number of Sections to increase the multiplier.

"All amateurs with licensed portable stations are invited to take part. Each such

station will please report its power and frequency band used, and its log of operation and score for the period given, within the week following Field Day."

Handy expressed his hope for this contest to be the beginning of a tradition by saying, "Besides offering an opportunity to



Francis Edward Handy, W1BDI QSO Card
1940 8th Annual ARRL Field Day

Continued on page 15

ARAC Board Meeting Minutes - May 4, 2021

PRESIDENT



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

VICE PRESIDENT



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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

ARAC Board Meeting:

Due to lack of a quorum at the 05.04.2021 Board Meeting and the absence of Secretary Robin Davis, there are no minutes from the Board Meeting. However, Bruce Carlson-KNONUL submitted the following:

Treasurer's Report:

Checking 743.82
Savings 673.89
Subtotal Cash \$1,417.71

Winter CD..... 1,724.37
Summer CD 0.00
Subtotal CD \$1,724.37

Assets Subtotal:..... \$3,142.48

Outstanding Checks:
Mahtowa Repeater -1,100.00
Bob Boyd-KDØLYN Memorial -1,140.00
Reserved Funds -\$2,240.00

Grand Total..... \$902.08

Respectfully submitted by Bruce Carlson-KNONUL

Also:

Grandma's Marathon:

Doug Nelson-AAØAW reported the Marathon is being held, in a modified format, with limited numbers and some additional changes. Doug-AAØAW, Scott Ahlgren-NØBYU and Jeff Nast-KCØMKS have met with the Grandma's Race Community in the planning stages of the race





ARAC Club Meeting Minutes

May 13, 2021

ARAC General Membership Meeting:

Again, due to the lack of a quorum on 05.13.2021 and the absence of Secretary Rob-in Davis for the on air General Membership meeting the minutes are abbreviated

Treasurer's Report:

Checking..... 743.82
Savings..... 673.89
Subtotal Cash..... \$1,417.71

Winter CD 1,724.37
Summer CD 0.00
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Outstanding Checks:

Mahtowa Repeater -1,100.00
Bob Boyd-KD0LYN Memorial -1,140.00
Reserved Funds -\$2,240.00

Grand Total \$902.08

Respectfully submitted by Bruce Carlson-KN0NUL. Grant Forsyth-KC0WUP approved the Treasurer's Report as present with Jeff Nast-KC0MKS seconding

Grandma's Marathon:

Doug Nelson-AA0AW reported the Marathon is being held, in a modified format, with limited numbers and some additional changes. Doug-AA0AW, Scott Ahlgren-N0BYU and Jeff Nast-KC0MKS have met with the Grandma's Race Community in the planning stages of the race

Motion to adjourn by Grant Forsyth-KC0WUP, seconded by Ronald Caspersen-KB0UQC, over the air



Prez Sez...

Good News!

We can start meeting at the Copper Top Church again starting with the June 10th meeting. This will be the Grandma's Marathon meeting, so if you are volunteering for the Marathon please make every effort to attend so you can get your info packet. The Church does require us to wear masks.

Hamfest was a great success! We got a lot of good feedback from those that attended !!

Prize winners were:

Icom 718	Paula Persons	WØHA	Brainerd MN
Yaesu Dual Band	Peter Winters	NØRUG	Golden Valley MN
\$50 DX Engineering	Jerry Dufeck	WBØOZJ	Shoreview MN
\$50 ARRL	Mark Soder	KIØDB	Duluth
\$50 ARRL	Rich Staupe	KC9PTP	Superior WI
\$50 HRO	Dave Burt		Barnum MN
\$50 HRO	David Quick	KØEKL	Ely MN

Thank you to all those who volunteered to help out at Hamfest this year!!

73 Gene Ellefsen NØVRM

Icom 718 WINNER



It was a great surprise to win the ICOM IC-718 HF Transceiver at the May 1st ARAC Hamfest. I was remarking to my husband Mark WØMH that it had been a long time since we won anything. We've attended the Superior hamfest for over 25 years. It was your hamfest in 1997 where I passed the 20 word per minute code test. The metal Quonset hut was a challenge as the code sounds were bouncing off the walls and ceiling. Maybe that helped. I don't know except it enabled me to become an Extra Class ham!

Keep up the good work. We'll be back!

Paula Persons WØHA

- Paula Persons WØHA
Brainerd, MN

Arrowhead Radio Amateur Club
HAM FEST!

Sat. May 1st, 2021 9:00am – 1:00pm

**HEAD OF THE LAKES FAIRGROUNDS – MULTI
PURPOSE BUILDING**

4700 Tower Ave. (Wisconsin Hwy 35) Superior, WI 54880

**CONGRATULATIONS
TO OUR
HOURLY DRAWING
WINNERS**

Icom 718	Paula Persons	WØHA	Brainerd MN
Yaesu Dual Band	Peter Winters	NØRUG	Golden Valley MN
\$50 DX Engineering	Jerry Dufeck	WBØOZJ	Shoreview MN
\$50 ARRL	Mark Soder	KIØDB	Duluth
\$50 ARRL	Rich Staupe	KC9PTP	Superior WI
\$50 HRO	Dave Burt		Barnum MN
\$50 HRO	David Quick	KØEKL	Ely MN

SEE PAGE 6 for Grand Prize Winner Photo!



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	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	■■■■■■■●●●



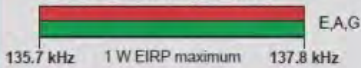
US Amateur Radio Bands

US AMATEUR POWER LIMITS

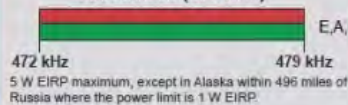
FCC 97.313 An amateur station must use the minimum transmitter power necessary to carry out the desired communications. (b) No station may transmit with a transmitter power exceeding 1.5 kW PEP.

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.

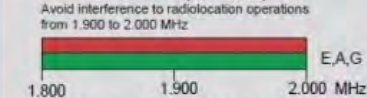
2,200 Meters (135 kHz)



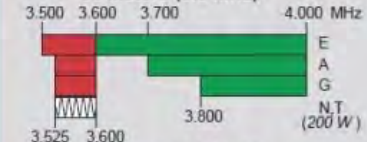
630 Meters (472 kHz)



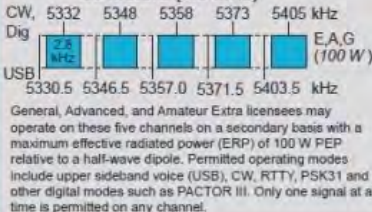
160 Meters (1.8 MHz)



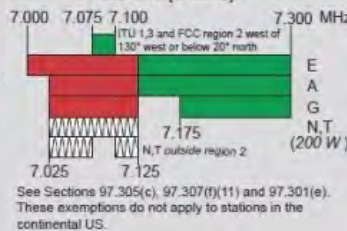
80 Meters (3.5 MHz)



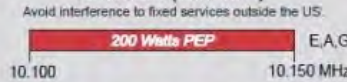
60 Meters (5.3 MHz)



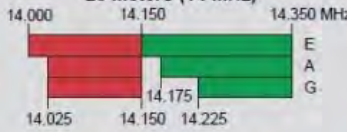
40 Meters (7 MHz)



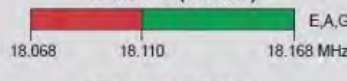
30 Meters (10.1 MHz)



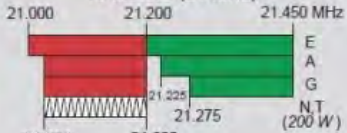
20 Meters (14 MHz)



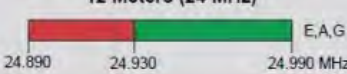
17 Meters (18 MHz)



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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Toll-Free 1-888-277-5289 (860-594-0336)
email: membership@arrl.org

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

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

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



Next ARAC Board Meeting

Tuesday, June 1, 2021

@ 6:30 p.m.

Sammy's Pizza

Next ARAC Club Meeting

Thursday,
June 10, 2021
7 p.m.

Back at the Coppertop!

PLEASE WEAR A MASK,
as required by our hosts at the
Coppertop Church!

June 10th Club Meeting

Grandma's Marathon Volunteer Planning for June 19th

*Come to hear more about
participating in this
important public safety
service & pick up your
volunteer packet!*

*Interested in providing a pro-
gram, or have an idea for one?*

Contact Mike NØPDG at
lovoldm@gmail.com



ARRL Field Day 2021 June 26-27

ARRL Field Day is the most popular on-the-air event held annually in the US and Canada.

Field Day is ham radio's open house. On the fourth weekend of June, more than 40,000 radio amateurs in North America gather with their clubs, groups or simply with friends to operate from remote locations.

Hams set up temporary transmitting stations in public places to demonstrate ham radio's science, skill and service to our communities and our nation. It combines public service, emergency preparedness, community outreach, and technical skills all in a single event. Field Day has been an annual event since 1933, and remains the most popular event in ham radio.

NEW TO FIELD DAY?

See the YouTube video called
Get Ready for 2021 ARRL Field Day,
created by J. Mitch Hopper, K9ZXO

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...

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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

Co-Editors,



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

JUNE

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 ARAC BOARD MEETING Sammy's Pizza 6:30 pm DC Net 2000 CC Net 2030	2	3	4	5
6 CW 1930 NØPDG USB 2000 ES 2100 M9DMG	7 WX 2000 KCØMKS	8 DC Net 2000 CC Net 2030	9 Lake County ARES/RACES Meeting 1800 Lake County Net 1900 2100 - BWAR	10  ARAC Club Meeting Coppertop! Masks Required 7 pm	11	12
13 CW 1930 AAØAW USB 2000 NØVRM ES 2100 AAØAW	14 WX 2000 KCØMKS	15 DC Net 2000 CC Net 2030	16 St. Louis County ARES/ RACES Mtg 1630 Pike Lake EOC 2100 - BWAR	17	18	19
20 CW 1930 NØPDG USB 2000 NØPDG ES 2100 KCØWDQ	21 DC ARES/ RACES Mtg 1900 DC EOC WX 2000 KCØMKS	22 DC Net 2000 CC Net 2030	23 Lake County Net 1900 2100 - BWAR	24 Carlton County ARES/RACES Meeting 1900 CC EOC	25	26 Club Breakfast @ The Chalet 0800-0900 ARRL Field Day
27 CW 1930 AAØAW USB 2000 AAØAW ES 2100 WØNWO	28 WX 2000 KCØMKS	29 DC Net 2000 CC Net 2030	30 2100 - BWAR	29		

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

Next Meeting: Thursday,
June 10th, 2021 - 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

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

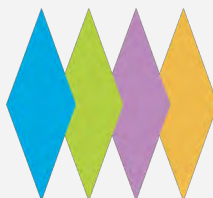
Reminder: The Contest Corral monthly listing of contests can be found in each issue of QST. ARRL sponsored contests can be found in Contest Corral, highlighted, or on the ARRL's web site at arrl.org.

FOR SALE

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**

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



Field Day Flashback, Continued from Page 1

“get out in the open in this fine spring weather, the real object of this contest is to test ‘portables’ wherever they may be available. If successful, we want to make it an annual affair.”

It **was** successful. With little advance notice of his event until amateur radio enthusiasts received the June QST issue in late May of 1933, news of the upcoming contest was relayed excitedly throughout the world and garnered thousands of participants. The September 1933 edition of QST published the First Annual Field Day winner as W4PAW, a non-club group in Florida. The group made 62 QSOs and had a multiplier of 28 sections/countries for a total of 1876 points.

Field Day was firmly established as an annual tradition among radio amateurs. The A.R.R.L. rethinks the contest rules for 1934. The total number of stations contacted becomes the goal, with the multipliers for sections and countries removed. Multi-band contacts are not permitted and DX contacts are encouraged, but have no extra points. “DXing” is making two-way radio contact with distant stations, including foreign countries. The name came from “DX”, the telegraphic shorthand for “distance”.

After an outpouring of excitement for Field Day in June 1936, the A.R.R.L. decides to add a bonus summer Field Day event that year in August. The one in June is the official “Fourth Annual Field Day”, with the August event being called a “Special Field Day”. Field Day continues to grow in popularity and settles into being limited to an annual event each June, although it floated among different June weekends on the calendar for many years until the A.R.R.L. decided the last full weekend in June would be the permanent recurring schedule.

Field Day rules have changed throughout the years of course (see a list of notable changes by year on page 22), a necessary response to fine-tune the rules at the request of A.R.R.L. members for clarity and fair play, as well as obvious changes in technology and band availability.

The stated purpose of Field Day itself has also shifted and been clarified. When A.R.R.L. created the Amateur Radio Emergency Service (ARES) from 1935-1937, an emphasis on Field Day as an emergency-readiness exercise began. This important distinction added a greater weight of official function and credibility with the newly-formed Federal Communications Commission, created in 1934 to replace its predecessor, the Federal Radio Commission.

Field Day was suspended from 1942 – 1945 following FCC Order No. 87 that withdrew all amateur frequencies from private use immediately after the December 7, 1941 Pearl Harbor attack. Though amateur radio operators couldn’t participate in the thriving hobby as they knew it, they seamlessly transitioned to helping our country--and the world--through World War II.

In his superb August 1995 QST article entitled “Amateur Radio and WWII”, Dan Davis WBLUX notes that amateur radio moved “out of thousands of basement, bedroom and attic ham shacks across America into military classrooms. In these classrooms the intrinsic value of Amateur Radio to the war effort would be realized. A licensed amateur operator represented a great asset to any branch of the military services.”

In fact, even before the Pearl Harbor attack that drew the U.S. into the war, the War Department, predecessor of the Department of Defense, began preparing to cultivate the expertise of amateur radio operators in the event they were needed during this time of world conflict. A questionnaire was sent to every amateur operator listed in the Callbook, which was a directory of amateur radio call signs originally published by the Department of Commerce’s Bureau of Navigation-Radio Service division. The questionnaire requested information about an amateur radio operator’s code proficiency, military status,



Staff Sgt Jim Marglin, W9THS, radio instructor at Fort Knox, and Mickey Marglin, W9ZTU, first female radio operator in the Signal Corps, with baby Patricia.

Continued on Page 16

Field Day Flashback, Continued from Page 15

education, occupation and dependents. Many hams enlisted in the military before the WWII draft was instituted, so all branches of our military had a wealth of radio experts that were absolutely instrumental in a successful war effort.

After the war, Field Day resumed and amateur radio operators who formerly served in the military came home to a hero's welcome. Amateur radio clubs embraced Field Day as an event to celebrate hams as war heroes and to revel in the victorious end to a long, difficult conflict. For many clubs, Field Day became a large picnic gathering of family and friends who eagerly watched amateur radio operators show off their skills during the event.

Enthusiasm for Field Day continued to flourish during Cold War times and ARRL changed FD rules to accommodate Single Side Band, packet radio, and the digital technologies of today.

Current amateur radio clubs promote their Field Day participation to members in a number of ways:

- a) an exercise to promote amateur radio to newly-licensed operators, encouraging them to become more acquainted with various types of contacts;
- b) a contest for seasoned hams to acquire as many contacts possible for the club;
- c) an emergency preparedness exercise in which participants employ temporary or alternate-power facilities in order to develop skills for rapid deployment of emergency communications in disaster response;
- d) an event that celebrates amateur radio as a hobby, with club members' family and the surrounding community invited to participate in picnics and other family fun activities while seeing educational demonstrations of amateur radio at various temporary installations.

Here's how the ARRL describes Field Day today:

"Field Day is a picnic, a campout, practice for emergencies, an informal contest and, most of all, FUN! It is a time where many aspects of Amateur Radio come together to highlight our many roles."

ARRL goes on to say, "While some will treat it as a contest, other groups use the opportunity to practice their emergency response capabilities. It is an excellent opportunity to demonstrate Amateur Radio to the organizations that Amateur Radio might serve in an emergency, as well as the general public.

"For many clubs, ARRL Field Day is one of the highlights of their annual calendar. The contest part is simply to contact as many other stations as possible and to learn to operate our radio gear in abnormal situations and less than optimal conditions. We use these same skills when we help with events such as marathons and bike-a-thons; fund-raisers such as walk-a-thons; celebrations such as parades; and exhibits at fairs, malls and museums — these are all large, preplanned, non-emergency activities. But despite the development of very complex, modern communications systems — or maybe because they ARE so complex — ham radio has been called into action again and again to provide communications in crises when it really matters."



Photos (above & below) of ARAC Field Day at Park Point—1947 or 1948



Photos Courtesy Dan (KDØCRZ) and Donna Holm Collection

Continued on Page 17

Field Day Flashback, Continued from Page 16

Are we doing all we can do make Field Day? Even if we don't get together as a club, Field Day is what we all make it! Gather friend and family for some ideas and create simple activities to celebrate this yearly event that has waned in participation:

- ◆ Not interested in contesting? Learn more about it & cheer on your fellow hams in action!
- ◆ Not sure about what else to do? Bring food to cook out as you gather with hams on Field Day and make it a potluck picnic! Have a "best dessert" contest—or other food contest—with a few of your fellow hams!
- ◆ Have a tent or a camper? Do an overnight Field Day camping event with friends!
- ◆ Have a projector and a movie screen? Bring it to "Field Day After Dark" and show a fun movie you think your fellow hams will enjoy and make s'mores!

These things – and much more--are what other clubs in the U.S. and Canada are doing on Field Day, so why not us? Let's change the way we think of Field Day and make it another great way for **all of us** to gather and enjoy summer as a club! ★

FIELD DAY Rule Changes just through the twentieth century alone.

Though not an exhaustive history, it's great insight on how the hobby has evolved over the years:

- **1939** Rule is added that all station apparatus must fall within a 100 ft radius excluding antennas.
- **1940** The 100' rule is changed to 500'. Home stations are allowed.
- **1942-1945** All amateur radio activity ceases due to World War II
- **1946** Field Day officially returns and adds a "VHF Only" category
- **1948** 11 meters (now the CB band) is added for a Field Day Band. Battery and Emergency power categories are added. Field Day is shortened to 24 hours
- **1949** Mobile category added to Field Day.
- **1950** The modern day Field Day classes are established. The 500' circle is increased to **1000'**
- **1951** To encourage home emergency power, a home emergency power class is added (Class D), while home stations using power mains are class E
- **1957** Simultaneous starts return, starts 4 pm EST and ends 4pm PST the next day. Anyone can operate 24 of the 27 operating period.
- **1963** ARRL rules that a Field Day site can only use one call sign.
- **1968** All home stations are moved to Class D.
- **1970** A free Novice station is allowed. Starting time is moved to 1800z.
- **1972** Battery results are listed separately.
- **1973** Repeater rule is waived for satellite contacts and a 50 point sat bonus is included for the first time.
- **1974** A 100-point bonus is added for making contacts solely by natural power. The "15 Minutes" rule for band changes is instituted.
- **1975** The explosion of SSB leads the ARRL to institute a 2X multiplier for CW contacts.
- **1977** The natural power bonus disappears and techs are now allowed to operate the Novice station. The 2X CW rule becomes permanent.
- **1980** RST is replaced with category and class for the exchange. Setup time is changed again; nothing can be set up before the 24 hour period. Natural power comes back as a 100 point bonus. Sat and Field Day message bonuses increase to 100 points.
- **1981** Due to the popularity of packet radio, a 100 point bonus is instituted for one packet QSO and the repeater rules are waived for QSOs through a digipeater.
- **1984** Power multiplier is changed from 200 watts to anything less than 150 watts.
- **1993** Due to the influx of Technicians, a 100 point bonus is added for making 10 VHF/UHF contacts and a free VHF/UHF station is allowed class A and B.
- **1994** The modern Field Day record is set by K6CAB 15A by getting 3450 QRP QSO's for a total score of 30,150
- **1998** Free packet station and bonus are eliminated, but RTTY/PSK31 are added as a 3rd FD mode. The 100 point bonus for VHF/UHF stations is deleted.

Contest Calendar - June 2021

+ Worldwide Sideband Activity Contest	0100Z-0159Z, Jun 1
+ QCX Challenge	0300Z-0400Z, Jun 1
+ RTTYOPS Weeksprint	1700Z-1900Z, Jun 1
+ Phone Weekly Test - Fray	0230Z-0300Z, Jun 2
+ CWops Mini-CWT Test	1300Z-1400Z, Jun 2
+ VHF-UHF FT8 Activity Contest	1700Z-2000Z, Jun 2
+ CWops Mini-CWT Test	1900Z-2000Z, Jun 2
+ Walk for the Bacon QRP Contest	0000Z-0100Z, Jun 3 and
+ Walk for the Bacon QRP Contest	0200Z-0300Z, Jun 4
+ CWops Mini-CWT Test	0300Z-0400Z, Jun 3
+ RTTYOPS Weeksprint	1700Z-1900Z, Jun 3
+ NRAU 10m Activity Contest	1700Z-1800Z, Jun 3 (CW) and
+ NRAU 10m Activity Contest	1800Z-1900Z, Jun 3 (SSB) and
+ NRAU 10m Activity Contest	1900Z-2000Z, Jun 3 (FM) and
+ NRAU 10m Activity Contest	2000Z-2100Z, Jun 3 (Dig)
	1900Z-2000Z, Jun 3
	1900Z-2100Z, Jun 3
+ EACW Meeting	0000Z, Jun 4 to 2359Z, Jun 6
	0145Z-0215Z, Jun 4
+ NCCC Sprint	0230Z-0300Z, Jun 4
+ HA3NS Sprint Memorial Contest	1900Z-1929Z, Jun 4 (40m) and
+ HA3NS Sprint Memorial Contest	1930Z-1959Z, Jun 4 (80m)
+ K1USN Slow Speed Test	2000Z-2100Z, Jun 4
+ 10-10 Int. Open Season PSK Contest	0000Z, Jun 5 to 2400Z, Jun 6
+ PVRC Reunion	0000Z-0200Z, Jun 5 and
+ PVRC Reunion	0000Z-0200Z, Jun 6

Continued on Page 19

Contest Calendar - April 2021, Continued

+ DigiFest	0400Z-1200Z, Jun 5 and
+ DigiFest	2000Z, Jun 5 to 0400Z, Jun 6 and
+ DigiFest	1200Z-2000Z, Jun 6
+ KANHAM Contest	0600Z, Jun 5 to 0600Z, Jun 6
	0600Z-0629Z, Jun 5 and
	0630Z-0659Z, Jun 5 and
	0700Z-0729Z, Jun 5 and
	0730Z-0800Z, Jun 5
+ Wake-Up! QRP Sprint	1200Z, Jun 5 to 1159Z, Jun 6
	1300Z-1330Z, Jun 5
+ UKSMG Summer Contest	1300Z, Jun 5 to 1300Z, Jun 6
+ Kentucky QSO Party	1400Z, June 5 to 0200Z, Jun 6
	1500Z, Jun 5 to 1500Z, Jun 6
+ RSGB National Field Day	1800Z, Jun 5 to 1200Z, Jun 6
	1700Z-2200Z, Jun 6
+ K1USN Slow Speed Test	0000Z-0100Z, Jun 7
+ RSGB 80m Club Championship, Data	1900Z-2030Z, Jun 7
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Jun 8
+ ARS Spartan Sprint	0100Z-0300Z, Jun 8
	1700Z-1900Z, Jun 8
+ NAQCC CW Sprint	0030Z-0230Z, Jun 9
+ Phone Weekly Test - Fray	0230Z-0300Z, Jun 9
+ CWops Mini-CWT Test	1300Z-1400Z, Jun 9
+ VHF-UHF FT8 Activity Contest	1700Z-2000Z, Jun 9
+ CWops Mini-CWT Test	1900Z-2000Z, Jun 9
+ CWops Mini-CWT Test	0300Z-0400Z, Jun 10
+ RTTYOPS Weeksprint	1700Z-1900Z, Jun 10

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Contest Calendar - June 2021, Continued

+ EACW Meeting	1900Z-2000Z, Jun 10
+ NCCC RTTY Sprint	0145Z-0215Z, Jun 11
+ NCCC Sprint	0230Z-0300Z, Jun 11
+ K1USN Slow Speed Test	2000Z-2100Z, Jun 11
	0000Z-0759Z, Jun 12 and
	1600Z-2359Z, Jun 12 and
	0800Z-1559Z, Jun 13
+ DRCG WW RTTY Contest	0000Z-2359Z, Jun 12
	0000Z, Jun 12 to 2400Z, Jun 13
	1100Z-1300Z, Jun 12
+ Portugal Day Contest	1200Z, Jun 12 to 1200Z, Jun 13
+ SKCC Weekend Sprintathon	1200Z, Jun 12 to 2400Z, Jun 13
	1400Z-1700Z, Jun 12 (144) and
	1700Z-1800Z, Jun 12 (432)
+ AGCW VHF/UHF Contest	1500Z, Jun 12 to 1500Z, Jun 13
	1600Z, Jun 12 to 1600Z, Jun 13
+ REF DDFM 6m Contest	1800Z, Jun 12 to 0259Z, Jun 14
+ ARRL June VHF Contest	0000Z-0100Z, Jun 14
+ K1USN Slow Speed Test	0000Z-0200Z, Jun 14
+ 4 States QRP Group Second Sunday Sprint	0100Z-0159Z, Jun 15
	1700Z-1900Z, Jun 15
+ RTTYOPS Weeksprint	0030Z-0230Z, Jun 16
+ NAQCC CW Sprint	0230Z-0300Z, Jun 16
+ Phone Weekly Test - Fray	1200Z-1400Z, Jun 16
+ SARL Youth Sprint	1300Z-1400Z, Jun 16
+ CWops Mini-CWT Test	1900Z-2000Z, Jun 16
+ CWops Mini-CWT Test	1900Z-2030Z, Jun 16
+ RSGB 80m Club Championship, CW	0300Z-0400Z, Jun 17
+ CWops Mini-CWT Test	

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Contest Calendar - June 2021, Continued

+ RTTYOPS Weeksprint	1700Z-1900Z, Jun 17
+ EACW Meeting	1900Z-2000Z, Jun 17
+ NCCC RTTY Sprint	0145Z-0215Z, Jun 18
+ NCCC Sprint	0230Z-0300Z, Jun 18
+ K1USN Slow Speed Test	2000Z-2100Z, Jun 18
+ All Asian DX Contest, CW	0000Z, Jun 19 to 2400Z, Jun 20
+ Battle of Carabobo International Contest	0000Z-2400Z, Jun 19
+ Ukrainian DX Classic RTTY Contest	1200Z, Jun 19 to 1159Z, Jun 20
+ IARU Region 1 50/70 MHz Contest	1400Z, Jun 19 to 1400Z, Jun 20
+ Stew Perry Topband Challenge	1500Z, Jun 19 to 1500Z, Jun 20
+ West Virginia QSO Party	1600Z, Jun 19 to 0400Z, Jun 20
+ ARRL Kids Day	1800Z-2359Z, Jun 19
+ Feld Hell Sprint	1800Z-1959Z, Jun 19
+ WAB 50 MHz Phone	0800Z-1400Z, Jun 20
+ Run for the Bacon QRP Contest	2300Z, Jun 20 to 0100Z, Jun 21
+ K1USN Slow Speed Test	0000Z-0100Z, Jun 21
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Jun 22
+ RTTYOPS Weeksprint	1700Z-1900Z, Jun 22
+ SKCC Sprint	0000Z-0200Z, Jun 23
+ Phone Weekly Test - Fray	0230Z-0300Z, Jun 23
+ CWops Mini-CWT Test	1300Z-1400Z, Jun 23
+ CWops Mini-CWT Test	1900Z-2000Z, Jun 23
+ CWops Mini-CWT Test	0300Z-0400Z, Jun 24
+ RTTYOPS Weeksprint	1700Z-1900Z, Jun 24
+ EACW Meeting	1900Z-2000Z, Jun 24
+ RSGB 80m Club Championship, SSB	1900Z-2030Z, Jun 24
+ NCCC RTTY Sprint	0145Z-0215Z, Jun 25
+ NCCC Sprint	0230Z-0300Z, Jun 25

Continued on Page 26

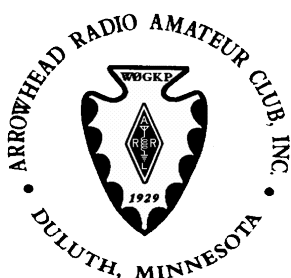
Contest Calendar - June 2021, Continued

+ K1USN Slow Speed Test	2000Z-2100Z, Jun 25
+ UFT QRP Contest	0600Z-0900Z, Jun 26 and 1400Z-1700Z, Jun 26
+ His Maj. King of Spain Contest, SSB	1200Z, Jun 26 to 1200Z, Jun 27
+ Ukrainian DX DIGI Contest	1200Z, Jun 26 to 1200Z, Jun 27
+ ARRL Field Day	1800Z, Jun 26 to 2100Z, Jun 27
+ K1USN Slow Speed Test	0000Z-0100Z, Jun 28
+ QCX Challenge	1300Z-1400Z, Jun 28
+ RSGB FT4 Contest Series	1900Z-2030Z, Jun 28
+ QCX Challenge	1900Z-2000Z, Jun 28
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Jun 29
+ QCX Challenge	0300Z-0400Z, Jun 29
+ RTTYOPS Weeksprint	1700Z-1900Z, Jun 29
+ Phone Weekly Test - Fray	0230Z-0300Z, Jun 30
+ CWops Mini-CWT Test	1300Z-1400Z, Jun 30
+ CWops Mini-CWT Test	1900Z-2000Z, Jun 30

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

Please visit Bruce's site at
www.contestcalendar.com/contestcal.html

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.

