



# The RELAY)))

MAY  
2019

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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## ARRL Volunteers Nixes Ban on Mobile Ham Use

By Steve Waller KEØNQ T  
& Kim Waller KEØNQ S

What if you were permanently banned by state law from operating your mobile ham radio station under the so-called "Minnesota Hands-Free" bill? Well it almost happened right here, under our noses. While the bill's intent was to legislate safe cell phone operation while driving, as originally written, the consequences would be to prohibit use of amateur radio mobile operations as well.

Originally written and approved by both houses of the Minnesota Legislature with no exception for amateur radio, in the final hours of conference committee in March of 2019, the case was made for amending the language to specifically exclude any restrictions on amateur radio operation. The language was changed because ARRL volunteers in Minnesota followed this bill carefully and maintained close communication with lawmakers to defend the rights of amateur radio operators in Minnesota. While this was a decided victory for us at the state level, we need a watchful eye on our behalf in Washington, DC as well.

ARRL's Washington team is also vigorously working at the federal level with congress members in order to identify legislation that could impact amateur radio licensees and operators in all U.S. states and territories. They provide much-needed expert analysis and background information to legislators to help them understand the full scope and importance of amateur radio operation as it pertains to any given bill.

It is essential that we understand how important the work of ARRL is as a powerful force dedicated to protecting and defending our rights as amateur radio operators. The ARRL describes their **Legislative Objectives** :



**ARRL**  
The national association for  
**AMATEUR RADIO®**

To advance the art, science, and enjoyment of Amateur Radio

"The ability of the Amateur Radio Service to maintain and expand its benefits to the public rests on two key elements of public policy: adequate access to the radio spectrum and the ability to install and operate effective Amateur Radio stations.



Join us on  
facebook!

Co-Editors:

Kim & Steve Waller

Kim - KEØNQ S • Steve - KEØNQ T

KEØNQ S.mn@gmail.com  
KEØNQ T@gmail.com


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# PRESIDENT



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

# VICE PRESIDENT




**NØPDG**  
Mike Lovold  
3860 Birchwood Rd  
Downtown Arnold, MN  
55803  
lovoldm@gmail.com

# SECRETARY



**NØCALL**  
Robin Davis  
  
218-391-3077  
davisfam2858@yahoo.com

# TREASURER



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

# 3RD YEAR BOARD

**KD9ABS**  
Gary Minter  
1621 N 26th St  
Superior WI 54880

# 2ND YEAR BOARD



**AAØAC**  
Dave Davis  
  
218-348-6649  
aa0ac@outlook.com

# 1ST YEAR BOARD

**KDØYLN**  
Robert Boyd  
5054 Boulder Dr  
Hermantown, MN 55811

## ARAC Board Meeting Minutes for April 2, 2019

**Present:** Gene Ellefsen-NØVRM, Mike Lovold-NØPDG, Bruce Carlson-KEØNIT, Gary Minter-KD9ABS, Dave Davis-AAØAC, Bob Boyd-KDØYLN, Doug Nelson-AAØAW, Tom Dorr-KEØRHA, Robin Davis

**Guest:** Dennis Anderson-WØDIO, Jim Anderson-NØJWA

Meeting called to order at 6:27 pm

### Minutes:

Posted and in the newsletter, moved to approve by Bruce-KEØNIT, seconded by Bob-KDØLYN, motion passed

### Treasurer's Report:

Checking .....	3,210.74
Savings .....	1,869.17
Cash Subtotal.....	\$5,079.91
 Outstanding Check (Repeater # 1400) ..	<b>-\$1,100.00</b>
 Winter CD .....	1,707.19
CD Subtotal.....	\$1,707.19
 Grand Total .....	\$5,687.10

We did get a dividend on our Savings Account of \$0.92

Is the Coffee Kitty breaking even? The Coffee Kitty was never intended to make money. It is close to a break even over the course of a year. Motion to accept moved by Dave-AAØAC, seconded by Mike-NØPDG, motion passed

### Committee Reports:

#### Testing:

May 4th is all set to go. Tom-KEØRHA will update the web page with the test information. It is posted on ARRL web page. Nothing scheduled after that for now. We will probably run a test session at the end of June. They change the book every four (4) years and the General book changes July 1, 2019

#### Skywarn Training:

April 11, 2019, starts early at 6:00 pm to get our business meeting done before the training starts. Skywarn training starts at 6:30 pm and it is Carol Christian-son-KCØMAK's last year as she is retiring.

#### Ham Fest:

We received the contract. Bruce-KEØNIT will send the signed copy with a check to Bob-KCØNFB. Robin will take care of the pulled pork again. Gene-NØVRM asked Rollie Bockbrader-KBØCK about a gift card and he is getting a \$250.00 card from Thrivent. Robin will get the pork, the brats, the sauerkraut, etc. Gene-NØVRM ask if we can buy a case of Hillshire brats from B&B and she agreed to check with them. Has this group ever thought about asking the Boy Scouts to assist carrying in stuff for the vendors, set up tables, etc? Jim-NØJWA will ask a couple of Scout Masters to see if there would any one available to assist. We had left over pop from the last Ham Fest so Gene-NØVRM will cut down the amount he buys this year again. Gene-NØVRM will check with Scott Ahlgren-NØVYU as to the supplies needed for the fest. Gene-NØVRM asks the Board to check with the Kitchen throughout the Ham Fest for help

Continued on Page 3

## **ARAC BOARD Meeting Minutes, Continued from Page 2**

with moving the coffee pots and emptying the garbage cans, etc. DX Engineering is sending Mike-N0PDG a \$50.00 gift card for the Ham Fest along with a box of catalogs

### Web Page:

Any questions? Tom-KE0RHA has more plans but is starting small with his changes on the Web Page. A compliment was received on how the calendar looks. To get inside the page, click on the small box in the middle with the lines. Thank you for doing it. Send information to Tom-KE0RHA as well as suggestions. His e-mail is listed on the Boards and Committees page. He will add a contact us page or link on the Web Page should anyone want to contact ARAC

### Facebook:

Closed group with Gene-N0VRM or Mike-N0PDG being able to approve membership. They check the contacts the applicant has, if they have a Ham license and the groups they belong to. Facebook has an option to post events and invite the public to them - events like Ham Fest. If there are issues, members can be removed from the page or put on probation. They are policing the Facebook page. Gene-N0VRM looks for a connection to the Club or to the Hobby as well, thinking family members

### Grandma's Marathon:

First meeting is tomorrow night. Scott Ahlgren-N0VYU is shadowing Doug-AA0AW and next year Doug-AA0AW will assist him. If you had an Aid Station and would like to continue at the Aid Station, please contact Doug-AA0AW to let him know. He will only move you from one Aid Station to another Aid Station if you request it.

### ARRL:

We are an affiliate Club with the ARRL again. They give former members two (2) years to reactivate their membership and then remove them from the list. Gene-N0VRM left a message with ARRL and they called him back to reinstate ARAC as a member

### Field Day:

We need somebody to step up to set up Field Day, set up the food, etc., because it is the same weekend as Grandma's Marathon. Doug-AA0AW will not be available this year. We have an understanding that we have the Carlton County Trailer as well as the Douglas County Trailer. Ask Jeff Nast-KC0MKS to contact BJ to see about the Lake County Trailer availability. If no one is planning on attending Field Day, there is no sense in getting trailers, setting up antenna, getting food, the grill and utensils there, etc.

### Skywarn Training:

Available Monday at 7:00 pm in Room 270 at WITC. They encourage attendance to the training every four (4) years

Jeff-KC0MKS's Weather Net is up and running. Reminder that check-ins are at 8:00 pm, Monday, on the 94 Repeater. PL tone is 103.5

### Web Page:

Follow the public Facebook page to promote the Ham Fest and other Club events

Motion to adjourn by Dave-AA0AC, seconded by Mike-N0PDG, motion passed at 7:08 pm

# **ARAC Club Meeting Minutes**

***No Club Meeting Minutes for April, as the meeting was cancelled due to inclement weather.***

# Silent Key

## William A Hunholz—N7HNM

William A. Hunholz, 73, amateur ham radio N7HNM, went silent key on Monday April 8, 2019 at his residence in Meadowlands, Minnesota. He was born September 22, 1945 to Fred and Florine (Beccue) Hunholz in Yuma, Arizona.

Bill graduated from Meadowlands High School, and enlisted in the US Army after High School. He trained in refrigeration and ran his own business working on Alaskan fishing boats. Bill obtained both his private and commercial pilots license, and worked as a deputy sheriff from 1979 to 1986 in San Juan County, Washington.

Bill had a love for ham radio, cars and mechanics of any kind.

He is preceded in death by; his parents; and his brother Steve Hunholz Bill is survived by; his loving wife of 47 years, Pam; two brothers, Bob (Judy) Hunholz, and Jim Hunholz; extended family and friends.

A gathering of friends and family take place at the Meadowlands Community Center on May 18, 2019 between 1pm and 3pm.

## Gerald VanDervort—WD0GUF

Gerald VanDervort, 83, passed away Wednesday, April 10, 2019 at Essentia Health Virginia. Services will be held at a later date.

Gerald Leroy VanDervort was born May 15, 1935 in Bemidji, MN. He attended Superior Central High School. After graduating high school, he was accepted into General Motors Institute in Flint, MI. Here he was, 19 years old, in the fall of 1953 and they were testing the 1955 automobiles - WOW, and they paid him for that! Lower MI did not appeal to him, too much big city, he got homesick and came home to work on the DM&IR. He was also a member of the U.S. Army Disaster Support Team and had some very impressive ID from the Dept.

In lieu of flowers, memorials are preferred to Our Savior's Lutheran Church in Virginia. Arrangements are with Range Funeral Home in Virginia. To sign the online guest book or to send condolences, please visit [www.rangefuneralhomes.com](http://www.rangefuneralhomes.com).

## NORTHLAND WEATHER NET : New Place, New Time

As of **April 1<sup>st</sup>** The **Northland Weather Group Net** changed its repeater and time from Sundays at 7:30 PM on the LSAC repeater system to Mondays at 8:00 PM on the **ARAC repeater system** (146.940 MHz with a tone of 103.5 and standard offset). There be no noticeable difference for those who are checking in on **EchoLink®** due to movement of the EchoLink® node to ARAC's repeater system.

For those who cannot reach ARAC directly by air, please let KCØMKS Jeff Nast know by emailing him at [kc0mks@gmail.com](mailto:kc0mks@gmail.com) . He will add you to the KCØMKS-R EchoLink® authorization list.

### About EchoLink®

EchoLink® software allows licensed Amateur Radio stations to communicate with one another over the Internet, using streaming-audio technology. The program allows worldwide connections to be made between stations, or from computer to station, greatly enhancing Amateur Radio's communications capabilities. There are more than 200,000 validated users worldwide — in 151 of the world's 193 nations — with about 6,000 online at any given time.

Courtesy: EchoLink - Copyright © 2002-2018 EchoLink.org

# 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](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 antenna's 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.

For even more information please open and read the attachment.

Our recruitment team is as follows:

AFA5XK Dave, WB7DRU [wb7dru@gmail.com](mailto:wb7dru@gmail.com)

AFA5ZV Randy, KRØB [afa5zv@gmail.com](mailto:afa5zv@gmail.com)

AFA5JY Reg, KAØRJY [reg\\_cass@msn.com](mailto:reg_cass@msn.com)

# Prez Sez...

It's getting close, in just a few days the Arrowhead Radio Amateurs Club annual **Hamfest** will be here. All tables have been sold out with a waiting list. Bob may have a plan to squeeze in a few more tables for those on the waiting list. This means come with lots of money as there should be a good selection of equipment for sale!

**We do need volunteers to help set up.** We meet at the McDonalds at 21st and Tower Ave at 5:00 AM for breakfast if you choose and the head to the Fairgrounds at 6:00 AM to set up. Vendors are allowed in at 7:00 AM and the Sale starts at 9:00.

**We need volunteers for Ticket sales, Checking hand stamps at the door- and with the prize drawings- a good PA announcer!!!** *Please let me know if you would be willing to help* to make a good fest. We need good participation.

Thank You!!!!

Gene Ellefsen NØVRM

email: [lspitech@mail.com](mailto:lspitech@mail.com)



## National Weather Service SKYWARN® Program

**Skywarn Spotters**  
for the  
**National Weather Service**  
play an important role in our  
warning process and help our  
communities **stay safe!**

**SKYWARN**  
**Annual Training**  
**May 14 @ 7:00 pm**  
**House of Refuge**

# Arrowhead Radio Amateur Club HAM FEST!

**Sat. May 4th, 2019 9:00am – 1:00pm**

HEAD OF THE LAKES FAIRGROUNDS – MULTI  
PURPOSE BUILDING

4700 Tower Ave. (Wisconsin Hwy 35) Superior, WI 54880  
Fairgrounds are located next to the Superior Airport.

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

Free parking for most vehicles.

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

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

Mike's email: [mgcizek@gmail.com](mailto:mgcizek@gmail.com)



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

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

**Testing on site!**

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

www.thearac.org

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

**Table Reservations:**

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

# Hourly Drawings!

# Contest Calendar 2019

## MAY

7th Call Area QSO Party	1300 UTC May 4 to 0700 UTC May 5
Indiana QSO Party	1600 UTC May 4 to 0400 UTC May 5
Delaware QSO Party	1700 UTC May 4 to 2359 UTC May 5
New England QSO Party	2000 UTC May 4 to 2400 UTC May 5

## JUNE

ARRL June VHF Contest	1800 UTC June 8 to 0300 UTC June 10
ARRL Field Day	1800 UTC June 22 to 2100 UTC June 23

## JULY

CQ Worldwide VHF Contest	1800 UTC July 20 to 2100 UTC July 21
North American QSO Party, RTTY	1800 UTC July 20 to 0559 UTC July 21

## AUGUST

ARRL 222 MHz and Up Distance Contest	1800 UTC Aug 3 to 1800 UTC Aug 4
North American QSO Party, CW	1800 UTC Aug 3 to 0600 UTC Aug 4
Maryland-DC QSO Party	1600 UTC Aug 10 to 2400 UTC Aug 11
Rookie Roundup RTTY	1800 UTC to 2359 UTC Aug 18
Hawaii QSO Party	0400 UTC Aug 24 to 0400 UTC Aug 26
Ohio QSO Party	1600 UTC Aug 24 to 0400 UTC Aug 25

## SEPTEMBER

Tennessee QSO Party	1800 UTC Sept 1 to 0300 UTC Sept 2
New Hampshire QSO Party	1600 UTC Sept 21 to 2200 UTC Sept 22
Maine QSO Party	1200 UTC Sept 28 to 1200 UTC Sept 29
Texas QSO Party	1400 UTC Sept 28 to 2000 UTC Sept 29

# 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	—●●●●



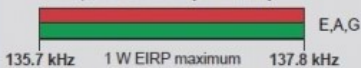
## US Amateur Radio Bands

### US AMATEUR POWER LIMITS

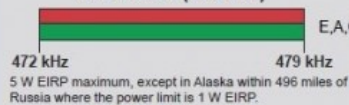
FCC 97.313 An amateur station must use the minimum transmitter power necessary to carry out the desired communications. (b) No station may transmit with a transmitter power exceeding 1.5 kW PEP.

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](http://www.arrl.org/graphical-frequency-allocations) when the bands are fully available for use.

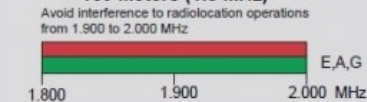
#### 2,200 Meters (135 kHz)



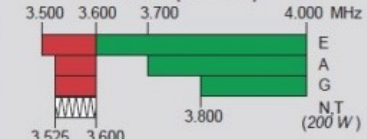
#### 630 Meters (472 kHz)



#### 160 Meters (1.8 MHz)



#### 80 Meters (3.5 MHz)

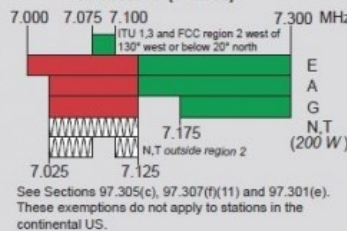


#### 60 Meters (5.3 MHz)

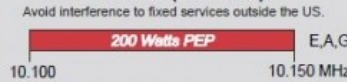


General, Advanced, and Amateur Extra licensees may operate on these five channels on a secondary basis with a maximum effective radiated power (ERP) of 100 W PEP relative to a half-wave dipole. Permitted operating modes include upper sideband voice (USB), CW, RTTY, PSK31 and other digital modes such as PACTOR III. Only one signal at a time is permitted on any channel.

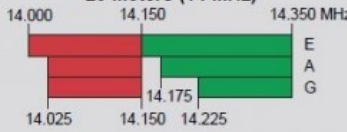
#### 40 Meters (7 MHz)



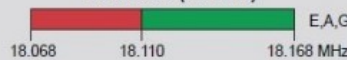
#### 30 Meters (10.1 MHz)



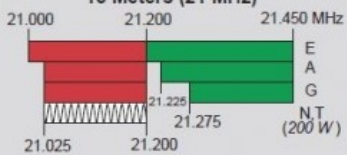
#### 20 Meters (14 MHz)



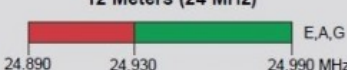
#### 17 Meters (18 MHz)



#### 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](http://ARRLWeb) at [www.arrl.org](http://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](mailto:hq@arrl.org)

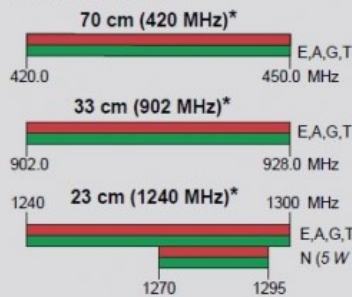
Publication Orders:  
[www.arrl.org/shop](http://www.arrl.org/shop)  
Toll-Free 1-888-277-5289 (860-594-0355)  
email: [orders@arrl.org](mailto:orders@arrl.org)

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

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

Exams: 860-594-0300 email: [vec@arrl.org](mailto:vec@arrl.org)

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



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

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

‡ No pulse emissions



# Nets... Nets... Nets... Nets... Nets... Nets... Nets... Nets...

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

**Wanted!**

Looking to buy a non-working Icom 706 for parts. Email me: [anordin@aol.com](mailto:anordin@aol.com)

Please email your for sales or wanted items to Kim, KE0NQS, at [KE0NQS.mn@gmail.com](mailto:KE0NQS.mn@gmail.com).

## Next ARAC Board Meeting

Tuesday, May 7, 2019  
@ 1830  
Sammy's West Duluth

## Next ARAC Club Meeting

7 p.m. Thursday  
May 9, 2019  
Copper Top Church

KC0NFB, Bob, would like to remind all hams to **make sure your license is current** and up-to-date on your address. You can visit the FCC ULS to check it and make changes at [www.fcc.gov/uls](http://www.fcc.gov/uls).

**Contest Calendar** at [www.contestcalendar.com](http://www.contestcalendar.com)

**National Contest Journal** at [www.ncjweb.com](http://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](http://www.qrz.com)  
**VHF Propagation** site at [www.aprs.mountainlake.k12.mn.us](http://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](http://arrl.org).

## 2019 HOLIDAYS

<b>May 18</b>	<b>Armed Forces Day</b>
<b>May 27</b>	<b>Memorial Day</b>
<b>July 4</b>	<b>Independence Day</b>
<b>September 2</b>	<b>Labor Day</b>
<b>November 11</b>	<b>Veteran's Day</b>
<b>November 28</b>	<b>Thanksgiving</b>
<b>December 25</b>	<b>Christmas Day</b>

## Upcoming 2019 Local Events

Confirmed Dates for 2019 (Correct as of publication)

- May 4 Hamfest & Training
- May 14 Skywarn Training

## Club Repeater

# W0GKP

# 146.94 (-)

# CTCSS Tone

# 103.5

## Upcoming 2019 Meeting Programs

TBD

Interested in providing a program, or have an idea for one? Contact Mike N0PDGP at [lovoldm@gmail.com](mailto:lovoldm@gmail.com)

# Duluth Area Repeaters



## ARAC System WØGKP

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

## N9MMU/N9QWH System (WI)

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

## WECOMM – WI Statewide Linked System WE9COM

147.075 plus 110.9 Meteor Hill (closest repeater to Duluth)

## LSAC System #1

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

## NARC System NAØRC

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

## Stand Alone Repeaters

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

## Fusion and D Star

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

147.15Ø	plus	151.4	NTØB Gilbert Fusion Rptr
145.17Ø	minus	11Ø.9	WA9KLM Superior – Douglas County RACES/ARES Fusion Repeater

443.1ØØ +5.ØØ 1Ø3.5 KBØYHX Cloquet – Carlton County RACES/ARES Fusion Repeater

444.3ØØ +5.ØØ 1Ø3.5 NØEO Spirit Valley Amateurs Fusion Repeater WIRES-X NØEO

147.375 plus NØEO D Star  
442.2ØØ plus NØEO D Star

[Repeater list compiled by Dr. Frequency—KCØWDQ]

## ST. Louis County Department of Emergency Services Net Control Roster

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

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

## Ten Meter SSB Net Control Roster

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

*Sunday Nights at 2ØØØ on 28.45Ø MHz USB*

## Ten Meter CW Net Control Roster

<b>AAØAW</b>	Doug Nelson	<b>NØPDG</b>	Mike Lovold
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*Sunday Nights at 193Ø on 28.125 MHz*

## Northland Weather Group Net Control Roster

**KCØMKS** Jeff Nast

*Monday Nights at 2ØØØ on the ARAC System*

## Douglas County Net

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

## Central Carlton County Net

*Tuesday Nights at 2Ø3Ø on the ARAC System*

## Lake County RACES/ARES Net

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



# Elmers



**El-mer / el-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.

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

# Membership E-mail Directory

Ahlgren, Scott NØVYU  
sahlgren01@msn.com

Anderson, Jim NØJWA  
kcØmko@centurylink.net

Anway, Allen KC9LJN  
allen@a2d2.com

Anway, Dorothy KC9LSG  
dorothy@a2d2.com

Bakke, Richard KDØQHE  
rabakke46@aol.com

Barnes, Ray KEØZN  
KEØZN@outdrs.net

Blodgett, Warren KDØXI  
kdØxi@aol.com

Blotti, Nick KBØMHD  
NickBlotti@hotmail.com

Bockbrader, Jonah KEØCXD  
j@pelirrojo.ninja

Bockbrader, Rollie KBØCK  
Rollie.bockbrader@q.com

Clemens, Butch KBØSMG  
kbØsmg@2z.net

Currier, Barb  
bjcurrier@peoplepc.com

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

Dallavia, Paul KCØWDQ  
kcØwdq@yahoo.com

Daly, Ed KØYMF  
eddalymn@aol.com

Ellefsen, Gene NØVRM  
Ispitech@mail.com

Ferch, Tim AKØTF  
akØtf@aol.com

Fisher, Bud NØGGF  
nØggf@arrl.net

Ferguson, Tom WBØDHB  
tferg5@msn.com

Fleischman, Bill KCØZZL  
wfleisch@d.umn.edu

Forsyth, Grant KCØWUP  
forsythgrantc@gmail.com

Frederick, Jerry NØBNG  
nØbng@mchsi.com

Frederick, Julie NØPIE  
jfreds@mchsi.com

Fuller, Donn ADØN  
donnfuller@midco.net

Freeman, Roger NØGRX  
rf2134@aol.com

Gibbs, Rex NØKXT  
nØkxt@yahoo.com

Godbout, Med WØEEZ  
wØeezmedgodbout@centurytel.net

Hanson, Gary NUØW  
captaingary@chartermi.net

Harstad, Ben KEØJDB  
coast\_guard\_aux\_duluth@yahoo.com

Hawkinson, Garry WØELH  
garryhawkinson@yahoo.com

Jakubek, Patrick KDØSGK  
kdØsgk@gmail.com

Johnson, Randy AAØME  
randy@nsw4x4.com

Leslie, Shirl KBØSBM  
dsleslie@centurytel.net

Makowski, Cletus KBØLBS  
kbØlbs52@msn.com

Makowski, Karen NØWEZ  
k-wez1@hotmail.com

Marchetti, Jim KEØLHX  
jimmarchetti@live.com

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

McCorison, Derek WØDNF  
derek1Ø68@hotmail.com

Meese, Joe WØLWU  
rxcpd@yahoo.com

Miller, Dave WØNWO  
dmiller@nwoutlet.com

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

Murray, Edwin W1ELM  
w1elm@arrl.net

Nast, Jeffrey KCØMKS  
kcØmks@gmail.com

Nelson, Doug AAØAW  
aaØaw@chartermi.net

Nelson, Glenn KAØGGG  
mgnelson1@aol.com

Nelson, John KBØSUW  
jon275@q.com

Nordin, Al WBØDBQ  
anordin@aol.com

Olson, Lloyd Sr. KCØSJB  
rdrunner5Ø7@aol.com

Olson, Lloyd Jr. KC9JTC  
kc9jtc@yahoo.com

Pearson, Wayne WØKRH  
meppsy@netzero.net

Pettit, Kathy KCØYVM  
kcØyvm@gmail.com

Pomroy, Deb KCØUKC  
dpomroy@d.umn.edu

Pyrlik, David KEØHHQ  
David.pyrlik@gmail.com

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

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

Contact Kim or Steve Waller to include your name in this list-

Rosell, Dawson KEØHEL  
rosel032@d.umn.edu

Rude, Mark AKØZ  
rudemark@q.com

Saunders, Diane KØDSL  
keØaqu@charter.net

Scholz, Greg KDØUYN  
kdØuyn@gmail.com

Schulz, Robert KCØNFB  
kcØnfb@charter.net

Snyder, Mark ACØLE  
snyds1118@msn.com

Stark, John KCØYVH  
johnvinyl@yahoo.com

Stroud, Butch KCØPDK  
kenwren@netzero.net

Swanson, Scott N9DMG  
sswanson6749@charter.net

Waller, Kim KEØNQS  
keØnqs.mn@gmail.com

Waller, Steve KEØNQT  
keØnqt@gmail.com

Whelan, Jacqui KBØJIM  
cndymx@gmail.com

Whelan, John KØJRW  
jr-whelan@hotmail.com

Winterscheidt, Heinz KD6FSA  
alter.skipper@gmail.com

Wulf Gar WU1FGR  
wu1fgr.ham@gmail.com

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

Co-Editors,  
Kim & Steve Waller  
KEØNQS & KEØNQT



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

# MAY

## CLUB EVENTS

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

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4 ARAC HAMFEST & TESTING 0900-0100 @ Head of the Lakes Fairgrounds
5  CW 1930 AA0AW USB 2000 K9KDK ES 2100 KC0WDQ	6  WX 2000 KC0MKS	7 ARAC BOARD MEETING 1900 Sammy's West Duluth  DC Net 2000 CC Net 2030	8 Lake County ARES/RACES Meeting 1800  Lake County Net 1900	9 ARAC Club Meeting @ 1900 Coppertop	10	11
12  CW 1930 N0PDG USB 2000 W0DIO ES 2100 N0VRM	13 DC ARES/ RACES Mtg 1900 DC EOC  WX 2000 KC0MKS	14 Skywarn Training 1900 @ House of Refuge  DC Net 2000	15 St. Louis Coun- ty ARES/ RACES Mtg 1630 Pike Lake EOC	16	17	18
19  CW 1930 AA0AW USB 2000 N0VRM ES 2100 K0DSL	20  WX 2000 KC0MKS	21 DC Net 2000 CC Net 2030	22 Lake County Net 1900	23 Carlton County ARES/RACES Meeting 1900 CC EOC	24	25 Club Breakfast @ The Chalet 0730-0800
26  CW 1930 N0PDG USB 2000 N0PDG ES 2100 AA0AW	27  WX 2000 KC0MKS	28 DC Net 2000 CC Net 2030	29 Lake County Net 1900	30	31	

Get this newsletter *faster*  
via email!

Email Doug AAØAW at  
[aa0aw@chartermi.net](mailto:aa0aw@chartermi.net)

Next Meeting: Thursday,  
May 9, 2019 - 7 pm

New hams who have joined our community in the last few weeks, as well as those who have newly upgraded — to General or Extra:

Pat Hayden, KC0JRJ, upgraded to General Class

**Congratulations** to: New members of ARAC:

Scott Palacheck - W4LGG of Duluth

## ARAC Committee Chairs

**Club License Trustee:**

Ray Barnes KEØZN

**Control Operators:**

AAØAW - NØKXT - KCØNFB

**Newsletter:**

Kim KEØNQS & Steve KEØNQT Waller

**Education Chair:**

Bob Schulz KCØNFB

**Hamfest Chair:**

Bob Schulz KCØNFB

**Chaplains:**

**Visiting Chaplains:**

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:**

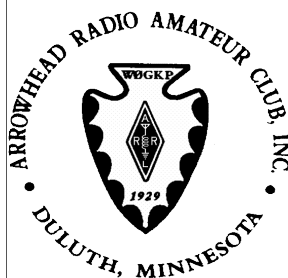
Dennis Anderson WØDIO

**Picnic Chair:**

Scott Ahlgren, NØVYU

**Repeater Chairs:**

Randy Haglin NØBZZ  
Randy Wabik KAØJZV



### 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.



## ARRL, Continued from Page 1

“To implement these two key elements of public policy... the following legislative objectives were developed and approved by the ARRL Board to guide the efforts of ARRL volunteers and staff [in the past few years]:

- Objective #1: The ARRL Seeks legislation instructing the FCC to extend the requirement for “reasonable accommodation” of Amateur Radio station antennas (a requirement that now applies to state and local regulations) to all forms of land use regulation.
- Objective #2: The ARRL opposes legislation that would leave to the reallocation of amateur spectrum or to sharing arrangements that reduce the utility of existing allocations.
- Objective #3: The ARRL opposes legislation that diminishes the rights of federal licensees in favor of unlicensed emitters or encourages the deployment of spectrum-polluting technologies.
- Objective #4: The ARRL seeks recognition of the unique resources, capabilities, and expertise of the Amateur Radio Service in any legislation addressing communications issues related to emergencies, disasters or homeland security.
- Objective #5: The ARRL supports complementary legislative objectives of other radio communication services, particularly the public safety and scientific services that require spectrum access and protection from interference for noncommercial purposes that benefit the public.
- Objective #6: The ARRL opposes “distracted driving” legislation that does not clearly define the class of devices included in the regulation so as to exclude two-way mobile radio transmitters or receivers used by the licensees of the Federal Communications Commission in the Amateur Radio Service.
- Objective #7: The ARRL supports legislation authorizing FCC Commissioners to appoint an electrical engineer or scientist as an additional member of their staffs to ensure that Commissioners have adequate access to technical expertise when making decisions.

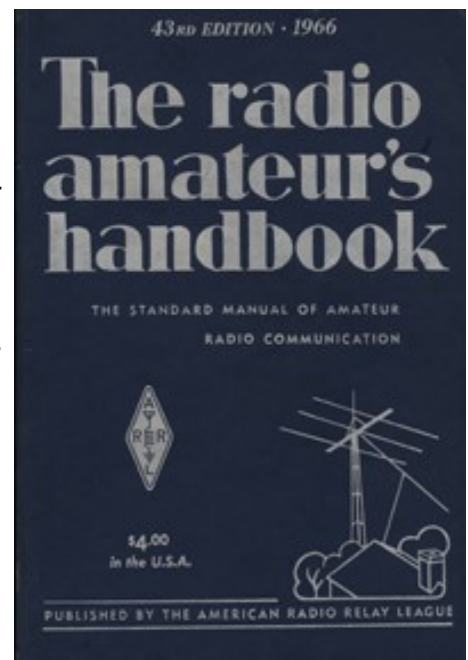
### How did the ARRL become such a pivotal advocate for our hobby?

They have a long and distinguished history of doing just that for 105 years, beginning in 1914, just 2 years after amateur radio licensing began. In 1917, during World War I, the U.S. Navy took control of all radio use “for the duration of the war”, as 6,000 radio amateurs were shut down and 4,000 of them enlisted in the U.S. military. In fact, legislation was introduced to give the Navy **permanent** control of all radio operations. The ARRL launched its “Blue Card Campaign” in 1918, a public effort tirelessly pursuing legislators to get amateur radio back on the air and successfully did so by September of 1919. A fierce advocate organization was born and they’ve set a world standard ever since.

Pivotal in establishing amateur radio standards and practices of the new hobby, in 1926 ARRL published the first edition of *Amateur Radio Handbook*. An instant success, it became the world standard as a reference book from then on. Soon thereafter, ARRL held its first contest, called the 1928 International Relay Party and in 1933 held its first National Field Day. From 1935-1937 ARRL formed the Amateur Radio Emergency Service (ARES) and gained momentum as the authority for emergency communication protocols.

The ARRL continued to work closely with the newly-established FCC, assisting with technical expertise and supplies during World War II and developing new FCC rules called Basis and Purpose of Amateur Radio in the 1950s.

In 1984, the FCC delegated license testing to ARRL’s Volunteer Examiner Coordinators and the ARRL’s work on the



Continued on Page 16

PRB-1 policy helped amateurs get zoning permission for antennas in 1985.

Over the years, governing authorities on the local, state and national level have come to recognize and respect ARRL's expertise in preparing amateur radio operators to provide emergency operations through several national emergencies such as the 9/11/2001 World Trade Center attack, Hurricane Katrina, Mudslides in the Pacific Northwest, Wildfires in California, and Hurricanes in Texas and Puerto Rico.

This gives ARRL established credibility as subject matter experts locally and nationally when advocating for policies that ensure that the future of the amateur radio is unencumbered and protected.

Though ARRL volunteers in Minnesota were successful in defending us as mobile amateur radio operators in the recent "Hands-free Bill", an April 1<sup>st</sup> ARRL email reports on important recent activity by ARRL members at the federal level, to ensure all states have federal protection from restricting mobile amateur radio operation. They said:

"Jerry Oxendine, K4KWh, of Gastonia, North Carolina wants the FCC to clarify that state and localities should have no authority to regulate Amateur Radio with respect to enacting "distracted driving" statutes. In his *Petition for Rule Making*, now designated as **RM-11833**, Oxendine contends that such statutes violate FCC rules on scope and operation of equipment by licensees; violate the intent of the FCC and Congress with respect to Amateur Radio's role in disasters, and hinders emergency operations using mobile equipment.

"There is *no* evidence that the operation of two-way radio has but an insignificant impact on 'distracted driving,'" Oxendine stated.

"Such distracted driving statutes usurp the authority of the FCC to regulate Amateur Radio, as well as Citizens Band and Part 90 Land Mobile Service users, Oxendine said in his *Petition*."

Here, here, Jerry. As fellow ham radio operators, you have our firm support of your rule making petition to the FCC and we anticipate your successful effort! We need to continue to "band together" for the sake of the hobby and that's why it is so important that we each join the ARRL. Those membership dues repay incalculable dividends in defense of amateur radio as we know it. Without perhaps even knowing it, we were a whisker away from losing our mobile operating rights in Minnesota, if not for the watchful eye of ARRL volunteers. ★

**Are you an ARRL Member yet?**

Join today at <https://www.arrl.org/join-arrl-renew-membership>

As an ARRL member, you receive all the latest news bulletins, ARRL book info, event updates and a link to QST Magazine's digital edition in your email inbox throughout the month.



**ARRL TO HOLD NATIONAL CONVENTION AT HAMVENTION® IN MAY 17-19, 2019**

**Where:** Greene County Fairgrounds and Expo Center

120 Fairground Road, Xenia, Ohio 45385

**Official websites:**

[www.hamvention.org](http://www.hamvention.org)  
[www.arrl.org/expo](http://www.arrl.org/expo)

**Convention Tickets:** [hamvention.org](http://hamvention.org)