



The RELAY)))

June
2026

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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The Relay Co-Editors:

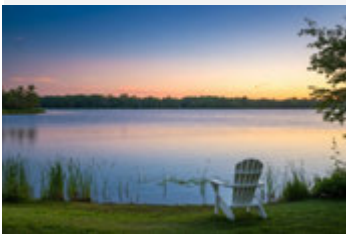
Kim & Steve Waller

Kim - KE0NQS

Steve - KE0NQT

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Summer 2026



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Facebook!

Ham Radio Trivia How Many Answers Do You Know?

Amateur radio has always been a treasure trove of fascinating facts — part science, part history, part quirky adventure, and always a whole lot of fun. It's been awhile since our last trivia roundup, so we've put together a (mostly) fresh collection of questions drawn from ham radio history, discovery, technological development, local Duluth events, movies, and more.

We think there's a little something here to spark the interest of every reader. So grab a cold drink, settle into your favorite chair on the deck or dock, and enjoy the sweet summer breeze while you test your knowledge. See how many you and your family can answer without sneaking a peek at the internet. Answers — and bonus facts — begin on page 13.

1. What did "ham" originally mean in the context of radio operators?

2. Who is widely credited with proving the feasibility of long-distance radio communication, and what major transatlantic achievement did he accomplish in 1901?

3. What U.S. law required amateur radio operators to be licensed and initially restricted them to a single wavelength (200 meters)?

4. Who founded the American Radio Relay League (ARRL) in 1914, and why?

5. When was the Arrowhead Radio Amateurs Club (ARAC) founded?

6. When and where was the first transatlantic two-way amateur radio contact made?

7. Who built the first experimental spark-gap transmitters in 1887 to prove the existence of radio waves?

8. Who invented the first practical amplifying vacuum tube (the Audion triode) in 1906–1908, and why was it a game-changer for early amateur radio?

9. Vacuum tubes are completely obsolete in modern amateur radio equipment. True or False?

10. What popular directional antenna used by hams was co-developed in 1926 by Japanese engineers?

11. What is widely considered the most basic and popular "first HF antenna" for generations of radio amateurs, and why is it still a favorite today?

Continued on Page 13



Portable Ham Radio at the Beach, circa 1920 Image: whsu.org



ARAC Board of Directors

PRESIDENT

	<p>NØVRM Gene Ellefsen 3710 Chambersburg Ave Duluth, MN 55811 218-390-3272 lspitech@mail.com</p>
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VICE PRESIDENT

PHOTO COMING SOON!	<p>NØUOZ Jon Nelson</p>
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SECRETARY

	<p>KFØGJW Melinda Nelson jonbeeyore@outlook.com</p>
---	---


TREASURER

	<p>KRØB Randy Wabik</p>
---	------------------------------------


3RD YEAR BOARD

	<p>KD9VKI Justin Cheever jcheever13@gmail.com</p>
---	---

2ND YEAR BOARD

	<p>KFØLFZ Brian Beckman</p>
---	--

1ST YEAR BOARD

	<p>AAØAC Dave Davis 218-348-6649 aaøac@outlook.com</p>
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Board Meeting Minutes **PENDING** - May 9, 2026

Present:

Board Members

Gene Ellefsen – NØVRM, Jon Nelson – NØUOZ, Melinda Nelson – AFØET, Randy Wabik – KRØB, Brian Beckman – KFØLFZ, Justin Cheever – KD9VKI

Board Advisors (Non-Board Members)

Doug Nelson – AAØAW, Grant Forsyth – KCØWUP

Guest:

Al Nordin – WBØDBQ, Rochelle Nelson

Meeting called to order by President Gene – NØVRM at 18:34 (6:34 pm)

Minutes:

Minutes were sent via email. Motion to approve Jon Nelson – NØUOZ, and Justin Cheever – KD9VKI, motion passed.

Treasurer's Report:

Checking: \$144.51
 Savings: \$2,313.39
 Repeater: \$3,361.76
 Subtotal Cash \$5,819.66
 Cash on hand: \$155.63
 Subtotal COH: \$155.63
 Outstanding Checks:
 Assets Subtotal: \$5,975.29

Minutes posted at press time for general information purposes
PENDING Board Meeting Minutes are Unofficial until Final Approval of Board Quorum

Motion made by Melinda Nelson – AFØET to accept Treasurer's report as is, seconded by Jon Nelson – NØUOZ. Motion passed.

Testing:

5 candidates at the testing session for Ham Fest. 2 new techs, 1 general, and 1 extra.

There will be a change coming up with the VE program. It will be going digital for testing were the candidate will be taking the test online. There will be a meeting coming soon for all VE's.

If you are interested in getting your license you will need a copy of the FRN number, an ID, and a copy of your licenses. As always if you are ready to test or know someone who wants to test, please get ahold of Doug Nelson – AAØAW at AA0AW@arrl.net.

Repeater:

Randy Wabik – KRØB, Will be looking at getting new cans.

New Business:

Open Registration for Grandma's Marathon – Password HAM26. If interested please contact Melinda Nelson – AFØET at jonbeeyore@outlook.com or Doug Nelson – AAØAW at AA0AW@arrl.net.

Getting ready for Curnow and Voyager races

Motion to adjourn by Jon Nelson – NØUOZ, seconded by Randy Wabik 0 KRØB, motion passed at 19:46 (7:46 PM).





ARAC Club Meeting Minutes

May 14, 2026

Present:

President: Gene Ellefsen – N0VRM
Vice President: Jon Nelson – N0UOZ
Secretary: Melinda Nelson – AF0ET
First Year Board: Dave Davis – AA0AC
Second Year Board: Brain Beckman – KF0LFZ
HamFest/Education: Bob Schulz – KC0NFB
Special Events: Open/Gene Ellefsen – N0VRM (acting)
Testing: Doug Nelson – AA0AW

Absent:

Treasurer/Membership: Randy Wabik – KR0B
Third Year Board: Justin Cheever – KD9VKI
Repeater: Dave Pyrlik – K0DJP & Randy Wabik – KR0B
Parliamentarian: Grant Forsyth – KC0WUP
Property/Picnic: Scott Ahlgren – N0VYU
Newsletter/Historian: Kim Waller – KE0NQS
Newsletter/Historian: Steve Waller – KE0NQT
Web Site: Thomas Dorr – KE0RHA
Chaplin:

Meeting called to order at 17:00 (7:00 PM) by President Gene Ellefsen – N0VRM. Forty-six (46) members were in attendance.

Minutes:

Minutes are posted on the website and in the newsletter. Motion to accept by Alan Anway – KC9LJN, seconded by Sam Frey – KE0YTM, motion Passed.

Treasurer's Report:

Checking: \$144.51
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Subtotal COH: \$155.63
Outstanding Checks:
Assets Subtotal: \$5,975.29

Motion made by Bob Schulz – KC0NFB, seconded by Paul Gilsdorf – KF0GEX. Motion passed.

Continued on Page 4



ARAC Club Meeting Minutes continued

Testing:

Please make sure that you have the updated syllabus. As always if you are looking to test or upgrade or know of anyone that is interested in testing, please contact Doug Nelson – AA0AW at AA0AW@arrl.net.

New Business:

Open Registration for Grandma's Marathon – Password HAM26. If interested, please contact Melinda Nelson – AF0ET at jonbeeyore@outlook.com or Doug Nelson – AA0AW at AA0AW@arrl.net.

Getting ready for Curnow and Voyager races

Silent Key: (Please keep their family in your thoughts)

New members/Returning members (Please welcome them when they get on the radio):

Door Prize: was won by Robert Peterson – N0RWP

Motion to adjourn by Jon Nelson – N0UOZ, seconded by Bill Turk – KF0ILA, motion passed at 19:12 (7:12 PM).

2026 Program:

June – Grandma's Marathon by Grandma's Marathon Team Melinda Nelson – AF0ET and Doug Nelson – AA0AW.

July – Intro to Fox Hunting

August –

October –

November –

December – Christmas Party

If you are interested in seeing a program, or would like to host a program, please reach out to Jon Nelson at jonbeeyore@outlook.com or 715-817-1986.



CLUB REPEATER

WØGKP

146.94 (-)

CTCSS TONE



Prez Sez ...

Hi All,

June is going to be a busy month. We have Grandma's Marathon on Saturday June 20, and the week after is ARRL Field Day on June 27 & 28.

Set up for Field Day starts at 9:00 AM on Saturday at Spirit Mountain parking Lot C, with operating time 1:00 PM Saturday to 1:00 PM Sunday. So come on out, bring a chair, and have some fun.

Brats, bottled water, and chips are provided. It is a potluck, so also bring your favorite dish to share. This is a good opportunity to operate on HF. We will have several operating stations using different modes. All are welcome!!

Gene NØVRM



LOOKING for an Amateur Radio License TESTING SESSION?

Schedule your own Testing Session TODAY!

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

All Exam Candidates are REQUIRED to have an FCC Registration Number (FRN) before exam day, which will require your email address.

Not Currently Licensed? For New License Candidate FRN registration, go to: www.fcc.gov/new-users-guide-getting-started-universal-licensing-system-uls

Upgrading to General or Expert Class & not sure you have an FRN number?
go to

<https://wireless2.fcc.gov/UlsApp/UlsSearch/searchLicense.jsp>

UPGRADE CANDIDATES:

Please bring a copy of your current license to the exam session.

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	■■■■●●●●●●
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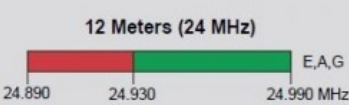
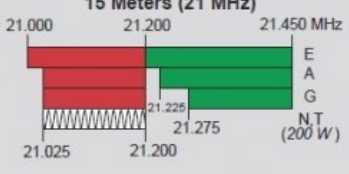
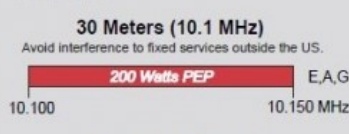
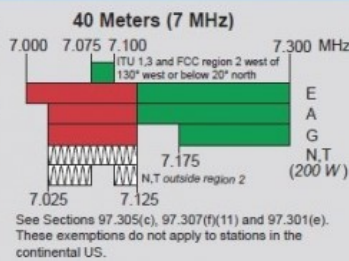
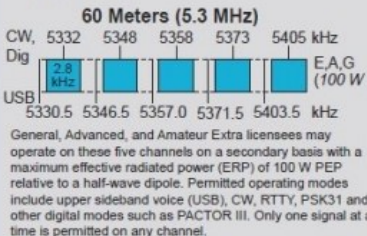
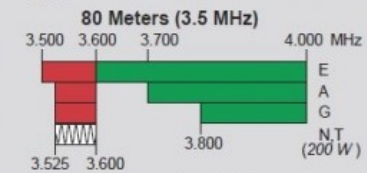
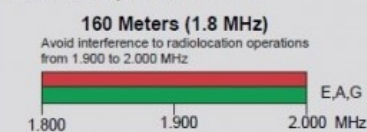
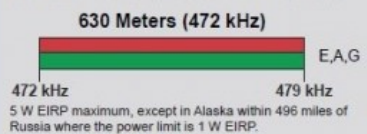
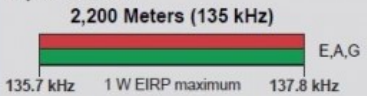


US Amateur Radio Bands

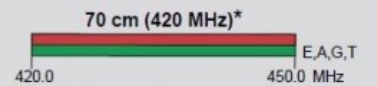
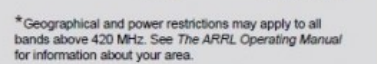
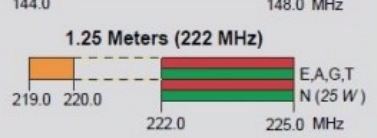
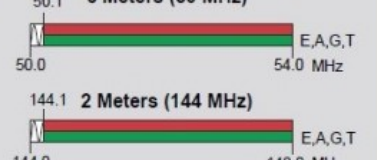
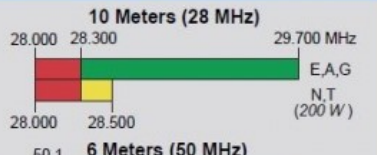
US AMATEUR POWER LIMITS

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.



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



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

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

‡ No pulse emissions

KEY

Note: CW operation is permitted throughout all amateur bands.

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

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

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

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

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

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

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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
- 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



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)	Not Operating
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 – some may work/some may still be linked

147.330	plus	151.4	Proctor	Not Operating
147.270	plus	114.8	Two Harbors	
147.270	plus	103.5	Wales	
147.090	plus	114.8	Silver Bay	Not Operating
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	Not Operating
443.500	+5.00	141.3	Gilbert	
147.060	plus	103.5	Virginia	
147.360	plus	162.2	Cook	Not Operating
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	Not Operating
443.325	+5.00	146.2	Isanti	

Rev. KCØWDQ as of 12/01/24 For ARAC Newsletter

Continued on Page 9



DULUTH AREA REPEATERS, continued

NARC System NAØRC

147.135 plus 103.5 Knife River
 147.135 plus 114.8 Duluth (rcv)

Stand Alone Repeaters

145.210 minus 110.9 Clam Lake, WI
 146.880 minus 123.0 Grand Rapids, MN
 146.910 minus 146.2 Duxbury, MN
 146.955 minus 146.2 Askov, MN
 147.105 plus 110.9 Chaffey, WI
 444.850 +5.00 141.3 Cloquet, MN

Fusion

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

147.150 plus 151.4 NTØB Gilbert, MN Fusion Repeater
 145.170 minus 110.9 WA9KLM Superior, WI – Douglas County RACES/ARES Fusion Repeater
 (Digital only) Fusion Room 28373

145.250 minus 103.5 KBØYHX Cloquet, MN – Carlton County RACES/ARES Fusion Repeater

444.300 +5.00 103.5 NØEO Duluth, MN – 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
 444.800 +5.00 103.5 NØLCR Grand Marais, MN – Wires X Connected to NØEO Room 40494
 440.400 +5.00 110.9 WØLSA Maple, WI – Wires X Connected to NØEO Room 40494

D-Star

147.375 plus NØEO D Star
 442.200 plus NØEO D Star

Rev. KCØWDQ as of 12/01/24 For ARAC Newsletter

Elmers

El-mer / el-mər/ [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...



Membership Email Directory

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Co-Editors,
Kim & Steve Waller
KE0NQS & KE0NQT



JUNE

CLUB EVENTS

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

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

	Mon	Tue	Wed	Thu	Fri	Sat
	1 WX 2000 KCØMKS	2 ARAC BOARD MEETING Sammy's Pizza 6:30 pm DC Net 2000 CC Net 2030	3	4	5 Friday Night 6 meter Gag-Chew 50.125 USB 7 PM	6
7 CW 1930 AAØAW USB 2000 KRØB ES 2100 KFØLFZ	8 Douglas County ARES/RACES Mtg 1900 DC E WX 2000 KCØMKS	9 DC Net 2000 CC Net 2030	10 Carlton County ARES/RACES Meeting 1900 CC EOC Lake County LSAC1 1900 2100 -BWAR	11 ARAC Club Meeting Coppertop Church 7 PM	12 Friday Night 6 meter Gag-Chew 50.125 USB 7 PM	13
14 Flag Day  CW 1930 NØPDG USB 2000 NØVRM ES 2100 WØNWO	15 WX 2000 KCØMKS	16 DC Net 2000 CC Net 2030	17 2100 -BWAR	18	19 Friday Night 6 meter Gag-Chew 50.125 USB 7 PM	20 Grandma's Marathon
21 Happy Father's Day! CW 1930 AAØAW USB 2000 AAØAW ES 2100 NØVRM	22 WX 2000 KCØMKS	23 DC Net 2000 CC Net 2030	24 Lake County LSAC1 1900 2100 -BWAR	25 Carlton County ARES/RACES Meeting 1900 CC EOC	26 Friday Night 6 meter Gag-Chew 50.125 USB 7 PM	27  ARRL Field Day Begins 1 PM Spirit Mtn Lot C
28  Field Day Ends 2 PM CW 1930 NØPDG USB 2000 KB9WLB ES 2100	29 WX 2000 KCØMKS	30 DC Net 2000 CC Net 2030				
						

Get this newsletter *faster*
via email!

Email Doug AAØAW at
aa0aw@arrl.net

Next Club Meeting:
June 11, 2026 - 7 pm
Coppertop Church

ARAC Committee Chairs



Club License Trustee:

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Control Operators:

AAØAW - NØKXT - KCØNFB

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Website:

Thomas Dorr KEØRHA

Membership:

Sam Frey KEØYTM

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.

Ham Trivia continued from page 1

12. What loop-shaped antenna was born out of necessity in the early 1940s at a high-altitude missionary radio station in Ecuador, later becoming popular with hams for its performance on limited space?
13. What compact, high-efficiency antenna type has seen a major resurgence in recent decades among portable operators (POTA/SOTA) and those with small lots, thanks to modern loading techniques and auto-tuners?
14. What NASA program lets school kids talk directly to astronauts on the International Space Station using ham radio?
15. For how many years has the Arrowhead Radio Amateurs Club (ARAC) provided life-safety communication and monitoring support for Grandma's Marathon in Duluth?
16. Who are the record holders for the "most wins" in Grandma's Marathon for the men's division and for the women's division?
17. When was the first Field Day held in the United States?
18. When did Spirit Mountain open as a ski resort, and who helped make it happen?
19. What does the acronym "QSL" originally stand for, and how is it most commonly used today by hams?
20. What does "73" mean in ham radio, and what is its surprising 19th-century origin?
21. In modern portable operating, what do the popular acronyms POTA and SOTA stand for?
22. What does the digital mode "FT8" stand for, and why has it become one of the most popular modes on HF bands?
23. What does the signal report system "RST" stand for, and when is the "T" (Tone) portion normally used?
24. What tech giant became a ham as a kid?
25. What legendary actor and ham radio operator used his Oscar Statue as a doorstop in his home?



Iconic **RCA/Cunningham Radio Tube advertisement** that appeared in QST Magazine and Radio-Craft Magazines in the 1920s.

ANSWERS

1. What did "ham" originally mean in the context of radio operators?
A: It was originally a derogatory term that began circulating from a couple of snobby professional telegraph operators in the late 1800's. They had little patience for newbie Morse Code senders that they deemed unskilled and clumsy, calling them "ham-fisted". Amateur radio operators proudly reclaimed the word to be a badge of honor and skill.
2. Who is widely credited with proving the feasibility of long-distance radio communication, and what major transatlantic achievement did he accomplish in 1901?
A: Guglielmo Marconi. He successfully sent the first wireless signal across the Atlantic.
3. What U.S. law required amateur radio operators to be licensed and initially restricted them to a single wavelength (200 meters)?
A: The Radio Act of 1912, passed partly in response to interference issues and events like the Titanic disaster.
4. Who founded the American Radio Relay League (ARRL) in 1914, and why?
A: Hiram Percy Maxim. He realized messages travel more reliably over long distances through organized relay stations.

Continued on Page 14

Ham Trivia continued from page 13

ANSWERS, Continued

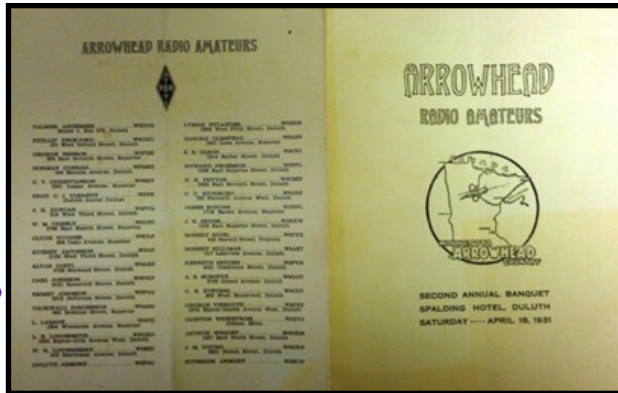
5. When was the Arrowhead Radio Amateurs Club (ARAC) founded?

A: ARAC was officially founded on December 3, 1929. The club's mission from the start has been "to promote the growth and enjoyment of ham radio in northeast Minnesota and northwest Wisconsin." ARRL affiliation date is listed as December 2, 1929 just one day before, confirming ARAC as one of the earliest clubs.



“Arrowhead Radio Amateurs”
Official Certificate of Affiliation from the ARRL
Dec 2, 1929

“Arrowhead Radio Amateurs”
Second Annual Banquet Program
(Front & Back)
April 18, 1931



6. When and where was the first transatlantic two-way amateur radio contact made?

A: In 1923, between stations in England and Connecticut. Transatlantic tests began in 1921

7. Who built the first experimental spark-gap transmitters in 1887 to prove the existence of radio waves?

A: German physicist Heinrich Hertz. His work demonstrated electromagnetic waves (Hertzian waves) predicted by James Clerk Maxwell. Spark-gap transmitters were particularly problematic for early radio users (including hams), as they transmitted on a very wide range of frequencies at once (damped waves), causing massive interference—like a modern jammer—rather than a clean single frequency. Amateur spark transmissions largely ended by 1923 and were formally outlawed by 1929 (with full international damped-wave bans by 1934). Vacuum tube (continuous wave/CW) transmitters replaced them for cleaner, more efficient operation.

8. Who invented the first practical amplifying vacuum tube (the Audion triode) in 1906–1908, and why was it a game-changer for early amateur radio?

A: Lee de Forest. Unlike earlier diodes, the three-element Audion could amplify weak signals, making voice transmission and sensitive receivers possible. It shifted ham radio from noisy spark-gap Morse code to clearer continuous-wave (CW) operation and paved the way for broadcasting.

9. Vacuum tubes are completely obsolete in modern amateur radio equipment. True or False?

A: False. While transistors and solid-state devices dominate most rigs, many high-power linear amplifiers still use vacuum tubes (e.g., 3-500Z, 8877) because they handle high RF power, high voltages, and mismatched loads more gracefully than solid-state devices — a preference that continues today among contesters and DXers.

10. What popular directional antenna used by hams was co-developed in 1926 by two Japanese engineers?

A: The Yagi-Uda antenna was developed by Hidetsugu Yagi and Shintaro Uda, but it is commonly called a Yagi. This is probably because Yagi published the first *English* article about it in 1928.

11. What is widely considered the most basic and popular “first HF antenna” for generations of radio amateurs, and why is it still a favorite today?

A: The half-wave dipole (often center-fed). It is easy to build from wire, performs well on its design frequency, and serves as the reference antenna against which all others are measured. Many hams still start with one strung between trees or supports.

12. What loop-shaped antenna was born out of necessity in the early 1940s at a high-altitude missionary radio station in Ecuador, later becoming popular with hams for its performance on limited space?

A: The cubical quad antenna. It was invented when traditional antennas at HCJB were failing due to high power and altitude. Hams loved its lightweight design, good gain, and lower angle of radiation compared to Yagis in some conditions.

13. What compact, high-efficiency antenna type has seen a major resurgence in recent decades among portable operators (POTA/SOTA) and those with small lots, thanks to modern loading techniques and auto-tuner?

A: The end-fed half-wave (EFHW) or random-wire/end-fed antennas. While long-wire antennas date back to the earliest days, the modern EFHW with 49:1 ununs (unbalanced to unbalanced RF transformers) has become extremely popular for its simplicity, multiband capability, and minimal support requirements.

14. What NASA program lets school kids talk directly to astronauts on the International Space Station using ham radio?

A: ARISS (Amateur Radio on the International Space Station). Many astronauts are licensed hams.

15. For how many years has the Arrowhead Radio Amateurs Club (ARAC) provided life-safety communication and monitoring support for Grandma's Marathon in Duluth?

A: Over 37 years and counting. ARAC operators are stationed at water stops and key points along the course to relay messages quickly for runner safety and real-time event reports and coordination. Grandma's Marathon will be held June 18-20, 2026 in Duluth, MN. Grandma's Marathon started in 1977 after a casual conversation in a Duluth bar about sponsoring a race along the North Shore. 2027 will mark 50 years of this iconic event.

Continued on Page 15

Ham Trivia continued from page 14

ANSWERS, Continued

16. Who are the record holders for the “most wins” in Grandma’s Marathon for the men’s division and for the women’s division?

MEN

A: **Elisha Barno** (Kenya) is indeed the all-time record holder with **six victories** in Grandma’s Marathon — more than any other runner in the race’s history. His Winning Years:

2015

2016

2017

2018 (four consecutive wins)

2023

2024

He is the only runner to achieve four straight titles and the only one with six total wins. In 2025, he did not win (he dropped out due to injury), ending his streak of recent dominance.

WOMEN

Lorraine Moller (New Zealand) and **Mary Akor** (USA) jointly hold the record for the most wins in the women’s division of Grandma’s Marathon, with **3 victories each**.

Lorraine Moller’s Winning Years:

1979

1980

1981 (three consecutive wins)



Mary Akor’s Winning Years:

2007

2008

2009 (three consecutive wins)

No woman has won **Grandma’s Marathon** more than three times. Several runners have two wins (including **Dakotah Lindwurm/Popehn** in 2021–2022), but **Moller and Akor** remain the co-record holders.

17. When was the first Field Day held in the United States?

A: The very first ARRL Field Day was held the second Saturday in June, 1933. It was announced in QST Magazine as a test of portable emergency communications and quickly became annual. The ARAC holds its Field Day event at Spirit Mountain on Lot C. This year’s event officially begins Saturday, June 27th at 1:00 p.m. (Not including set-up!) and ends Sunday, June 28th.

18. When did Spirit Mountain open as a ski resort, and who helped make it happen?

A: It held its grand opening on December 19–20, 1974. The idea came from local ski legend and former Olympian George Hovland, with support from Duluth Mayor Ben Boo and others. The City of Duluth founded and developed the site. It now has expanded to a year-round outdoor family adventure site that includes mountain biking, zip line, alpine coaster, chair lift rides, jumping pillows, putt-putt golf, Superior Hiking Trail, a variety of kids summer adventure camps, special event venue for 300 guests, campground, and of course—skiing. Spirit Mountain celebrated its 50th anniversary of skiing in the 2024–2025 season.

19. What does the acronym “QSL” originally stand for, and how is it most commonly used today by hams?

A: It comes from the Q-code “QSL?” meaning “Do you acknowledge receipt?” or “Can you confirm?” Today, it most often refers to confirmation of a contact—either via a physical QSL card or digital confirmation.

20. What does “73” mean in ham radio, and what is its surprising 19th-century origin?

A: It means “Best Regards” (a friendly sign-off). It comes from the Phillips Code used by landline telegraph operators in the 1850s, where 73 originally meant something like “My compliments” or even “My love to you” before evolving into the standard ham farewell.

21. In modern portable operating, what do the popular acronyms POTA and SOTA stand for?

A: POTA = Parks on the Air (activating public parks, forests, etc.). SOTA = Summits on the Air (operating from designated mountain summits). Both are fast-growing activities that combine ham radio with outdoor adventure.

22. What does the digital mode “FT8” stand for, and why has it become one of the most popular modes on HF bands?

A: It stands for Franke-Taylor 8 (named after developers Steve Franke K9AN and Joe Taylor K1JT; the “8” refers to its 8-frequency shift keying). It is extremely popular because it can decode signals well below the noise floor and completes contacts in about 15 seconds, making weak-signal DX and portable operation much easier.

23. What does the signal report system “RST” stand for, and when is the “T” (Tone) portion normally used?

A: Readability, Strength, Tone. The “Tone” part (1–9 scale) is used only for CW (Morse code) reports to describe the quality of the transmitted signal tone. On phone/voice, reports are usually just “RS”

24. What tech giant became a ham as a kid?

A: Apple Co-Founder Steve Wozniak WA6BND (earlier WV6VLY) was fascinated with amateur radio and obtained his license as a kid. He credits ham radio with sparking his electronics passion

25. What legendary actor and ham radio operator used his Oscar Statue as a doorstop in his home?

A: Marlon Brando, Call sign FO5GJ (and KE6PZH)

Continued on Page 16

ANSWERS, Continued

26. Ham radio operator Bob Heil, K9EID was a pioneer in what way?

A: Dr. Robert “Bob” Heil pioneered live-in-concert sound for various rock and roll groups beginning in the mid 1960’s. Heil was responsible for taking the world of live rock and roll from a fairly puny sound from the band’s amps, to the booming wall to wall of volume we enjoy today during concerts. He worked with The Who, The Grateful Dead, Jeff Beck, Joe Walsh and many other early performers. The “talking guitar” that artist Peter Frampton played in the 1970’s was another one of Bob’s creations. In the world of music, sound, and amateur radio, Bob Heil was truly legendary. His company Heil Sound still manufactures products that are used in music and communications. Bob designed high-quality microphones, headsets, and audio processing equipment specifically optimized for ham radio voice articulation and clarity — especially important for emergency communications and DXing. Though he became a silent key in 2024, we were truly blessed to have Bob as a featured speaker at an ARAC Club meeting a few years ago. He brought love and dedication of his lifelong passion for ham radio to his “Ham Nation” podcasts, videos, interviews and personal appearances. An ARRL Life Member and member of the ARRL Maxim Society, Bob sparked interest and awe to listeners worldwide at his matter-of-fact explanations of the most intricate aspects of radio and sound engineering. Bob was a genuinely wonderful man, a dedicated mentor, and a bridge between the worlds of professional audio and amateur radio. His enthusiasm, kindness, and “can-do” spirit will be greatly missed.

Here’s an excerpt of a Bob Heil tribute in Front of House (FoH) Magazine from industry professionals who worked with Bob over the decades:

ST. LOUIS, MO – Bob Heil, one of the founding fathers of concert touring, the first audio manufacturer enshrined in Rock and Roll Hall of Fame, and a 2007 Parnelli Awards Audio Innovator Lifetime Honoree, passed away Feb. 28, 2024 of cancer. He was 83.

This blissfully always-exuberant audio pioneer began his career owning a humble music instrument store in a small town in southern Illinois. There he built his first electronic crossover in 1967, using only a couple of little transistors and two filters; built the first modular console (the Mavis); and developed the iconic Heil Talk Box, made famous by Joe Walsh and Peter Frampton. He was a pioneer of horn designs, and the first to make them in white as he liked to say he “got tired of seeing green and gray speakers.”

In 1978, he published “the bible” of the business, *The Practical Guide for Concert Sound*, and dog-eared copies are still found shoved in the back pockets of burgeoning sound engineers everywhere. Other firsts include being the first sound company to be honored with an AES “Pioneer Award.” Perhaps most significantly, he founded Heil Sound in 2006, creating world class microphones for not only live events, but for his other passion, the ham radio market. In addition to Walsh and Frampton, his long list of clients (many of whom became lifelong friends) include the Grateful Dead, Pete Townshend, Jon Bon Jovi, Beck, and scores of others.

“Bob was a vital force and key founder of concert sound who improved how we experience live music from the earliest days,” says FOH Senior Writer and Parnelli Producer Kevin Mitchell. “His enthusiasm for life was contagious, and he brought a smile to all in his presence. He was also a St. Louis area legend, appreciated and honored, including receiving an honorary doctorate from the University of St. Louis. He will be greatly missed by his hometown where he was a professional organist starting in his early teens and beyond.”



Audio Pioneer/Innovator Bob Heil K9EID (1940 – 2024)

Since 1970...

Groups such as THE WHO, BUBBLER, JIMMY BECK have relied on HEIL SOUND SYSTEMS for their ultimate sound while touring. For years, HEIL SOUND was available only for the major touring acts.

HEIL SOUND SYSTEM
HEIL Industrial Boulevard
Marion, Illinois 62257
618.293.3000

An advertisement for Heil Sound System. It features a stack of several large, black and silver speakers. A person is sitting on the floor in front of the stack. The text describes the system's history and availability.

HEIL
HAM RADIO

Continued on Page 17

The logo for Heil Ham Radio, featuring the word "HEIL" in a large, bold, blue font and "HAM RADIO" in a smaller, black font below it.

Ham Trivia continued from page 16

ANSWERS Continued: Ham Radio Goes to the Movies

Now, the final answers in our Ham Radio Trivia edition of the Relay:

27. In which 2000 film do a father and son use a ham radio to communicate across 30 years of time?

A: *Frequency*, Directed by Gregory Hoblit and starring Dennis Quaid and Jim Caviezel.

A father and son communicate across time, 30 years apart, via an old ham radio during a rare aurora. One of the best-known and most beloved ham radio movies — it's often cited as the ultimate "ham radio fantasy" film. Despite the father-son theme, this thriller is NOT for children. Repeated scenes that lead to tracking a violent serial killer should be viewed by an adult audience. This is one of yours truly's all-time thriller favorites.

28. What 1988 thriller depicts ham radio's help in an international effort to catch a murderer?

A: *High Frequency* (1988) Directed by Faliero Rosati, starring Vincent Spano, Anne Parillaud, and Oliver Benny.

A young American boy operating a powerful ham radio and an a satellite station worker from the opposite side of the world witness the same murder—and team up to stop the killer.

29. What John Travolta film shows his character using ham radio?

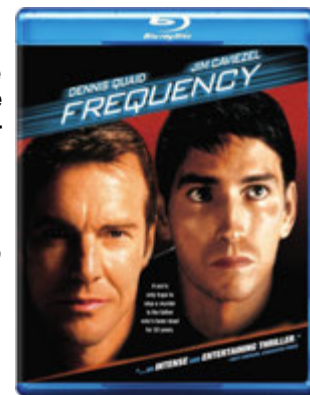
A: *Phenomenon* (1996) Stars John Travolta, Kyra Sedgwick, Robert Duvall, & Forest Whitaker.

After gaining sudden extraordinary mental abilities, mechanic George Malley (Travolta) searches for answers and uses ham radio to connect with people worldwide. Government agents discover George's amazing capabilities and endeavor to secure him for study. Dr. Brundel (Duvall) swoops in to assist George to shine light on the true cause of his condition, while moral support is offered by townspeople Lace (Sedgwick) and Nate (Whitaker).

30. What serial "Park" film depicts emergency ham radio use in its third "chapter" of the series?

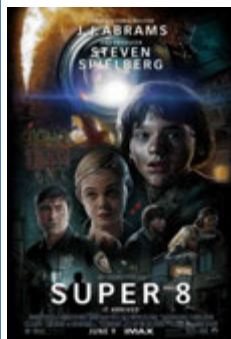
A: *Jurassic Park III* (2001) – Directed by Joe Johnston, starring Sam Neill, William H. Macy, and Tea Leoni.

After being persuaded by a wealthy businessman to conduct an aerial tour of Isla Sorna, In Gen's second site for a failed Jurassic Park experiment, Dr. Alan Grant discovers the true reason for his invitation. A tragic accident maroons the party of seven, and they try their best to escape with their lives. The survivors use ham radio in attempts to call for rescue.



Ham Radio Goes to the Movies: Honorable Mentions for Summer

Not every movie with ham radio made our trivia question list, but here are some others to check out this summer:



Super 8 (2011) Directed by J.J. Abrams and co-produced by Steven Spielberg. The film stars Joel Courtney, Elle Fanning, and Kyle Chandler.

Set in 1979, a group of teenagers in small town Ohio are filming their Super 8 movie when they witness a sudden train derailment and find strange white cubes in the surrounding wreckage. Air Force personnel swarm the scene and the teenagers flee. Weird phenomena begin to happen around town. The kids use a ham radio (among other tools) during key scenes involving an alien threat. A nostalgic glimpse into 1970s amateur radio tech and old-school movie making.

Super 8 Awards & Nominations: Four nominations at the 17th Critics' Choice Awards, including Best Action Movie and Best Young Actor/Actress (Fanning). Eight nominations at the 38th Saturn Awards, including Best Science Fiction Film, and won 3 awards – Best Director (Abrams), Best Performance by a Younger Actor (Courtney) and Best Music (Michael Giacchino). Fanning also received a nomination for Best Break-through Performance at the 2012 MTV Movie Awards.

If All the Guys in the World... (1956) (French: Si tous les gars du monde...)

Directed by Christian-Jaque and starring André Valmy, Jean Gaven, Marc Cassot, Georges Poujouly, Doudou Babet.

A classic international drama. A young Parisian ham radio operator picks up an SOS from a North Sea vessel in distress and coordinates with hams around the globe to prevent a disaster. One of the earliest and most earnest films centered entirely on amateur radio's lifesaving power.

The Glass Bottom Boat (1966) – Romantic spy comedy film directed by Frank Tashlin and starring Doris Day, Rod Taylor, and Arthur Godfrey. The Doris Day character has ham radio gear and QSL cards in her home. Amateur radio is not central to the plot, but a fun look at a top box office film of yesteryear.

Radio Hams (1939) A Short MGM documentary-style film directed by Felix E. Feist, showcasing amateur radio history (at the time of 1939, of course!) I just learned of this film and am greatly looking forward to seeing it on YouTube.

We hope you enjoyed this "trivia themed" edition of The Relay. We'd love to hear your thoughts on what other fun facts you think should make it into next year's trivia list. Email your ideas to ke0nqs.mn@gmail.com

See you next time, when we celebrate the **United States of America's 250th Birthday** in our **July 2026** edition of **The Relay**★



Contest Calendar - June 2026

- + HA3NS Sprint Memorial Contest
 - + K1USN Slow Speed Test
 - + VK Shires Contest
 - + PODXS 070 Club Three Day Weekend Contest
 - + Tisza Cup CW Contest

 - + Wake-Up! QRP Sprint

 - + UKSMG Summer Contest
 - + Kentucky QSO Party
 - + IARU Region 1 Field Day, CW
 - + RSGB National Field Day
 - + ARRL Inter. Digital Contest
 - + Atlantic Canada QSO Party
 - + K1USN Slow Speed Test
 - + ICWC Medium Speed Test
 - + OK1WC Memorial (MWC)
 - + ICWC Medium Speed Test
 - + Worldwide Sideband Activity Contest
 - + ICWC Medium Speed Test
 - + DARC CW-Training Contest
 - + Tuesday's Telegraphy Contest
 - + NAQCC CW Sprint
 - + Phone Weekly Test
 - + A1Club AWT
 - + CWops Test (CWT)
 - + VHF-UHF FT8 Activity Contest
- 1900Z-1929Z, Jun 5 (40m) and
1930Z-1959Z, Jun 5 (80m)
2000Z-2100Z, Jun 5
0000Z-2359Z, Jun 6
0000Z, Jun 6 to 2359Z, Jun 8
0000Z-1459Z, Jun 6
0600Z-0629Z, Jun 6 and
0630Z-0659Z, Jun 6 and
0700Z-0729Z, Jun 6 and
0730Z-0800Z, Jun 6
1300Z, Jun 6 to 1300Z, Jun 7
1300Z, June 6 to 0100Z, Jun 7
1500Z, Jun 6 to 1459Z, Jun 7
1500Z, Jun 6 to 1500Z, Jun 7
1800Z, Jun 6 to 2400Z, Jun 7
1400Z, Jun 7 to 0100Z, Jun 8
0000Z-0100Z, Jun 8
1300Z-1400Z, Jun 8
1630Z-1729Z, Jun 8
1900Z-2000Z, Jun 8
0100Z-0159Z, Jun 9
0300Z-0400Z, Jun 9
1800Z-1859Z, Jun 9
1930Z-2030Z, Jun 9
0030Z-0230Z, Jun 10
0230Z-0300Z, Jun 10
1145Z-1300Z, Jun 10
1300Z-1400Z, Jun 10
1700Z-2100Z, Jun 10

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Contest Calendar - June 2026

+ Mini-Test 40	1700Z-1759Z, Jun 10
+ Mini-Test 80	1800Z-1859Z, Jun 10
+ RSGB 80m Club Championship, CW	1900Z-2030Z, Jun 10
+ CWops Test (CWT)	1900Z-2000Z, Jun 10
+ PVRC Reunion	2100Z-2400Z, Jun 10
+ VHF-UHF FT8 Activity Contest-NA	0000Z-0500Z, Jun 11
+ CWops Test (CWT)	0300Z-0400Z, Jun 11
+ CWops Test (CWT)	0700Z-0800Z, Jun 11
+ PVRC Reunion	2200Z, Jun 11 to 0100Z, Jun 12
+ NCCC FT4 Sprint	0100Z-0130Z, Jun 12
+ Weekly RTTY Test	0145Z-0215Z, Jun 12
+ NCCC Sprint	0230Z-0300Z, Jun 12
+ K1USN Slow Speed Test	2000Z-2100Z, Jun 12
+ PVRC Reunion	2300Z, Jun 12 to 0200Z, Jun 13
+ YB ORARI DX Contest	0000Z-2359Z, Jun 13
+ Asia-Pacific Sprint, SSB	1100Z-1300Z, Jun 13
+ SKCC Weekend Sprintathon	1200Z, Jun 13 to 2400Z, Jun 14
+ Portugal Day Contest	1200Z, Jun 13 to 1200Z, Jun 14
+ AGCW VHF/UHF Contest	1400Z-1700Z, Jun 13 (144) and 1700Z-1800Z, Jun 13 (432)
+ REF DDFM 6m Contest	1400Z, Jun 13 to 1400Z, Jun 14
+ GACW WWSA CW DX Contest	1500Z, Jun 13 to 1500Z, Jun 14
+ ARRL June VHF Contest	1800Z, Jun 13 to 0259Z, Jun 15
+ 4 States QRP Group Second Sunday Sprint	0000Z-0200Z, Jun 15
+ K1USN Slow Speed Test	0000Z-0100Z, Jun 15
+ ICWC Medium Speed Test	1300Z-1400Z, Jun 15
+ OK1WC Memorial (MWC)	1630Z-1729Z, Jun 15
+ RSGB FT4 Contest	1900Z-2100Z, Jun 15
+ ICWC Medium Speed Test	1900Z-2000Z, Jun 15

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Contest Calendar - June 2026

+ Worldwide Sideband Activity Contest	0100Z-0159Z, Jun 16
+ ICWC Medium Speed Test	0300Z-0400Z, Jun 16
+ SARL Youth QSO Party	1200Z-1300Z, Jun 16
+ Tuesday's Telegraphy Contest	1930Z-2030Z, Jun 16
+ NAQCC CW Sprint	0030Z-0230Z, Jun 17
+ Phone Weekly Test	0230Z-0300Z, Jun 17
+ A1Club AWT	1145Z-1300Z, Jun 17
+ CWops Test (CWT)	1300Z-1400Z, Jun 17
+ VHF-UHF FT8 Activity Contest	1700Z-2100Z, Jun 17
+ Mini-Test 40	1700Z-1759Z, Jun 17
+ Mini-Test 80	1800Z-1859Z, Jun 17
+ CWops Test (CWT)	1900Z-2000Z, Jun 17
+ VHF-UHF FT8 Activity Contest-NA	0000Z-0500Z, Jun 18
+ Walk for the Bacon QRP Contest	0000Z-0100Z, Jun 18 and 0200Z-0300Z, Jun 19
+ CWops Test (CWT)	0300Z-0400Z, Jun 18
+ CWops Test (CWT)	0700Z-0800Z, Jun 18
+ NTC QSO Party	1900Z-2000Z, Jun 18
+ QRP Fox Hunt	0100Z-0230Z, Jun 19
+ NCCC FT4 Sprint	0100Z-0130Z, Jun 19
+ Weekly RTTY Test	0145Z-0215Z, Jun 19
+ NCCC Sprint	0230Z-0300Z, Jun 19
+ K1USN Slow Speed Test	2000Z-2100Z, Jun 19
+ All Asian DX Contest, CW	0000Z, Jun 20 to 2400Z, Jun 21
+ SMIRK Contest	0000Z, Jun 20 to 2400Z, Jun 21
+ Feld Hell Sprint	0000Z-2359Z, Jun 20
+ Pajajaran Bogor DX Contest	0000Z-2359Z, Jun 20
+ SKCC QSO Party	1200Z, Jun 20 to 2359Z, Jun 21
+ IARU Region 1 50 MHz Contest	1400Z, Jun 20 to 1400Z, Jun 21

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Contest Calendar - June 2026

+ K1USN Slow Speed Test	0000Z-0100Z, Jun 1
+ ICWC Medium Speed Test	1300Z-1400Z, Jun 1
+ OK1WC Memorial (MWC)	1630Z-1729Z, Jun 1
+ RSGB 80m Club Championship, Data	1900Z-2030Z, Jun 1
+ ICWC Medium Speed Test	1900Z-2000Z, Jun 1
+ ARS Spartan Sprint	0000Z-0200Z, Jun 2
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Jun 2
+ ICWC Medium Speed Test	0300Z-0400Z, Jun 2
+ Tuesday's Telegraphy Contest	1930Z-2030Z, Jun 2
+ Phone Weekly Test	0230Z-0300Z, Jun 3
+ A1Club AWT	1145Z-1300Z, Jun 3
+ CWops Test (CWT)	1300Z-1400Z, Jun 3
+ VHF-UHF FT8 Activity Contest	1700Z-2100Z, Jun 3
+ Mini-Test 40	1700Z-1759Z, Jun 3
+ Mini-Test 80	1800Z-1859Z, Jun 3
+ CWops Test (CWT)	1900Z-2000Z, Jun 3
+ VHF-UHF FT8 Activity Contest-NA	0000Z-0500Z, Jun 4
+ Walk for the Bacon QRP Contest	0000Z-0100Z, Jun 4 and 0200Z-0300Z, Jun 5
+ CWops Test (CWT)	0300Z-0400Z, Jun 4
+ CWops Test (CWT)	0700Z-0800Z, Jun 4 1700Z-1800Z, Jun 4 (CW) and 1800Z-1900Z, Jun 4 (SSB) and 1900Z-2000Z, Jun 4 (FM) and 2000Z-2100Z, Jun 4 (Dig)
+ NRAU 10m Activity Contest	2000Z-2200Z, Jun 4
+ SKCC Sprint Europe	0100Z-0130Z, Jun 5
+ NCCC FT4 Sprint	0145Z-0215Z, Jun 5
+ Weekly RTTY Test	0230Z-0300Z, Jun 5
+ NCCC Sprint	

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Contest Calendar - June 2026

+ LZ International 6-Meter Contest	1400Z, Jun 20 to 1400Z, Jun 21
+ Stew Perry Topband Challenge	1500Z, Jun 20 to 1500Z, Jun 21
+ West Virginia QSO Party	1600Z, Jun 20 to 0400Z, Jun 21
+ ARRL Kids Day	1800Z-2359Z, Jun 20
+ WAB 50 MHz Phone	0800Z-1400Z, Jun 21
+ Run for the Bacon QRP Contest	2300Z, Jun 21 to 0100Z, Jun 22
+ K1USN Slow Speed Test	0000Z-0100Z, Jun 22
+ ICWC Medium Speed Test	1300Z-1400Z, Jun 22
+ OK1WC Memorial (MWC)	1630Z-1729Z, Jun 22
+ ICWC Medium Speed Test	1900Z-2000Z, Jun 22
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Jun 23
+ ICWC Medium Speed Test	0300Z-0400Z, Jun 23
+ Tuesday's Telegraphy Contest	1930Z-2030Z, Jun 23
+ SKCC Sprint	0000Z-0200Z, Jun 24
+ Phone Weekly Test	0230Z-0300Z, Jun 24
+ A1Club AWT	1145Z-1300Z, Jun 24
+ CWops Test (CWT)	1300Z-1400Z, Jun 24
+ Mini-Test 40	1700Z-1759Z, Jun 24
+ Mini-Test 80	1800Z-1859Z, Jun 24
+ CWops Test (CWT)	1900Z-2000Z, Jun 24
+ CWops Test (CWT)	0300Z-0400Z, Jun 25
+ CWops Test (CWT)	0700Z-0800Z, Jun 25
+ RSGB 80m Club Championship, SSB	1900Z-2030Z, Jun 25
+ QRP Fox Hunt	0100Z-0230Z, Jun 26
+ NCCC FT4 Sprint	0100Z-0130Z, Jun 26
+ Weekly RTTY Test	0145Z-0215Z, Jun 26
+ NCCC Sprint	0230Z-0300Z, Jun 26

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Contest Calendar - June 2026

- + K1USN Slow Speed Test 2000Z-2100Z, Jun 26
- + UFT QRP Contest 0600Z-0900Z, Jun 27 and
1400Z-1700Z, Jun 27
- + His Maj. King of Spain Contest, SSB 1200Z, Jun 27 to 1200Z, Jun 28
- + ARRL Field Day 1800Z, Jun 27 to 2100Z, Jun 28
- + K1USN Slow Speed Test 0000Z-0100Z, Jun 29
- + QCX Challenge 1300Z-1400Z, Jun 29
- + ICWC Medium Speed Test 1300Z-1400Z, Jun 29
- + OK1WC Memorial (MWC) 1630Z-1729Z, Jun 29
- + QCX Challenge 1900Z-2000Z, Jun 29
- + ICWC Medium Speed Test 1900Z-2000Z, Jun 29
- + Worldwide Sideband Activity Contest 0100Z-0159Z, Jun 30
- + QCX Challenge 0300Z-0400Z, Jun 30
- + ICWC Medium Speed Test 0300Z-0400Z, Jun 30
- + Tuesday's Telegraphy Contest 1930Z-2030Z, Jun 30

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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