



VOLUME 71 ISSUE 7  
July 2020

## PPRAA Club Officers

<b>President</b>	<b><u><a href="#">Don DuBon, N6JRL+</a></u></b>
<b>Vice President</b>	<b><u><a href="#">Tom Oliphant, KØBUL+</a></u></b>
<b>Secretary</b>	<b><u><a href="#">Jay Winterton, WØWJ+</a></u></b>
<b>Treasurer</b>	<b><u><a href="#">Dick Kohlhaas, W5UDM+</a></u></b>
<b>Ø-Beat Editor</b>	<b><u><a href="#">Jerre Redding, WAØBCM</a></u></b>
<b>Webmaster</b>	<b><u><a href="#">Douglas Nielsen, N7LEM</a></u></b>
<b>Past President</b>	<b><u><a href="#">Jim Bishop, KDØKQL</a></u></b>
<b>Board</b>	<b><u><a href="#">John Bloodgood, KDØSFY*</a></u></b>
<b>Board</b>	<b><u><a href="#">R, Lee Glazer KEØYSE</a></u></b>
<b>Board</b>	<b><u><a href="#">Dennis Major, NØABC</a></u></b>
<b>Board</b>	<b><u><a href="#">Logan Perry, KEØKZA</a></u></b>
<b>Board</b>	<b><u><a href="#">Anthony Mitchell, KEØLQK</a></u></b>
<b>Board</b>	<b><u><a href="#">Mike McLaughlin, KØJT*</a></u></b>
<b>Board</b>	<b><u><a href="#">Michael Walter KEØTWK</a></u></b>
<b>Board</b>	<b><u><a href="#">Mike Anderson, WV7T*</a></u></b>

\* In final year of 2-year term

+ One year officer position

All officers can be contacted at: [boardmembers@ppraa.org](mailto:boardmembers@ppraa.org)

## Monthly Ham Breakfast

**New Day Café, 5901 Delmonico Dr  
Saturday, July 4, 2020 8 – 9:30 AM**



Our guest speaker for 8 July 2020, His name is Ed Fong WB6IQN. He is the owner of Ed's Antenna Shop in California. He will give a 40 minute presentation about the origin of his antenna project. It involves university students, his technical understanding of antennas and his ham experiences. He is a very bright person. He is prepared to do this over Zoom.  
Tom K0BUL



Pikes Peak Radio Amateur Association

# PPRAA

## May 2020 Board Meeting Minutes

5/11/2020

CTO @ 6:30 PM by K0BUL (Tom)

In Attendance:

N6JRL (Don Dubon), K0BUL (Tom Oliphant), W0WJ (Jay Winterton), W5UDM (Dick Kohlhaas), , N7LEM (Doug Nielsen), KD0KQL (Jim Bishop), N0ABC (Dennis Major), KD0SFY (John Bloodgood), KOJT (Mike McLaughlin), K3ILC (Jim Madsen)

Old Business:

- SK's: KA0PII, W8ILC
- Treasurers report by W5UDM, Dick o We will postpone donation of money from the raffle program to a scholarship for next year.
- N0ABC, Dennis - VEC Future Testing – Testing is up in the air because of the pandemic. May testing is cancelled. Future testing is also likely cancelled.
- ZeroBeat Report by WA0BCM, Jerre – Current ZeroBeat is not available yet but will be soon.
- Webmaster report, N7LEM, Doug – a lot of cancellations posted on the website. No ZeroBeat yet.
- Secretary's Report – KD0VRB, Jay
- PPARES Report by KD0SFY, John - Skipped
- Megafest Follow-up - KD0NQM, Jim – Not present.
- Internet Committee - N7LEM, Doug – Nothing to report.
- 2020 Christmas Party – N6JRL, Don - Skipped
- Thurs. 10 m net – we're all invited to participate. We had 6 participants on Thurs. Previously there were 8. 2 m net we had 22 participants this last week.
- QCWA Chapter 58, KD0KQL, Jim – Everything is going well, they are just trying to get things rolling again but have been unable to with the club membership meetings not being held. Last time they were talking about it they were discussing fees. WV7T, Mike is the primary contact for this.
- K3ILC, Jim – Suggested that we send out a notice through the reflector regarding the April Club Membership Meeting being cancelled due to COVID-19 concerns.

- KD0SFY, John – He was looking into a YouTube meeting for club members to be held at some time in the future.
- W5UDM, Dick – He has a list of current club members that can be used to notify all club members of the cancellation of Wednesday's club meeting.

New Business:

- SK's: Ron W8ILC
- Treasurers report by W5UDM, Dick
- ZeroBeat Report by WA0BCM, Jerre
  
- Webmaster report, N7LEM, Doug
- Secretary's Report – KD0VRB, Jay
- PPARES Report by KD0SFY, John
  - o Health and welfare net has been moved to Wednesdays
  - o Participation has dropped off as they suspected it would due to the pandemic. You can get the digital version of the magazines if you aren't a member and don't get the "On The Air" magazine in print.
- Megafest Follow-up - KD0NQM, Jim
- Internet Committee - N7LEM, Doug – Any progress from the committee? None at this point.
- Field Day Discussion – The board discussed getting back to life and holding field day but having people wear masks.
- Thurs. PPRAA Net – John will send Dick information to send out to the club about a holding regular virtual PPRAA Club Membership Meetings. These will be held at the usual club meeting date and time. Check your email for information about logging in.
- K0BUL, Tom - 10 m net – Held on Thursdays at 7 PM on 28.390 Mhz – 8-10 participants now.
- N0ABC, Dennis – Testing update
  - o Testing is on hold in our area due to the virus.
  - o K0BUL, Tom said that remote tests are underway via the Anchorage ARC.
  - o Over 40 contacts have been received since the last VE session. Usually there are 1-3 people. The next test session is going to be very crowded.
- 15<sup>th</sup>-17<sup>th</sup> of May the Lawton OK Radio club will have a special event station. We have been invited to participate in their special event. All bands and all modes until 1700 (central time) on Sunday night.
- N6JRL, Don – No Hamvention this year. Thursday-Saturday of this week (Saturday only from 8 AM – 8 PM EST) a special event station will be held. If you work 12 members you will get a nice certificate.

Motion to Adjourn @ 7:19 PM



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Our most popular unit!

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The best way to operate HF.

**Easy installation**  
**Excellent performance**  
**Durable construction**  
**CC&R friendly (XYL also)**

## MOUNTING A HF ANTENNA

We have verticals, dipoles, yagis, loops and, good heavens even Isotrons. What is the best support to mount your antenna on?

If you look closely at the advertising for many of the antennas, they are mounted on a metal mast. There is good reason for this.

Metal is strong. A light metal mast will hold up when properly supported. Metal masts can be acquired at a local hardware in many sizes.

However you say my plastic mast will do that too (not PVC).

There is one thing the plastic masts can not do, conduct electricity. You can electrically ground a metal pole. Having the end of a metal mast in the air is better than having only the antenna up there to take a static hit.

You say you can run a ground wire up the plastic pole. This is true, but if your coax is going up next to it, it could get interesting. What will the ground wire attach to? The antenna, or a conductive rod? A metal mast takes care of all this.

Metal masts, being of ground potential, can be used to tweak the impedance of the antenna, but that is for another time.

If you are going to put up a dipole, yagi, elevated vertical or an Isotron, a metal mast or structure can serve you better. Even the loops can be supported with metal masts, but that is not always practical. What ever mast you use, most antennas will work. The support mast will cause some variations with the antenna values.

73,  
Ralph WD0EJA

04-13

**Bilal Company**  
137 Manchester Dr.  
FLORISSANT, CO. 80816 U.S.A  
PH/FX: 719/687-0650  
[wd0eja@isotronantennas.com](mailto:wd0eja@isotronantennas.com)

## Securing PowerPole connectors

By Dan Romanchik, KB6NU

In preparation for this year's Field Day, I made a bunch of cables with PowerPole connectors to connect the solar panel, charge controller and batteries that I used. If you're not familiar with PowerPoles, you might want to [check out this YouTube video](#). They're really great connectors, and have become the DC connector of choice for many hams.

When I make up PowerPole cables, I normally don't bother trying to secure the two halves together, especially if you're using some decently heavy gauge wire. They fit together pretty tightly, and don't come apart easily. Even so, I think securing them together is a good idea. You can buy a little roll pin to insert between the red and black housings that is supposed to prevent them from coming apart, but many folks complain that the pin has a tendency to fall out. This not only defeats the purpose, but could also damage your equipment.

Securing them is the right thing to do, though, and I recently came across some great suggestions on how to do this in the daily digest that I receive from the [Elecraft-KX mailing list](#). Here are the best tips from the thread, [Securing Anderson Power Poles](#):

- Rudy K8SWD: You can thermally bond the red and black housings with a soldering iron like you are making little welds on both sides. Permanent (mostly) but it works better than the roll pins. Just clean the tip really good before soldering!
- Dave K0CDA: [Anderson] also make connectors that are thermally bonded together in pairs. They do NOT come apart.
- Don W3FPR: I use a drop of Super Glue on the junction of the plastic pieces. Warning – that glue grabs quickly, so slide the 2 pieces only enough to start the assembly, then apply the drop of glue and quickly finish sliding them together. I have never had ones prepared like that come apart, and I don't use roll pins. I will say one more thing – use only the genuine APPs. I have seen some knockoffs that do not mate well.
- Greg KC9NRO: Take a hot soldering iron. Wipe the tip with sponge. Run the tip down both side of APP bonding the black and red sides together. Clean soldering iron tip and apply some solder to tip. That's how I roll. Never comes apart
- Mike AI4NS: PVC cement will soften the plastic enough to bond them together. You can also get plastic welding rods, such as [Daindy Plastic Welding Rods](#). Chuck a rod in a Dremel and weld them together. I have made plastic boxes and panels using this method.



- Jack WD4E: Snip the cotton end off a Q-tip, cutting at an angle. Insert into hole made for roll pin, cut off excess, save remainder of Q-tip for next requirement.
- Troy K4JDA: 2.5mm screws work well, stay in, and are easily removable.

I posted these suggestions to [my blog](#) and got a few more great suggestions:

- *Tom KB8UUZ*: Fat tooth picks also work great. Jam it in, break it off.
- *Bruce NONHP*: I use MEK (Methyl Ethyl Ketone) replacement to clean my circuit boards after soldering. A single drop of MEK on the junction between the two halves of the PowerPole shell will fuse them. It can be broken with a sharp tap but not accidentally. It will set and dry in seconds and should be applied after the shell pieces are put together.

I think these are all great suggestions. I think that I'm going to try the cotton swab method. While reading them, another thought occurred to me. I haven't tried this yet, but I'm thinking a little drop of hot glue on the roll-pin hole might work, too.

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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 (KB6NU.Com/study-guides/), and often appears on the ICQPodcast (icqpodcast.com). When he's not thinking up new ways to keep his PowerPoles together, he likes to teach ham radio classes and operate CW on the HF bands.

## New Amateur Extra-Class Question Pool Released

The new Amateur Extra-class license examination question pool, effective from July 1, 2020, through June 30, 2024, has been released and is available at the National Conference of Volunteer Coordinators ([NCVEC](#)) website.



The [2020 - 2024 Extra-class pool](#) incorporates significant changes compared to the current 2016 - 2020

question pool, which expires on June 30. The number of questions in the pool was reduced from 712 to 622. The result was 239 modified questions, 49 new questions, and 139 questions removed due to changes in what was felt to be an abundance of outdated questions, while areas of new technology and subjects were added.

In addition, an effort was made to balance the difficulty level, removing or replacing some questions deemed too easy or too difficult compared to the rest of the pool.



The 2020 pool has 10 diagrams, which have been renumbered because the new question pool has two fewer than the 2016 question pool.

## Dayton Hamvention Cancelled

### Refund Information

Due to unfortunate cancellation of Hamvention 2020, we know that tickets, inside booth spaces and flea market spaces have been purchased. These purchases have been made by online credit cards, mail order checks and purchased from our outside vendors. All refunds will be through the same method of purchase. All credit card sales will be refunded to the original card used to make the charge. All check and cash sales will be refunded by check. We anticipate all refunds completed as soon as possible but not later than August 1.

We are offering the following options.

1. Obtain a refund.
2. Obtain a 2021 ticket instead. (to be mailed around January 1, 2021) Hamvention 2021 May 21-23
3. Donate to Hamvention (no refund)

For all general admission (not inside or flea market) online and mail orders, email [tickets@hamvention.org](mailto:tickets@hamvention.org) with your preference. Emails already received will be processed as indicated. Inside booth holders please email [exhibits@hamvention.org](mailto:exhibits@hamvention.org) with your refund preference. If you opt for the hold until 2021 they will contact you to verify.

Flea Market staff will be contacting each flea market space holder personally concerning refund of space(s). For those who purchased tickets at Hamcacion in Orlando, please send your ticket (keep a copy for your records) and last four of credit card for credit card refund (if purchased by card) otherwise it will be by check mailed to you.

Hamcacion Hamvention forum ticket winners, please email [tickets@hamvention.org](mailto:tickets@hamvention.org) with your ticket number and address information. We will send you replacement 2021 tickets early next year.

If you purchased a ticket at one of our outside vendors then please return to the place of business and they will handle your refund.

Mail correspondence to:

Hamvention Tickets - 2020 refunds  
PO Box 1446  
Dayton, OH 45401-1446

## ARRL Reshapes Podcast Offerings for 2020

In conjunction with the launch of its new [On the Air](#) magazine, which is aimed at those just beginning their journey in amateur radio, ARRL is reconfiguring its podcast lineup.

Heading up the new schedule will be a free companion podcast to the bimonthly *On the Air* magazine. The monthly *On the Air* podcast will take a deeper look into select features and projects from the magazine. Each month, host and *On the Air* Editorial Director Becky Schoenfeld, W1BXY, will offer additional resources, techniques, and hints to help less-experienced radio amateurs to get the most from the magazine's content.



In addition to the podcast, ARRL Product Development Manager Bob Inderbitzen, NQ1R, will curate a free *On the*

*Air* blog featuring content from the communicators and makers who are the driving force of amateur radio today. The blog will highlight opportunities and activities available to new licensees. The *On the Air* blog is intended as an entry point into the world of amateur radio for those seeking original voices and perspectives. Readers will be [invited](#) to take part in the conversation by sharing their stories and experiences.

Upcoming events in the Rocky Mountain Division: (more info @ ARRL.org:  
click on "hamfests")



## **The hamfest is now canceled.**

We've had several people ask us to consider their registration fee as a donation, but we will also give refunds as requested. Please send refund requests to [refunds@utahvalleyhamfest.com](mailto:refunds@utahvalleyhamfest.com) by March 31.

Website: <https://utahvalleyhamfest.com>  
Sponsor: Utah Valley Amateur Radio Club  
Talk-In: 146.780- (PL 100.0)  
Public Contact: Caryn Alarcon , KG7UUR  
PO Box 1288 Orem, UT 84059  
Phone: 562-965-6079  
Email: [k7uva@arrl.net](mailto:k7uva@arrl.net)

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ARRL Rocky Mountain Division  
Director: Jeff Ryan, KORM  
[k0rm@arrl.org](mailto:k0rm@arrl.org)

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## **Major Events**

**Visalia DX Convention has been cancelled**

**Dayton Hamvention has been cancelled**

# PPRAA Megafest has been cancelled

## Postponed until 2021 – the 2020 ARRL Rocky Mountain Division Convention Hamcon Colorado

- Postponed until 2021
- Location: Parker, CO
- More info [here](#).

## PPRAA 75 years Special Event Station

## PPRAA Veterans' Day Special Event Station

## PPRAA Pearl Harbor Day Special Event Station

- QSL to: PPRAA, PO Box 16521. Colorado Springs, CO 80935-6521
- No need to send a SASE, we will send cards to all confirmed contacts.

## Unraveling the Mystery of 1 × 1 Call Signs

The [1 × 1 Special Event Call Signs](#) system offers a way for clubs, groups, or even individuals to use a short call sign of special significance to the amateur community. These 1 × 1 call signs are [reserved](#) in advance for use in conjunction with short-term special events and commemorative operations. The FCC does not assign 1 × 1 call signs, so they are not "official."

On the matter of special event call signs, the FCC says, in Section 97.3(a)(11)(iii) of the Amateur Service rules: "The call sign is selected by the station licensee from a list of call signs shown on a common database coordinated, maintained and disseminated by the amateur station special event call sign data base coordinators. The call sign must have the single letter prefix K, N, or W, followed by a single numeral 0 through 9, followed by a single letter A through W or Y or Z (for example K1A). The special event call sign is substituted for the call sign shown on the station license grant while the station is transmitting."

The FCC also says in Section 97.119 (d): "Additionally, the station must transmit its *assigned call sign* at least once per hour during such transmissions." This requirement tends to be widely flouted, however.

A 1 × 1 Special Event Call Sign aids other radio amateurs by calling attention to the special event or other occasion. 1 × 1 call signs may be used for a variety of purposes, such as conventions, festivals, dedications, anniversaries, commemorations, and ARRL Field Day. Even local events qualify.

There are 750 1 × 1 Special Event Call Sign possibilities, and radio amateurs of any license class may reserve one as far as a year in advance to use for up to 15 days. Of course, 1 × 1 Special Event Call Signs are recycled. It's first come, first served. See the [Frequently Asked Questions](#) page for more information. The FCC has selected coordinators to approve and post 1 × 1 Special Event Call Sign reservations to a [searchable database](#). -- *Thanks to The Radiogram (Portage County Amateur Radio Society newsletter)*

*You shop. Amazon gives.*

## PPRAA VE Session

Monthly on the second Saturday

Pikes Peak Regional Office of Emergency Management

[El Paso County Emergency Services Authority](#)

3755 Mark Dabling Blvd, Colorado Springs, CO 80907, USA

Organizer: [ve@ppraa.org](mailto:ve@ppraa.org)

Saturday, July 11·10:00am – 12:30pm

Monthly on the second Saturday

Organizer: pikespeakraa@gmail.com

pikespeakraa@gmail.com

## **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**

**July 1981:**

**Thirty members attended the June meeting at the new location. The club assisted with the SpringSpree in June as a public service event. Bud Libengood KAØLBP will be our new representative to the CCARC. Its next meeting will be in Glenwood Springs on August 1. The club may help with the carrying of the Olympic Torch down from the top of Pikes Peak on July 4<sup>th</sup>. Charleen Colvin WBØYOB received the Hammy this month for all her assistance. The July program will be on understanding standing wave ratios. The IEEE for Ham Operators will meet at the Denver Hilton on June 17. The club is purchasing crystals for 147.135 for the club's Icom radio. Hams assisting with backup communications at the Black Forest Outhouse Race ended up providing primary communications.**

# ARRL Outgoing QSL Bureaus

[www.arrl.org/outgoing-qsl-service](http://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.

## **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 WOCD5 2M repeater as well. Considering our KOPRA repeater is being relocated, using the WOCD5 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 WOCFI 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](http://www.facebook.com/parkerradioassociation) [parkerradio.org](http://parkerradio.org)

[@ParkerCORadio](https://twitter.com/ParkerCORadio)



# PPRAA VE EXAMS

**(MONTHLY) No current info on cancellations**

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](mailto: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](mailto:kd0kql@hotmail.com), 719 332-5283  
Dennis Major NOABC, PPRAA 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](mailto: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.





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

<http://www.ke7x.com/successful>

Follow us on [www.facebook.com/KE7XBOOKS](http://www.facebook.com/KE7XBOOKS) to keep up-to-date on book news and to be notified of book discounts at [www.lulu.com](http://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](http://www.facebook.com/KE7XBOOKS) to keep up-to-date on book news and to be notified of book discounts at [www.lulu.com](http://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 novice 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



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 <https://hamexam.org> 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: \_\_\_\_\_

E-mail address: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Call: \_\_\_\_\_ License Class: \_\_\_\_\_ Telephone: \_\_\_\_\_

Are you an ARRL member?  Yes  No

Additional Name: \_\_\_\_\_ Call \_\_\_\_\_ Class \_\_\_\_\_ ARRL member?  Yes  No

Additional Name: \_\_\_\_\_ Call \_\_\_\_\_ Class \_\_\_\_\_ ARRL member?  Yes  No

Additional Name: \_\_\_\_\_ Call \_\_\_\_\_ Class \_\_\_\_\_ ARRL member?  Yes  No

- Full Member - \$15.00
- Full Member over 65 - \$10.00
- Free - VE Signature Required:

- Family Membership (same address) - \$18.00
- Family Membership (both over 65) - \$12.00