VOLUME 73
ISSUE 6 & 7 July 2022

PPRAA Club Officers

President	**Steiner, LD WØXLD**
Vice President	**Brown, Derek KØATV +**
Secretary	**Mitchell, Anthony KEØLQK +**
Treasurer	**Dick Kohlhaas, W5UDM+**
Ø-Beat Editor	**Jerre Redding, WAØBCM**
Webmaster	**Douglas Nielsen, N7LEM**
Past President	**Don Dubon, N6JRL**
Board	**John Bloodgood, KD0SFY ***
Board	**Damon, Kyle KDØTRD**
Board	**Molter, Dave ADØQD**
Board	**Shaiffer, George KEØQCC**
Board	**Jim Bishop, KD0KQL**
Board	**Mikr Walter KEØTWK ***
Board	**Daniel Burtis, KEØWJL ***
Board	**Walker, Craig KEØRGP ***

* In final year of 2-year term
+ One year officer position

All officers can be contacted at: boardmembers@ppraa.org

Monthly Ham Breakfast

Big Train (RI), 5901 Delmonico Dr. Saturday, Aug 6, 2022 -----KKTV states this location closed permanently in January 2022-----

PPRAA Board Meeting (July 11) at IHOP 3090 N Chestnut St, Colorado Springs, CO 80907.

PPRAA General Membership meeting (July 13) will be at King Buffet located at 801 N Academy

– There will be both an online meeting via Zoom and in the restaurant. The business meeting starts at 7 PM, but get your dinner and beverage of choice and check in any time after 6 PM for a social hour. Club members check your email for info or email **Officers** to receive the Zoom information.

Postponed to 2025: 2020 ARRL Rocky Mountain Division Convention – Hamcon Colorado 2020
– More info **here.**

Dave Kalter Memorial Youth DX Adventure
– July 14-19, 2022
– On the Air from Curacao
– Sponsored by PPRAA

PPRAA MegaFest
– Saturday, 16 July 2022 0800-1300
– See MegaFest tab above

Dayton Hamvention
– 20-22 May 2022
– Greene County Fairgrounds, Xenia, OH
– More info **here**

Museum Ships Weekend Event
– Friday June 3, 1800hrs to Sunday June 5, 2022, 1800hrs– On Air
– More info **here.**

Denver Radio Club Ham Fest
– Sunday August 28, 2022 (0900-1300)
– Adams County Fairgrounds
– Brighton, Colorado
– More info **here.**

ARRL Rocky Mountain Division Convention
– 7-9 October 2022
– Archer Event Center, Cheyenne, WY
– More info **here**

PPRAA
Pikes Peak Radio Amateur Association

Report written by: Anthony Mitchell, KE0LQK, Club Secretary
March 2022 General Meeting Minutes
March 9th, 2022
Location: King Buffet, 801 N Academy Blvd, Colorado Springs, CO 80909, and Zoom.
Start of Meeting: 7:00 PM by LD, W0XLD, President
Business:
• Pledge of Allegiance
• Silent Keys
• Membership Introductions
• New Members/Licenses/Upgrades
• Secretary Report (Anthony, KE0LQK)
o Recognition of Volunteers
o Net Participation Stats
o Membership Statistics
• Treasurer Report (Dick, W5UDM)
• VE Report (John, KJ0CFW)
• Webmaster Report (Doug, N7LEM)
o Events and classes listed. Check out events coming up on website.
• PPARES Report (John, KD0SFY)
• Megafest Report (Derek, K0ATV)
o July 16th, Megafest
o Vendors, Static Displays
o Pitch for Tickets
o Asks:
▪ Rent ATM Machine
• Youth DXpedition (Don, N6JRL)
• Larkfest, 2022, Sat April 2nd, Longmont, CO
• High Plains Camporee (David, AD0QD)
o Special Event Station
o Boy Scouts and Ham Radio Merit Badge

o Pitch for help and volunteers to come along
• Fox Hunt in Future
• Compete as 4A station, Field Day, Future Discussion
• Volunteer Opportunities
o Antenna Committee
• Break Time
• Presentation by Jon Blome, NX0H
o Presentation involved discussion on ARES, how to get involved, how to get started, regions of ARES, organization structure, RACES, etc.
• Door Prize Drawing
• Meeting Adjourn @ 8:34 P

Report written by: Anthony Mitchell, KE0LQK, Club Secretary
Date/Time: 2022-03-09, 1800 social time, 1900 meeting begins
Location: King Buffet, 801 N Academy Blvd, Colorado Springs CO 80909
Agenda:

- Pledge of allegiance
- Member updates (I will use first names only in this new section, so that those who are "in the know" can be updated, without sacrificing privacy.)
    - Mike
    - Don
- Silent keys?
- Introductions and recognitions
    - Call signs around the room
    - New licensees and new members
    - General upgrades
    - Amateur Extra upgrades
    - Certificates earned (WAS, DXCC, etc.)
- Officer reports
    - Secretary report: Anthony/KE0LQK
    - Treasurer report: Dick/W5UDM
- Committee announcements
    - VE team: Dennis/N0ABC
    - Webmaster: Doug/N7LEM
    - Zero Beat: Jerre/WA0BCM
    - PPARES: john/KD0SFY
    - Megafest: Derek/K0ATV
- Club business

    - (Longmont ARC) Larcfest 2022 announcement: LD/W0XLD
        - Saturday, April 22, 9am to 1pm
        - Boulder County Fairgrounds, Exhibit building, 9595 Nelson Rd, Longmont CO 80501
        - $6 admission, under 16 free
        - Info: w0eno.org
    - "High Plains Camporee" announcement: David/AD0QD
    - Spring on-air activity announcement: LD/W0XLD
    - Field day announcement: LD/W0XLD
    - Volunteer opportunities/committee introductions
        - Antenna committee: David/AD0QD, Kyle/KD0TRD
        - Station committee: George/KE0QCC
- SME presentation
    - Jon Blome/NX0H, Colorado ARES Emergency Coordinator
- Any other new business?
- Door prize drawing
- Adjourn

--
73,
LD / W0XLD

All,

Here are the statistics from our March 12, 2022 VE session. The file containing all of the specifics is attached (especially for the Treasurer for verifying new licensee free 1-year memberships).

Please DO NOT publish the specific applicant info in Zero Beat, as it is a bit more than should be published without permission.

March 12, 2022 PPRAA VE Session - 10 Applicants:

6 New Technician
2 Upgrade to Extra
1 New Extra
1 Unsuccessful

BILAL ISOTRON 20

"Why that's just a little feller," said one of my friends when he saw the Bilal Isotron 20 antenna for the first time. Sure enough, it is just a "little feller" in size, but its performance belies its appearance. Remember David and Goliath?

Last October, I reported on the Isotron 40 and the excellent results it produced for me on that band. Anticipating a need for a 20-meter antenna to support my de-
sire to have a small, efficient, and easilyerected antenna for use away from home, I asked Ralph Bilal to send me the Isotron 20.

Once again, I wasn't disappointed. The Isotron arrived via UPS in a rugged box with all the components neatly packed and carefully preserved by lots of wrapping material and some rugged plastic
envelopes containing the nuts and bolts. Ralph takes the trouble to tape things down inside the box so they won't rattle and the antenna disappointed me. ftr• haps I ought to say that I disappointed Ralph by doing something that I knew bet. ter than to do.)

The next step was to put the TV mast up on the roof of the house attached to a chimney mount and to run a suitable length of coax to the transceiver. I used the MFJ Antenna Bridge to make a preliminary tune-up, setting the impedance at 50 Ohms, and found the best setting of the Isotron to be very, very close to this.

Now the antenna began to perform as it should! Stations from all over the world came roaring in (twenty was good that day). Tentatively, I called a CO, not expecting much from this teeny little lump of inductance and capacitance. . . surprise! Right away an answer. . 589 from southern USA. Then, over the next hour, literally dozens of stations: England, Germany, USSR, France, Canada, Italy, and so on until I tired of the game. Switching between my standard 14AVQ and the Isotron 20, I found as much as two S-units differ ence and as little as no difference be-

The 40 Meter Isotron Antenna

Isotron 6

PRACTICAL USE OF DECIBEL AND SWR VALUES.1

The purpose of this article is to help explain how complex measurements or terms can be used and understood in a practical way. Therefore, many of the statements are not an exact science, but what can happen in real applications.

Standing Wave Ratios (SWR) and Decibels (dB), are terms used regularly among the Amateur Radio Community. If you had not had in depth technical training of what this stuff is on paper, it can appear a bit hazy. Actually it can be hazy to those of us that were supposed to learn it. DECIBEL: A term used commonly representing a loss or gain ratio of Radio Frequency power, voltage or current.

Two related values are needed to calculate dB.

For example, power applied to an amplifier, compared to the power coming out of an amplifier. We express this in dB. Why?

Incredibly, our ears are on a logarithmic response. My, how did that happen? Oops! I did not intend to get religious.

The formula for dB power is not too bad. dB = 10 x log P2/P1.

P1 = power in, P2 is power out.

As an illustration, if a person estimates that the signal is "twice as loud" when the transmitter power is increased from 10 watts to 40 watts, he will also estimate that a 400 watt signal is twice as loud as a 100 watt signal. The human ear has a logarithmic response.

This fact is the basis for the use of the relative-power unit called the decibel (dB).

Our receiver is a sophisticated Field Strength meter. It takes a power value from the air and puts a number to it on our S-Meters. How can this compare to dB?

There is still not a set standard among radio manufactures of how many dB it takes to move 1 S unit. However, most will provide this rating for there own radios.

For example, 1 S-unit is equivalent to a 6dB ratio. That would indicate you would hear the change in signal 6 times from one S-unit to the next, whether you are going up or down in signal strength.

When you operate your stations, keep this in mind as you watch your S-Meter in respect to comparing antennas, directive measurements and power levels. This will give you a better understanding of what changes in actual measurements are relevant, or significant, and which are not.

Boy, I'm at the end of the page and I hardly got started. Well, we have something for next month.

73,
Ralph WD0EJA
May 2022

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BILAL COMPANY
137 MANCHESTER DR.
FLORISSANT, CO. 80816 U.S.A
PH/FX: 719/687-0650
wd0eja@isotronantennas.com

-

Isotron 40

S-METERS

Virtually all receivers have them. Are they of value for measuring signal strength?

When a signal is strong, of course. When a signal is weak, the meter is not so good.

Most S-Meters are driven by the "Automatic Gain Control" circuit, or AGC. This can be done in a variety of ways. AGC voltages can be applied to 1 or several amplifier stages in the receiver. This makes it difficult to standardize S-Meter values.

In time you will know how your S-Meter reacts. It is common to hear an operator state that his S-Meter is stingy, or generous. After using a radio for a time, you can get an idea of the sensitivity of the S-Meter. It certainly is not a standard measurement.

Some like to estimate that 1 S unit equals 6 dB gain. This could be, but there is no guarantee. It may be mentioned in the specifications of your receiver. If so, then you have something definite to go by.

S units are a relative reading. So we can use it to make comparisons. When an operator changes antennas, you can give him the difference of the S-Meter reading. The S-Meter values did not change, only the other's antenna.

The S-Meter can be used to listening to 2 operators from the same location and make comparisons. Using the S-Meter to compare signals on ground wave is another use. Just keep in mind it is only a relative reading.

What about the section that is over S-9?

It is not S-10. It is a 10dB increase over the S-9 value. If the S-meter reads 6 dB per S unit, then you have gained almost 1.5 S units.

Keep in mind that the S-Meter is a relative measurement and works well in measuring comparisons.

73,

Ralph WD0EJA
05-15

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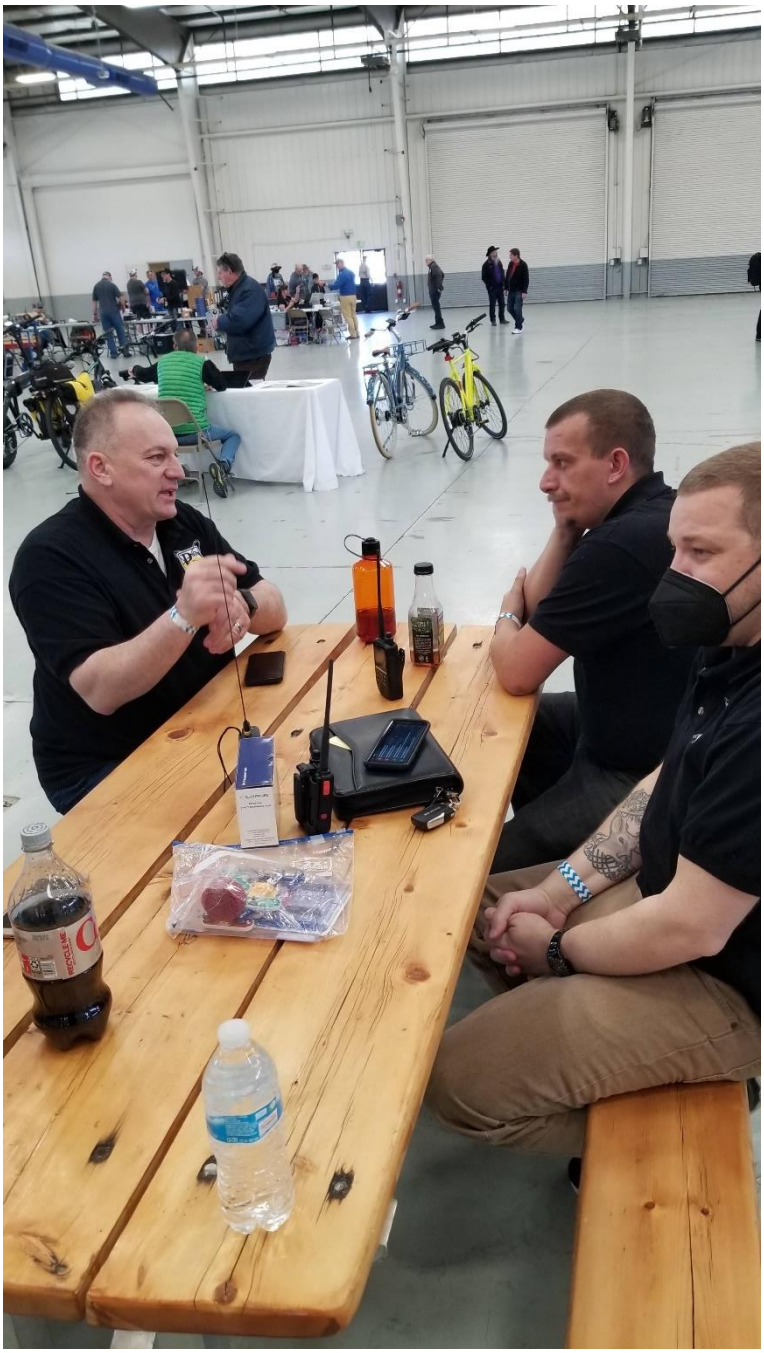
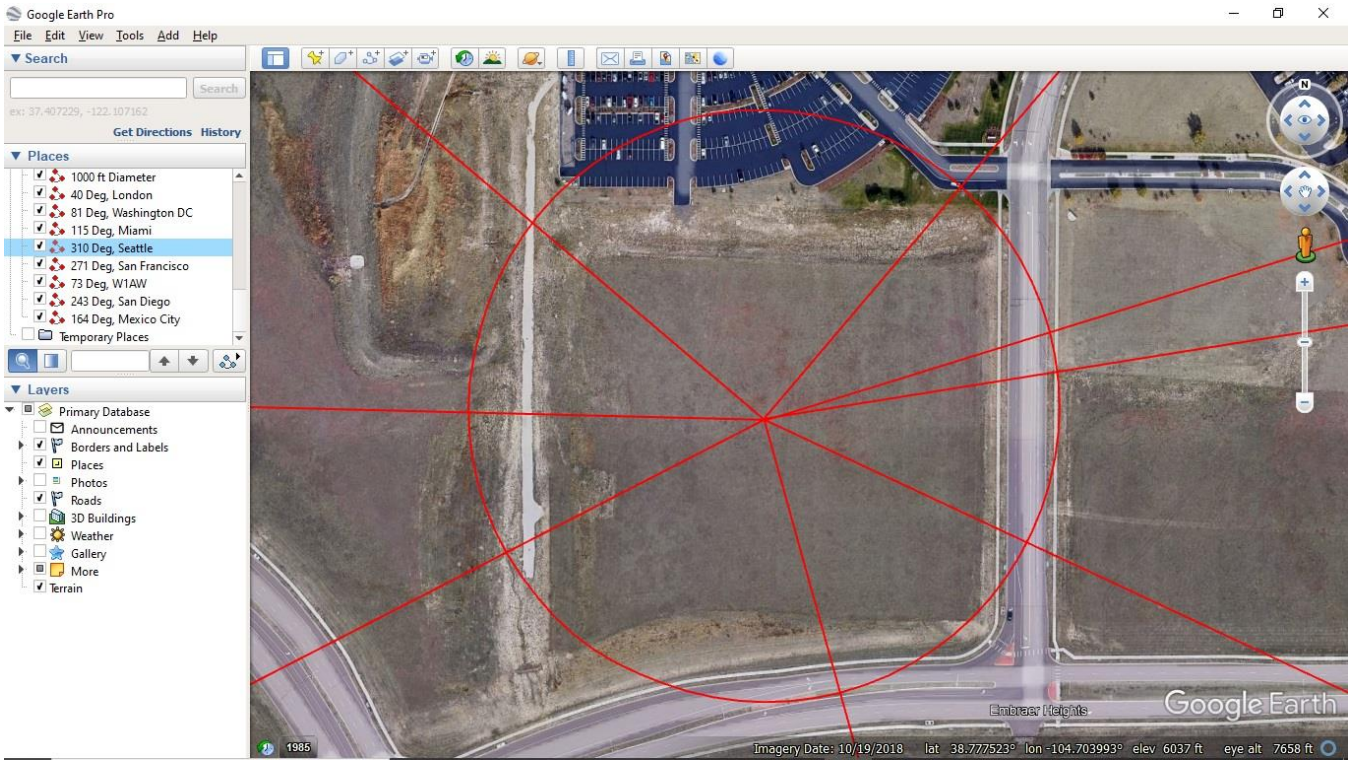
Pikes Peak
Radio Amateur
Association
KENWOOD
TM-V71A
ICOM


Pikes Peak
Radio Amateur
Association
KENWOOD
TM-V71A
ICOM
ID-5100A
YAESU
FTM-100DR/DE
IC-7300
Amateur Radio Emergency Service
Wireless Excitement with Amateur Radio



Attached is a view of the Field Day site with a 1000 ft diameter circle (Rule 4.1 - All equipment (including antennas) must lie within a circle whose diameter does not exceed 300 meters (1000 feet).). Also included are some sample azimuths for various locations. If omni directional antennas are used, obviously azimuths won't really matter, but you will likely interfere with one another and performance will not be great. Directional antennas are the way to go, but take a lot more effort. Unfortunately a lot of "tactical" and portable antennas sold these days don't have very well published azimuth or elevation radiation patterns, so trying to figure out which way you are actually shooting is nearly impossible for a lot of them. I commonly use the old book at the following link as my guide. https://www.rfcafe.com/references/electrical/pdf/Field-Antenna-Handbook-Electromagnetic-Compatibility-Analysis-Center.pdf



AARRL Clean Signal Initiative on the horizon

By Dan Romanchik, KB6NU

In recent message to his Northwest Division membership, Mike Ritz, W7VO, described a new program that he's gotten the ARRL to take on—the Clean Signal Initiative. He writes:

> **"**After a few months gathering support from the amateur community for the project, the ARRL Clean Signal Initiative (CSI) is finally getting off the ground. The Board's Programs and Services Committee approved the concept several months ago, and since then I have been canvassing some of the best known RF engineers in amateur radio to get their support and input. As a result, the team will be conducting our first Zoom call next week to lay out the next steps for the project. All I can say at this time is that there are some amateur radio "heavy hitters" behind this, and I believe will be a game changer for the ARRL.
>
> For those that may be unaware of this project, here is a synopsis (or at least my vision):
>
> 1. The CSI gets the ARRL formally in the "technical standards" business. (Other technical organizations already do it: IEEE, UL, ASTM, and SAE, and others.) The ARRL currently tests new products to informal standards, with no real hard benchmarks for manufacturers to meet, other than the minimal standards outlined in FCC Part 97.307.
>
> 2. Creates and incorporates documented "best practice" standards and testing methodologies to ensure commercial amateur radio transmitters and amplifiers meet not only minimum FCC requirements for signal cleanliness, but push the envelope.
>
> 3. These new standards can be "home grown", or passed through the IEEE, but I think it's important they be also branded as "ARRL Technical Standards."
>
> 4. Test new commercial transceivers and amplifiers against these standards.
>
> 5. Certify the transmitters and amplifiers that pass the standards: "CSI certified by the ARRL."
>
> 6. Work with manufacturers to ensure compliance of those that don't. (Market pressure will drive this.)
>
> 7. Market the program to the amateurs through QST.
>
> 8. Work with manufacturers and social media experts to create training materials to teach hams how to set up their equipment to ensure the cleanest transmitted signals. (This education part is key!)"

Rob Sherwood, NC0B, of Sherwood Engineering, who is most well-known for his ranking of receiver performance (http://www.sherweng.com/table.html), is part of this effort. You can see a video of a talk that he gave recently to the Sutton & Cheam Radio Society by going to https://youtu.be/IioApKRecrI**Error! Hyperlink reference not valid.**

Based on my knowledge of how IEEE standards committees work, I stressed that the initiative should make every effort to get as many stakeholders—including manufacturers and users—involved as possible. Involving so many people may be cumbersome at times, but standards require consensus for them to be effective, and the only way to do that is to get everyone involved. I'd suggest that if you feel that you have something to contribute that you contact Mike directly. His email address is w7vo@arrl.org**Error! Hyperlink reference not valid.**

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Dan Romanchik, KB6NU, is the author of the KB6NU amateur radio blog (KB6NU.Com), the "No Nonsense" amateur radio license study guides (https://KB6NU.Com/study-guides/), and often appears on the ICQPodcast (https://icqpodcast.com). When he's not worry about how clean his signal is, he operates CW on the HF bands and teaches ham radio classes.

Apply for a grant from the ARRL or ARDC

By Dan Romanchik, KB6NU

In our division director's September missive to the membership yesterday was this nugget:

> ARRL IS CURRENTLY OFFERING GRANTS to fund amateur radio projects. This program, sponsored by the ARRL Foundation, is specifically for organizations and aimed primarily for education, licensing and support of ham activities. A special focus is on youth-related plans. We are now entering the last phase of this year's grant cycle, so the opportunity exists for your club or organization to submit a grant request. You can find the full details on the grant page of the ARRL web pages, check: http://www.arrl.org/amateur-radio-grants.

The ARRL accepts grant requests three times a year:

- February 1 – February 28
- June 1 – June 30
- October 1 – October 31

Since this is September 1, you have two months to get your request in. As I've written before, our club was awarded $1,500 to help us put up a tower for a club station at the Ann Arbor Hands-On Museum. The money is available. Go get it!

Get money from ARDC, too!

You can also get a grant for amateur radio projects from Amateur Radio Digital Communications (ARDC), the outfit I'm currently working for. ARDC grants money for projects that fall into one of the following three categories:

- Support and growth of amateur radio,
- Education, and
- Technical innovation.

ARDC has, for example, awarded grants to:

- An amateur radio club in Wisconsin (https://www.ampr.org/grants-old/grant-chippewa-valley-arc-emergency-trailer-and-equipment/) for upgrading their repeater systems and building an emergency communications trailer that they will also use to promote amateur radio in their area.
- A California high school (https://www.ampr.org/grant-incorporaing-constructivism-and-the-maker-mentality-at-california-high-school/) whose computer science teacher will use the funds to purchase microcontrollers and transform his classroom into a maker space. With this equipment and facility, students will learn computer science by building their own projects.

- The M17 Project (https://www.ampr.org/grant-m17-open-protocol/), whose goal is to develop a new, open-source digital radio protocol by hams, for hams, and that is easy to understand and build on.

To be eligible for an ARDC grant, an organization must be a 501(c)(3) public charity or be sponsored by a 501(c)(3) public charity. Other eligible organizations include government entities, schools or universities, and international charities or nonprofits.

For more information on ARDC and how to apply for an ARDC grant, go to https://www.ampr.org/apply**Error! Hyperlink reference not valid.**

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Dan Romanchik, KB6NU, is the author of the KB6NU amateur radio blog (KB6NU.Com), the "No Nonsense" amateur radio license study guides (https://KB6NU.Com/study-guides/), and often appears on the ICQPodcast (https://icqpodcast.com). He recently joined ARDC as their Content Manager. Among his responsibilities is spreading the word about all the cool things ARDC is doing for amateur radio.

EDITORS:

You can find an image of the ARRL Foundation logo at https://www.kb6nu.com/wp-content/uploads/2019/07/arrl-foundation-425x174.png**Error! Hyperlink reference not valid.**

An image of the ARDC logo is at https://www.ampr.org/wp-content/uploads/square-512.png

From ECHOLINK website:

What can I do with EchoLink?
EchoLink allows licensed Amateur Radio stations to connect to one another over the Internet. You can use EchoLink to connect your station (or your computer) over the Internet to other amateurs using the same software, and carry on a voice QSO. This greatly enhances the range and utility of mobile and portable VHF/UHF-FM stations, and also allows computer-equipped hams to access distant repeaters directly.

You can access EchoLink either with a radio or a computer. If you are in range of an FM repeater or simplex station equipped with EchoLink, you can use DTMF commands from your radio to access the EchoLink network. If you are a licensed amateur with an Internet-connected PC, you can access EchoLink stations directly from your PC.
How do I get started using it?
First, download the software from this Web site. Then, install the software on your PC, be sure you have a good Internet connection, and start it up to register your copy of the software. The final step is to provide proof of license so your callsign can be added to the system; see Validation for details. Then, you're ready to go.

Is EchoLink available for any platform other than Windows?
EchoLink is designed specifically to run under Microsoft Windows. Currently, there are no plans to offer versions of EchoLink for other platforms (except as noted below).

Is EchoLink available for smartphones and tables, such as an iPhone or an Android phone?
Yes! An edition of EchoLink for the Apple iPhone and iPad is available, free of charge, at the App Store. For Android devices, please install EchoLink from Google Play.

73
KF0OTE

Colorado Repeater Association Swap List

You can submit listings, updates, or any questions about the swaplist to

craswaplist+owner@groups.io

You can also hear the latest swaplist and submit listings during the CRA net on Sunday mornings.

Subscribe to the weekly swaplist newsletter by sending an email to

craswaplist+subscribe@groups.io

Please include the following information when you submit a listing: Name, call sign, telephone number including area code, and email address if desired.

Edit your subscription to the craswaplist by going to groups.io and setting up an account.

For information about the Colorado Repeater Association, go to www.w0cra.org, send an email to cra@w0cra.org, or call (303) 840-4CRA (303-840-4272).

Upcoming hamfest--
Sunday, August 28, 9 a.m. to 1 p.m., Denver Radio Club Hamfest, Adams County Fairgrounds, 9755 Henderson Road, Brighton. Admission $6, free admission for children with adult. Tables $13 in advance, $20 at the door. VE testing at 10 a.m. Talk-in on 145.49 or 448.625 MHz 100 Hz. For more information, go to WØTX.org or contact Cathy, NØCRZ, at drcfest@w0tx.org.

For sale--

Johnson Adventurer 80 to 10 meter tube transmitter, serial number 84545, includes manual, 35 watts out on 7.029, recapped, has Johnson 122 VFO mod, $225;

Johnson Adventurer 80 to 10 meter tube transmitter, unreadable serial number, includes manual, 25 watts out on 7.029, rough note with some trace of filtering (i.e., RST = 594), had old recap but wants another, has Johnson 122 VFO mod, $175;

Johnson Adventurer 80 to 10 meter tube transmitter, no manual, serial number 084173, no case, oscillates but no RF output, has Johnson 122 VFO mod, $90;

Hammarlund HQ-110c 160 to 6 meter receiver with clock and matching S-100 speaker, includes manual, has SO-239 antenna connector, does receive but would enjoy a going-through, $250;

Hammarlund HQ-110c 160 to 6 meter receiver with clock (missing knob) and matching S-100 speaker, includes manual, does receive but would enjoy a going-through, $225;

Yaesu FT401b 1975-era 80 to 10 meter tube transceiver, serial number 126412, approximate CW RF outputs into antenna at 80m = 130W, 40m = 450W, 20m = 75W, 15m = 230W, 10m = 350W, works but would enjoy a recap, $400;

Allied Knight-Kit Star Roamer 1965-era receiver, includes manual, for parts or restoration, $60;

Allied Knight-Kit Star Roamer 1965-era receiver, no manual, for parts or restoration, $40;

Allied Knight-Kit Star Roamer 1965-era receiver, no manual, for parts or restoration, $40;

Hammarlund S200 speaker, for larger HQ-170 style receiver, $100;

Ameco PT-3 160 to 6 meter RF signal preamp with manual and AMPT3RA second-receive-antenna add-on, $100;

Autek QF-1a active AF filter with manual, features peak, notch, low pass, variable frequency and selectivity, $75;

B&W FL-10/1500 TVI filter, 1.5 to 30 MHz, 1000W, 52 ohm, $15;

Kenwood AT-230 antenna tuner, $225;

KLM PA10-70b 2-meter amplifier, 13.5VDC, 6 amps, $100;

Radiowavz 160DBZ Double Bazooka coaxial dipole for 160 meters, 246 feet long, $100;

Ringo AR-2 antenna, includes manual, $10;

Ringo ARX-450b antenna, includes manual, $10;

Homemade 2m copper pipe J-pole, no manual, $20;

RC5A-2 rotator control unit, no manual, no case, control unit only, no rotator, $10;

Heathkit HD-10 Morse code keyer, $20;

Assorted RG213 coaxial cables, various lengths and prices;

Wanted--
Twenty to 40 feet of Rohn 25, including the top section and rotor plate;

Changing health, had bought to restore but now downsizing. Located in Franktown, east of Castle Rock.

Woody WØUI 303-660-1616 w0ui@arrl.net
5-1-22

For sale--
One M2 2 meter HO loop with M2 Mag Kit (mast and mag mount) accessory, $125;

One pair (2) of 2 meter (144-146 MHz) loop antennas and a matching phasing harness, can be mounted on a mast pipe or mounted right to the side of Rohn 25 tower, no tower offset required, email for more specs, new in box, never installed, $200;

Located in Arvada.

Glenn AEØQ ae0q@arrl.net
5-1-22

For sale--
Two VHF Engineering TX432 transmitters and two VHF Engineering RX432C receivers, circa 1970s, originally intended for a two-way link between two repeaters, each inside an enclosure and fully wired, can send pictures and brochure scans, make an offer, please;

Don WDØGCK don.hillger@colostate.edu
4-10-22

Wanted--
A good set of used 2 meter duplexers, 140-150 MHz, any leads appreciated;

John NØGIO 970-883-2606 johnball419@gmail.com
4-10-22

For sale--
National NC-173 resurrected older vacuum tube receiver, covers broadcast band through 6 meters, although not too usable on 6 meters, fully functional with speaker, no National emblem on the speaker, make offer but would like to see it go to a good home that appreciates vintage gear, pick-up only near the south end of Carter Lake in south Larimer County, no shipping;

Dave WØLEV 970-367-5222 (between 1000 and 1700 local time, or leave message) W0LEV@ARRL.net also monitor 447.275 Fort Collins repeater
3-27-22

For sale--
Kenwood TS-480SAT, includes cables with ferrites, 500Hz CW filter, TCXO high stability crystal oscillator, and all manuals, used only at one indoor location, $500;

Wouxun KG-UV9D+ UHF/VHF HT, includes programming cable, $100;

Elk 2m/440 L5 log periodic antenna with N-connector, includes 10 foot cable with N-connector on one end and SMA connector on the other, $120;

GE Superadio 3, model 7-2887, high performance AM/FM radio, for AM band DXing, $50;

Kenwood HS-5 radio communication headphones, 8 ohm impedance, $40;

Hank KEØCU 303-916-9229 SE Aurora
3-20-22

For sale--
Retevis RT-9000D, brand new in the box, was told that I could use this for 2M/70cm but turns out I can't, $90;

Jeff KFØDUT 901-857-1547
3-13-22

For sale--
Press-die for punching accurate holes in sheet metal, useful for chassis and ground straps, punches range from 1/16 to 3/8 inches, to use place the sheet between the plexiglas and the matching steel plate, align the holes and then set the appropriate punch in the guide hole and give a whap with a hammer, includes box and sliding cover, lower quality Harbor Freight press-die is $40;

Two cross-vises, can move a part in x or y directions, not the most accurate but could be useful to somebody, listed at $25 each at Harbor Freight;

Located in Lakewood. Payment by check or cash. Shipping possible

with extra cost.

Ralph WBØJKV 240-285-3643
3-13-22

***Beware if a buyer requests funds be sent via Western Union or wire transfer (very unsafe and used by scammers); or if the buyer offers to send you a cashier's check or payment greater than the price of your item (another common scam); or if the buyer mentions a "shipper's agent," it is almost definitely a scam.

***Listings last for approximately 60 days, but you can ask for an extension or re-submit them after deletion.

***The CRA Swaplist is a free service for the listing of amateur-radio-related equipment and services. For non-commercial use only. Individuals may post ads for used radio equipment and computer equipment intended to be used in amateur radio. Ads for new equipment, manufactured items, or used equipment in quantity are subject to deletion as commercial posts.
The CRA reserves the right to delete any content without notice.

***Please notify us promptly when an item has been sold or obtained.

***Copying of the CRA Swaplist must be done in its entire form.

Collecting $35 Application Fee

The majority of the FCC's revised Part 97 rules (adopted in December 2020) establishing new application fees become effective on April 19, but the new amateur radio application fees will *not* become effective on April 19. The FCC announced on March 19 that the amateur radio application fees, including those associated with Form 605 filings, would not become effective until the "requisite notice has been provided to Congress, the FCC's information technology systems and internal procedures have been updated, and the Commission publishes notice(s) in the *Federal Register* announcing the effective date of such rules."

The $35 fee, when it becomes effective, would apply to new, modification (upgrade and sequential call sign change), renewal, and vanity call sign applications, as well as applications for a special temporary authority (STA) or a rule waiver. All fees will be per application. Administrative updates, such as a change of mailing, email address, or name, are exempt.

It is expected that such fees will not become effective before summer 2021. The FCC has stated that amateurs will have advance warning of the actual effective date, because it will publish such date in the *Federal Register*.

ARRL Volunteer Examiner Coordinator (VEC) Manager Maria Somma, AB1FM, said VECs and Volunteer Examiner (VE) teams will not have to collect the $35 fee at exam sessions. Once the FCC application fee takes effect, new and upgrade applicants will pay the $15 exam session fee to the VE team as usual, and pay the $35 application fee directly to the FCC via the Fee Filer System or License Manager System. Somma said this information was provided in a VE Newsletter distributed this past week. "Further news and instructions will follow when we have them," she said

PPRAA 2 Meter Net Script

Version date: 2021-10-17

At 1955 hours (7:55 pm), announce:

The Pikes Peak Radio Amateur Association 2 meter net will start in five minutes, at twenty hundred hours. This is ***[your call sign]***.

Begin the net at 2000 hours (8:00 pm):

Calling all radio amateurs. This is the Pikes Peak Radio Amateur Association Thursday evening 2 meter net. Tonight's net control station is ***[your call sign]*** and my name is ***[your first name]***.

The PPRAA 2 meter net meets each Thursday evening at 20:00 hours [20 hundred hours] local time on the CMRG repeater, 147.345 MHz, positive offset, CTCSS tone of 107.2 Hz. In case of repeater problems or failure, the net will move to the 146.970 PPFMA repeater using CTCSS tone of 100 Hz, negative offset.

All amateurs are warmly invited to check-in and participate in this net. This is a directed net, so please go through Net Control to contact another station.

The purpose of this net is to announce PPRAA club business, upcoming events and activities, to discuss technical topics, to disseminate general information of interest to the amateur radio community and to practice formal net procedures. Please listen closely and follow the net control station's instructions.

When checking into the net, please give your call sign, your name, your location and if you have traffic for the net. Please speak slowly and clearly, Use correct ITU phonetics. It helps to repeat your call sign at the end of your check-in. Please be patient as net check-ins usually have a few doubles.

Take check-ins:

PPRAA Club Officers and Board Members please check-in now. ***[Acknowledge all check-ins.]***

Portable stations and mobiles please check-in now. ***[Acknowledge all check-ins.]***

Now, stations with suffixes starting with Alpha through Foxtrot. ***[Acknowledge all check-ins.]***

Stations with suffixes starting with Golf through Lima. ***[Acknowledge all check-ins.]***

Stations with suffixes starting with Mike through Romeo. ***[Acknowledge all check-ins.]***

Stations with suffixes starting with Sierra through Uniform. ***[Acknowledge all check-ins.]***

Stations with suffixes starting with Victor through Zulu. ***[Acknowledge all check-ins.]***

Now all stations, with suffixes starting with Alpha through Zulu. ***[Acknowledge all check-ins.]***

This is the PPRAA Thursday evening two-meter net, with ***[your call sign]*** as net control. Now we'll go to stations with traffic. ***[Call on stations with traffic and lead discussion.]***

Are there any additional stations wishing to check in? Please call now. ***[Acknowledge all check-ins.]***

Round-robin discussion:

This part of the net is for round-robin discussion. We will take comments from each station in turn, and we'd like to hear: have you been doing anything on the air, or working on any ham projects? Or perhaps you've heard some amateur radio news, or watched a YouTube video, you'd like to share with the net? Tell us what's new in your ham shack. ***[Call all checked-in stations in turn.]***

[At least once every ten minutes:] This is the PPRAA Thursday evening two-meter net, with ***[your call sign]*** as net control.

Does anyone have any questions, comments, or requests for the net? Please call now. ***[Direct discussion.]***

Wrap-up:

Last call for late check-ins, please call now. ***[Acknowledge all check-ins.]***

You are invited to attend the PPRAA club meetings on the second Wednesday of each month. Social hour begins at 1800 (6:00 pm); the meeting begins at 1900 (7:00) pm. You may attend online on a Zoom meeting, and the online invite is emailed out to all members, or you may now attend in person, at Billy's Old World Pizza, 308 South 8th Street in Colorado Springs. That's on the southwest corner of US-24 and 8th Street, and we look forward to seeing you there.

In addition, the PPRAA has an Amateur Radio Operator's breakfast meeting on the first Saturday of each month, at a location posted on the PPRAA.org website.

PPRAA VE exams are held on the second Saturday of each month. Location is the Pikes Peak Regional Office of Emergency Management building located at 3755 Mark Dabling Blvd. Testing is at 1000 hours and the tests are currently free to take.

Our net control operator for next week will be ***[call sign of following week's net control]***.

The Pikes Peak Radio Amateur Association wishes to thank all the stations that joined us this evening, and the CMRG for the use of their 147.345 and 448.100 repeaters. I hope to hear you all next Thursday evening at 2000 hours (8:00 pm) for our next PPRAA two-meter net.

This is ***[your call sign]*** closing the net at ***[time]*** with a total of ***[number]*** check-ins. We are now returning the repeater to regular amateur use. 73 everyone! ***[Your call sign]***, clear.

Figure: Steve/WGØAT operates HF phone from a SOTA summit in Colorado.

PIKES PEAK RADIO AMATEUR ASSOCIATION AFØS

Radio_____ Confirming QSO_____, _____UTC
Mode_____ Frequency _____MHz Your sigs:_____
Transceiver: _____ Antenna: _____
Operator:_____ Grid: DM78tt
Mailing address: PO Box 16521, Colorado Springs, CO 80935
Station Location: Ellicott, CO PSE QSL TNX

Email: station@ppraa.org

Major Events

PPRAA Awards Program

I have been the Awards/Recognition committee chair for almost 20 years. Awards have been issued when applied for. I just reviewed my logs and found I qualified for the VUCC award with 116 grid squares worked on 6 meters.
If folks will let me know what they have qualified for and fill out an excel log data sheet I will print out a very nice certificate.
Certificates can be printed for regular achievements or a goal you set for yourself.

Mike WV7T
Wv7t@aol.com

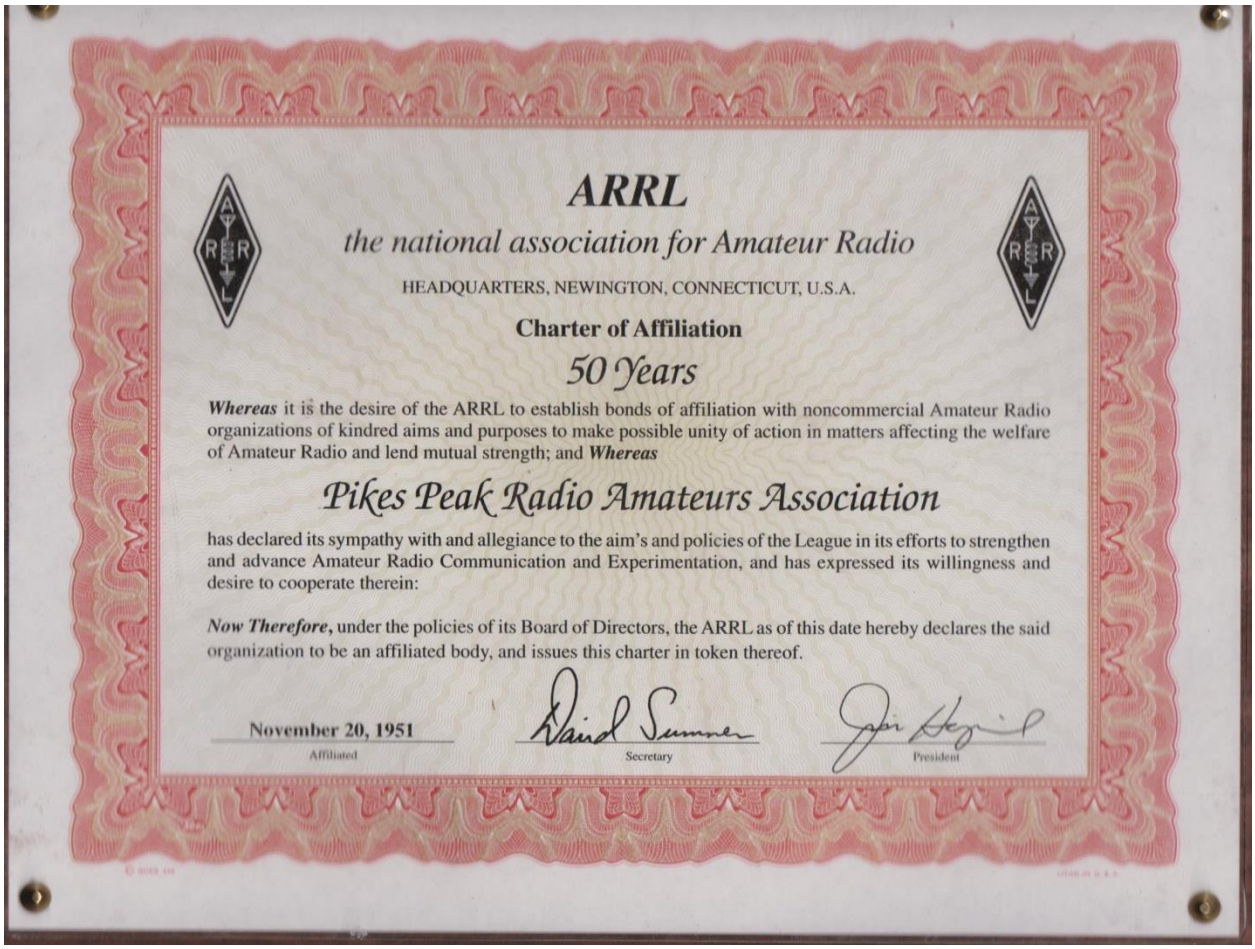
I am cutting back on my ham radio activities as other matters have arisen I must concentrate on.

These I will be available to provide:

Technician and General class license tutoring
Hands on skills
Ham equipment and accessories

Club asset manager
Award-Recognition program chairperson (We do have an awards program in PPRAA)
Lots of advice

I can be contacted at 719-229-8610 or wv7t@aol.com
Mike WV7T



ARRL

the national association for Amateur Radio

HEADQUARTERS, NEWINGTON, CONNECTICUT, U.S.A.

Charter of Affiliation

50 Years

Whereas it is the desire of the ARRL to establish bonds of affiliation with noncommercial Amateur Radio organizations of kindred aims and purposes to make possible unity of action in matters affecting the welfare of Amateur Radio and lend mutual strength; and ***Whereas***

Pikes Peak Radio Amateurs Association

has declared its sympathy with and allegiance to the aim's and policies of the League in its efforts to strengthen and advance Amateur Radio Communication and Experimentation, and has expressed its willingness and desire to cooperate therein:

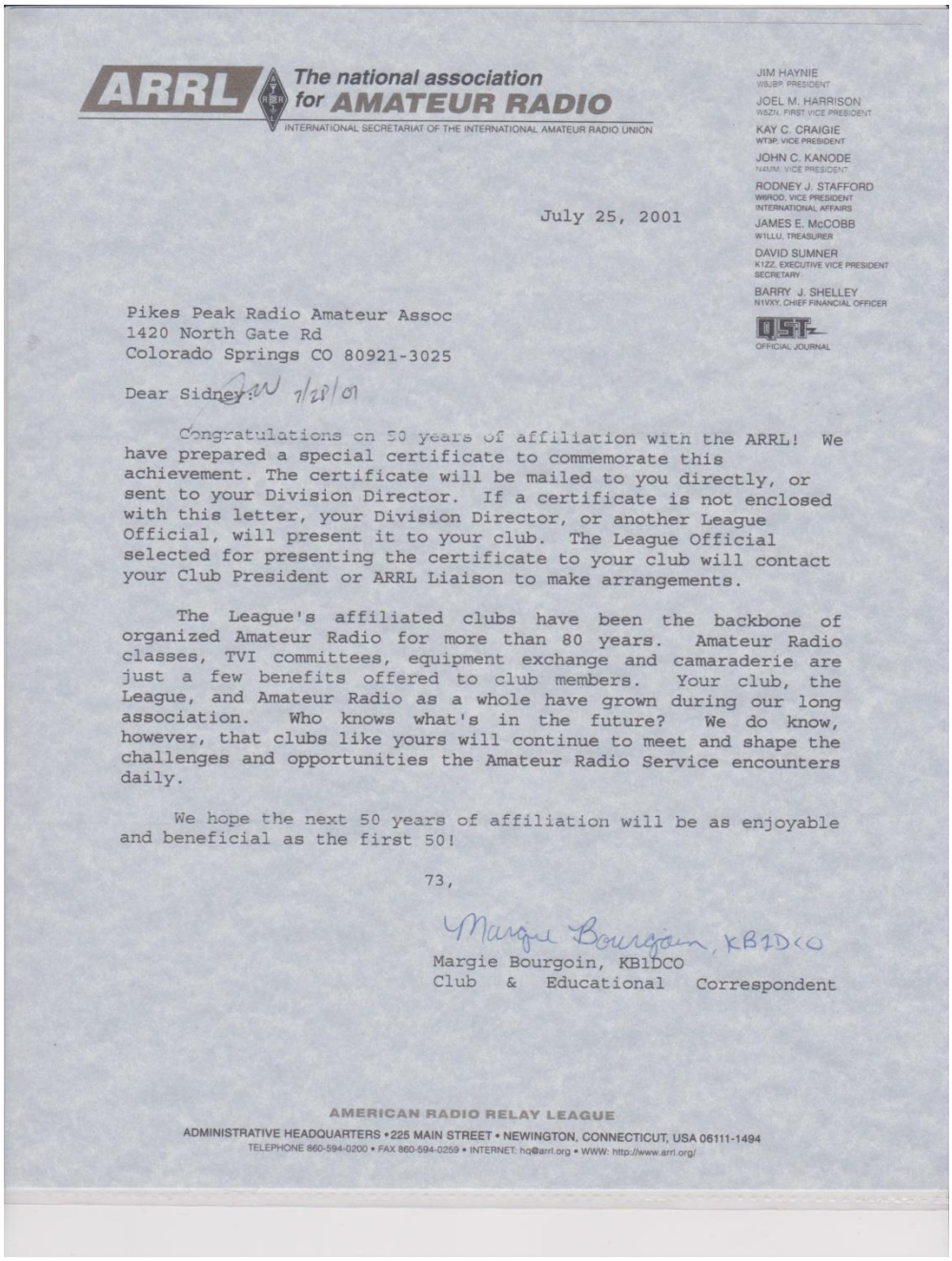
Now Therefore, under the policies of its Board of Directors, the ARRL as of this date hereby declares the said organization to be an affiliated body, and issues this charter in token thereof.

November 20, 1951
Affiliated

Secretary

President

This was 2001 when PPRAA was 50 year ARRL affiliation.
This year 2021 is 70 year PPRAA affiliation.
Nice job folks.



ARRL The national association for AMATEUR RADIO
INTERNATIONAL SECRETARIAT OF THE INTERNATIONAL AMATEUR RADIO UNION

July 25, 2001

Pikes Peak Radio Amateur Assoc
1420 North Gate Rd
Colorado Springs CO 80921-3025

Dear Sidney: 7/27/01

Congratulations on 50 years of affiliation with the ARRL! We have prepared a special certificate to commemorate this achievement. The certificate will be mailed to you directly, or sent to your Division Director. If a certificate is not enclosed with this letter, your Division Director, or another League Official, will present it to your club. The League Official selected for presenting the certificate to your club will contact your Club President or ARRL Liaison to make arrangements.

The League's affiliated clubs have been the backbone of organized Amateur Radio for more than 80 years. Amateur Radio classes, TVI committees, equipment exchange and camaraderie are just a few benefits offered to club members. Your club, the League, and Amateur Radio as a whole have grown during our long association. Who knows what's in the future? We do know, however, that clubs like yours will continue to meet and shape the challenges and opportunities the Amateur Radio Service encounters daily.

We hope the next 50 years of affiliation will be as enjoyable and beneficial as the first 50!

73,

Margie Bourgoin, KB1DCO

Margie Bourgoin, KB1DCO
Club & Educational Correspondent

AMERICAN RADIO RELAY LEAGUE
ADMINISTRATIVE HEADQUARTERS • 225 MAIN STREET • NEWINGTON, CONNECTICUT, USA 06111-1494
TELEPHONE 860-594-0200 • FAX 860-594-0259 • INTERNET: hq@arrl.org • WWW: http://www.arrl.org/

2021 is the 70th year of PPRAA ARRL affiliation.
That is a long time!

You shop. ***Amazon gives.***

I'm somewhat dismayed that there are only 18 households contributing via their King Soopers accounts. Seems that many people had obtained the KS gift cards several years back, before they changed it to simply being a selection on their account.

Perhaps we should try to make it clearer just how it's done.

1) Go to kingsoopers.com.
2) Log in to your account.
3) Scroll down to, and select Community Rewards.
4) Search for and Add 'Pikes Peak Radio Amateur Association Inc.' (Organization Number MK867) as your target.

That's all it takes.

It shows (me) that I contributed $18.85 last quarter. So, I guess mine made up slightly more than 10% of the total.

(Of course, maybe some PPRAA members could be directing contributions to another organization.)

Dennis

Amateur Radio Emergency Links Info

Amateur Radio and Emergency Communications
https://alertfind.com/amateur-radio-and-emergency-communications/

Disaster Preparedness on a Budget
https://couponfollow.com/research/disaster-preparedness-on-a-budget

From the annals of PPRAA history

February 1983

John Varga WA8ZIA writes an article called The Packet Pocket which introduces us to packet radio. Bob KØDJ and Frank WBØPAJ volunteered to help with the National Sports Festival coming up. Ed WØVO gave an excellent presentation on the status of Phase IIIB, due to be launched in April. Late meeting – it adjourned at 10:05 p.m. It's February and the club still doesn't have a location for its April swapfest. Looking into Safeway hosting it. Ham classes will begin in March, and the normal classroom is unavailable. Also looking for teachers. The February program will be by Chuck Hill and will cover receivers and what makes a receiver a good one.

March 1983

Part two of The Packet Pocket appears by John Varga WA8ZIA. He gets into the details of the ones and zeros in the control frames. Don KBØKQ reports that no class will be held until instructors step up and volunteer. He also asked for Ø Beat articles as he hasn't received any articles recently. The commemorative station at the National Sports Festival might be scrubbed because of its location. Most events will be at the Academy, but they'll also need stations on Pikes Peak, and up in Denver at Chatfield Reservoir. The most likely location for the swapfest will be the Polka Club at 2422 Busch Ave, behind the old El Paso Community College. Concern was expressed over the mistaken assumption many hams have that the PPRAA is sponsoring the swapfest. The board is looking into the purchase of liability insurance; with all of the upcoming activities it may be a good idea. Don KBØKQ was approved to purchase a stapler for $10. The March program will be by Tom Weatherly and Andy Freeborn and will cover the computer and its relation to packet radio.

April 1983

Ken WØTGL ('Two Gun Louie') writes about his "der barkundersparker", his 160/80/40m amplifier (800W!) that he built for under $50. Andy Freeborn NØCCZ and Tom ADØO gave a presentation at the March meeting on the TAPR packet radio system, including a video to show some hardware and concepts. New novice classes to start up on March 29 at North Jr. High, and Charlie KCØTI will teach the theory and Ralph Streamer KAØMTX will teach the code. The club is looking for volunteers to help at the April 11-12 Health Fair at Memorial Hospital. Contact Jim NØAVY. The club business cards will be slightly smaller than the membership cards, and will carry the club logo and the words, "Ask me about ham radio." Three lines will be there for you to write your name, call and phone number. John Varga WA8ZIA writes the third installment on packet radio. This one is about how to get started, buy equipment, etc. Dave WBØSSG included a questionnaire for those helping with the National Sports Festival. It included the question: "Is your rig synthesized? If not what freq pairs do you have? 16/76, 19/79, 37/97, 52/52, 34/94, 58/58."

May 1983

The May meeting will be held at the Palmer House Motel, corner of Fillmore and N. Chestnut. There'll be an equipment check-out for folks helping with the Pikes Peak Radio Amateur Association History Records 7 National Sports Festival. Progress is continuing on the NSF: there'll be a control station at Vandenberg Hall at the USAFA, and message centers at the Field House and at Festival Headquarters. Eight people are taking the novice classes. Upcoming swapfests include the Lamar Swapfest at the Nat'l Guard Armory on Hwy 287 on May 22, and the MARC swapfest on July 9 and 10.

June 1983

National Sports Festival is this months. 200 hams are needed, 100 of them during the nine days of games in COS. There will be two planning meetings coming up: May 25 and June 8. The club will buy 3,000 business cards for members to carry and hand out. Les is preparing a membership roster for all club members. Since the club is not officially sponsoring Field Day, the money previously spent for it will be used for the Olympic Training Center station. The club turned down two short-notice public service events. The club will use the Festival's bulk mailing permit to mail out letters asking for volunteers to help with the NSF. The June meeting will be again at the Palmer House Motel at Fillmore and Chestnut. A sample of the commemorative QSL card for the NSF was printed in this issue

July 1983

June meeting held at the Palmer House Motel had 55members present. New novice classes to start in September. Colorado has a new section manager: KQØJ. Mark NØEPF reports a ham radio public service announcement to be aired on channel 13. The meeting ended at 10:11 pm. Mark NØEPF reports that the club is now back reactivated as an ARRL club. The club picnic will be on August 7 in Black Forest. BYO meat. The club is still looking into the liability insurance to see if we should get some or not. The coffee pot is missing – Les will locate a new one for purchase. The club decided it's time for a club PO box and one was obtained. The cost of the meeting room at the Palmer House Motel may be too high, and Tom will try to negotiate a lower cost. No article or anything describing all of the past efforts on the National Sports Festival, who volunteered, what was accomplished. Apparently it was a success.

Parker Radio Association

PPRAA Team,
Be sure to join us for our weekly nets Monday and Tuesday evenings!

First, Monday, at 8:30pm, on D-Star XRF223B, the PRA holds its D-Star net. There is plenty of conversations from everything digital to the latest projects and devices… from DStar / DMR / Fusion / Brandmeister / Hotspots, and even CW. This can be accessed via your local hotspot. Also, many have linked via the W0CDS 2M repeater as well. Considering our K0PRA repeater is being relocated, using the W0CDS 2M side would be best (please follow common/courteous practice when linking).

Second, at 8:00pm on Tuesday, is the PRA weekly analog net on the W0CFI 448.675 – (100Hz) repeater. This is a great way to catch up on the happenings of the PRA and is a great environment to ask any question related to the hobby or to give yourself some bragging rights on a recent license, upgrade, or new piece of equipment.

We'll see you on the air!
73, KØPRA Your Friends at the Parker Radio Association
www.facebook.com/parkerradioassociation **parkerradio.org**
@ParkerCORadio

ARRL Outgoing QSL Bureaus

www.arrl.org/outgoing-qsl-service

ARRL affiliated-club stations may use the service when submitting club QSLs for its members in bulk ("pooling" their members cards together in one package) by indicating the club name inside the package. Club secretaries should check club affiliation on the ARRL web site to ensure that their affiliation is current. In a "pooled" package, each club member using this service **must also be an ARRL member**. Cards should be sorted "en masse" by prefix and a proof of membership should be enclosed for each ARRL member. QSLs for unaffiliated club calls may also be sent via the outgoing bureau to foreign destinations if the trustee of the club call is a member in good standing. The trustee's proof of membership must be included with the club call-QSLs.

Here are the statistics from our March 12, 2022 VE session.

Our next session will be on Saturday April 09, 2022.

March 12, 2022 PPRAA VE Session - 10 Applicants:

6 New Technician
2 Upgrade to Extra
1 New Extra
1 Unsuccessful
--
73

Dennis Major, N0ABC
Laurel ARC VEC, Regional Coordinator #10 / Ø
(CO, IA, KS, MN, MO, ND, NE, SD)
Pikes Peak Radio Amateur Association VE Team Leader

PPRAA VE EXAMS

(MONTHLY)

PPRAA VE session has relocated and will be held at 10:00 am on the second Saturday of the month at Pikes Peak Regional Office of Emergency Management
3755 Mark Dabling Blvd, Colorado Springs, CO 80907, USA
Organizer: ve@ppraa.org

TESTING IS FREE. Applicants will need the following items at the session:

1. A valid PHOTO ID, driver's license preferred (if you do not have a valid photo ID, please call for alternative identification requirements).

2. Your FRN NUMBER (Please obtain in advance of the session).

3. A copy of your amateur radio license (if any).

4. The ORIGINAL of any relevant CSCEs you have AND a PHOTOCOPY for the VE Team to keep.

PPRAA VE Team policy, as with many VE Teams, is to not allow same day retests on failed exams. Anyone passing their Technician Class examination at a PPRAA test session will receive a free year's membership to the Pikes Peak Radio Amateur Association.

Jim Bishop kd0kql@hotmail.com, 719 332-5283, 000PPRAA VE Contact

MARC VE EXAMS

(January, March, May, July, September, November)

The Mountain Amateur Radio Club (MARC) VE Team conducts VE exam sessions in Woodland Park every odd month at 10 am on the first Saturday in the Community Meeting Room of the Woodland Park Library, 218 East Midland Avenue. The MARC VE Team is affiliated with the ARRL/VEC and examinations for all classes of license will be offered.

Full information, including driving directions to the Woodland Park Library, is available under "VE Sessions" on the MARC website at

http://www.nx0g.org/ve.html or contact Wes Wilson (KØHBZ) at k0hbz@arrl.net or call (719) 687-8758.

If attending, please BE SURE to bring the following items to the session:

A valid PHOTO ID, driver's license preferred (if you do not have a valid photo ID, please call for alternative identification requirements).

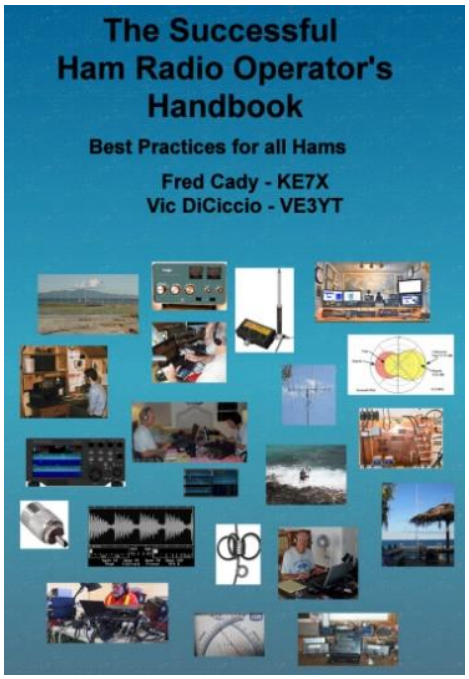
1. Your FRN NUMBER (now required – this includes children Please obtain in advance of the session).

2. Your ORIGINAL amateur radio license (if any) AND a PHOTOCOPY for the VE Team to keep.

3. The ORIGINAL of any relevant CSCEs you have AND a PHOTOCOPY for the VE Team to keep.

4. Cash, Check or Money Order for $15 (standard ARRL VE Fee). Checks and money orders should be made out to MARC and covers all the different exams you wish to take at the VE session.

MARC VE Team policy, as with many VE Teams, is to not allow same day retests on failed exams. For already licensed hams, MARC members should be monitoring the MARC repeater system 146.820- or 448.650- (both 107.2 Hz) if you need help with talk-in. 73 Dean Buckhouse



The Successful Ham Radio Operator's Handbook

This new book is aimed at new or returning hams to help them understand the practical aspects of the hobby, how to use their radios, build antennas and baluns, and get on the air successfully. In it you will find explanations of how the various parts of your ham radio - the transmitter and receiver – work, plus how these are being implemented using software defined radio technology. Operating techniques for VHF/UHF repeaters, HF radio DXing techniques, and the new digital modes are covered. Radio propagation, antennas, transmission lines, SWR and the mysteries of baluns are explained. Building your HF station, choosing a radio, connecting your radio to a computer, and mobile and portable operation are extensively covered.

Both the pdf and spiral-bound printed versions are available from Lulu.com, and the print copy is also sold by DX Engineering. You can find them via the links below:

http://www.ke7x.com/successful/ordering-the-successful-ham-radio-operator-s-handbook

Here is a link that describes the book in more detail:

http://www.ke7x.com/successful

Follow us on www.facebook.com/KE7XBOOKS to keep up-to-date on book news and to be notified of book discounts at www.lulu.com.

This book has 267 pages, 211 figures and diagrams, and 53 tables of data to make understanding the sometimes complicated ham radio operations much easier. The book follows KE7X's philosophy of presenting material in several forms to accommodate people with different learning styles -- reading, visualizing, hands-on -- with the many figures and text explanations and there are hands-on exercises throughout the book that can help you learn

more about your particular radio.

Follow us on www.facebook.com/KE7XBOOKS to keep up-to-date on book news and to be notified of book discounts at www.lulu.com.

One instructor for new and advanced ham classes has said, “This book is exactly what is needed. I've seen some other books targeting the new hams that are less than satisfying both technically and in content but this one is right on the mark and covers so much information that I so often get asked about, during and after teaching classes.”

Here are more details on the content:

- With nearly 110 years of ham radio experience between them, the authors are still excited about the challenges this wonderful hobby offers. *The Successful Ham Radio Operator's Handbook* will guide you when exploring some of these.
- Its goal is to help new operators and returning old-timers learn about the breadth of exciting ham radio activities and challenges available today.
- It answers the question "Why is ham radio relevant in the Internet age?"
- It covers a wide range of topics, helping the reader to understand the excitement of different facets of ham radio and to choose a challenging and exciting activity to pursue.
- It helps the reader better understand how the radio works. Many hams only use a small fraction of the features of their radio. For example, if you understand how a noise blanker or a roofing filter or the AGC works, you will be able to more easily use these, and other, features of your radio to your benefit.
- It provides exercises designed to apply the knowledge to cement your understanding of how your radio works without being radio-specific. It is good for all makes and models.
- It helps the reader get enough background to understand much of the jargon hams who pursue special activities, such as the various digital modes, VHF contesting and moon bounce. It quickly takes the novitiate reader to higher level of understanding and provides URLs and websites that help the reader go deeper into new interests.
- Antennas remain a key area where all hams can still successfully experiment and create a key part of their station. This book provides information to help new hams get started cutting their own verticals and dipoles. It explains why some popular multiband antennas may have compromises that impact performance.
- It gives practical guidelines about choosing transmission lines and building and using baluns and chokes.
- Digital modes such as RTTY, PSK and the new WSTJ modes are explained. The computer-to-radio connections needed for these modes are discussed and illustrated.
- Many hams are motivated by public service and emergency preparedness. This book describes typical local emergency organizations and national networks.
- Hams who like to operate while traveling will find practical information on reciprocal international agreements and how to get permission to operate legally.

Online Practice Test Sites

HAMSTUDY

Study for your Amateur Radio License exam:

[Technician (2018-2022)]
[General (2019-2023)]
[Amateur Extra (2019-2020)]
[Other...]

HamExam.org Amateur Radio Practice Exams

Log in using **Error! Hyperlink reference not valid.** or click **register** to create an account. If this is your first visit to the site, please read my brief **introduction**.

QRZ.COM https://www.qrz.com/hamtest/

Eham https://www.eham.net/exams/

AA9PW.COM

Membership Application
Pikes Peak Radio Amateur Association, Inc.
P.O. Box 16521, Colorado Springs, Colorado 80935

Date_____ [_] New Membership [_] Renewal

Name_____Nickname_____

Email address_____ Address_____

Telephone_____

City_____State_____Zip _____

Call Sign_____ License Class_____

Are you an ARRL Member? " Yes " No

Additional family members residing at same address

Name_____ Call_____ Class_____ARRL: "Y "N

Name_____ Call_____ Class_____ARRL: "Y "N

Name_____ Call_____ Class_____ARRL: "Y "N "

" Full Membership $15/yr " Family Membership $18/yr

" Full Membership - over age 65 $10/yr " Family Membership - all over 65 $12/yr

" Free - VE Signature required _____

Mail to: PO Box 16521, Colorado Springs, CO 80935, with check or money order or Scan and email to treasurer@ppraa.org, and pay with Paypal on www.ppraa.org or Deliver to PPRAA Treasurer in person