



VOLUME 72 ISSUE 9
Sept. 2021

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Board	LD Steiner, WØXLD
Board	Michael Walter KEØTWK
Board	Daniel Burtis, KEØWJL

* In final year of 2-year term

+ One year officer position

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

Monthly Ham Breakfast

La Tartine, 1420 Kelly Johnson Blvd
Saturday, 2 October 2021 8 – 9:30 AM



PPRAA Board Meeting (6 Sept.) may be virtual

– There will be an online meeting via Zoom.

PPRAA General Membership meeting (8 Sept.) will be at Billy's Old World Pizza at 308 S 8th St #E

– 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.

Double Fox Hunt

– Saturday, 2 October 2021
– More info coming soon, save the date **P**

Postponed to 2025: 2020 ARRL Rocky Mountain Division Convention – Hamcon Colorado 2020

– More info [here](#).

ARRL Learning Network Webinars

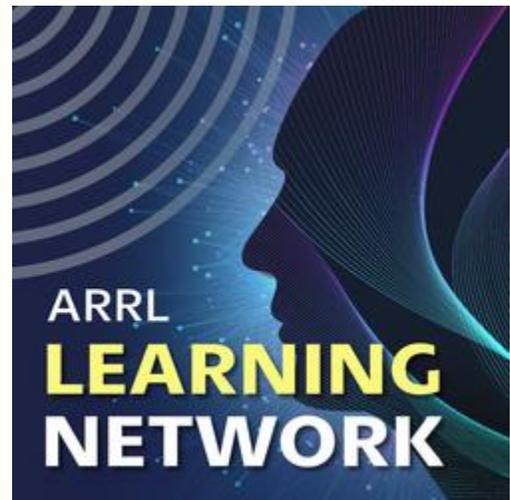
Visit the [ARRL Learning Network](#) (a members-only benefit) to register, check on upcoming webinars, and to view previously recorded sessions.

Introduction to DMR and Digital Voice -- Tim Deagan, KJ8U / Thursday, September 9, 2021 at 3:30 PM EDT (1930 UTC)

An introductory overview of digital voice (DV) technologies for ham radio. This presentation will focus on DMR with notes on System Fusion, D-STAR, and more. Included will be a description of DV architecture and components, and the interesting opportunities and challenges that DV presents.

ARRL members may register for upcoming presentations and view previously recorded Learning Network webinars. ARRL-affiliated radio clubs may also use the recordings as presentations for club meetings, mentoring new and current hams, and discussing amateur radio topics.

The [ARRL Learning Network](#) schedule is subject to change.



It is with great pleasure that I announce that a new repeater system has been installed and is operational on Raton Pass. The system is sponsored by the Cheyenne Mountain Repeater Group. Raton Pass is located on I-25 at the Colorado/New Mexico border. The repeater system consists of:

VHF Repeater

145.430 MHz (-) PL 107.2 Hz

This linked to the CMRG repeaters

147.345 Colorado Springs

147.360 Wilkerson Pass

145.295 Salida

146.790 Pueblo (provided the Pueblo Amateur Radio Club

UHF Repeater

449.600 MHz (-) PL 107.2 Hz

Local Repeater

UHF D-STAR Repeater

446.775 MHz (-)

KDØRDI-B

900 MHz P-25

927.875 MHz out, 902.025 MHz in

Linked with other 900 MHz P25 systems in CO

VHF APRS Digipeater

RATON

A dozen volunteers from several clubs in Colorado Springs and Trinidad worked on two separate Saturdays to clean and repair the building, upgrade electrical, install internet service, install antennas, and move and install the two equipment racks. CMRG thanks all who volunteered their time and talents to get the site work completed and the repeaters installed. All the repeaters are open for all amateurs to use.

Feel free to forward this on to other amateur radio distribution lists,

Thanks and 73's

Dave

Dave Novotny, WA6IFI

Chairman, Cheyenne Mountain Repeater Group, Inc

719-439-9077

Interactive LightCube Satellite Set to Launch in Late 2022

* NASA has selected [LightCube](#), along with 13 other small research satellites, to fly as auxiliary payloads aboard rockets launching between 2022 and 2025. The launch opportunity is provided through NASA's CubeSat Launch Initiative. Being designed, built, and tested by an interdisciplinary team of students, advisors, and



engineers across multiple organizations, LightCube is a microsatellite educational mission that aims to produce a light visible to the naked eye of observers on Earth. The spacecraft's two xenon flashtubes will be triggered via amateur radio.

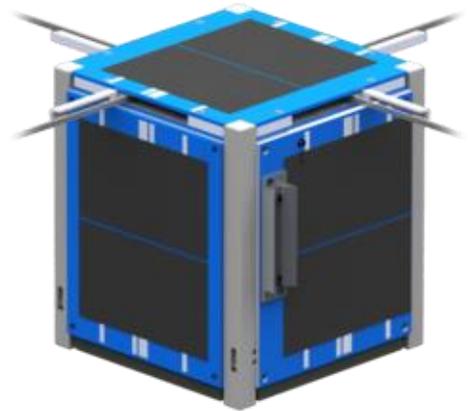
* When the light beacon is activated, the 1U CubeSat will be visible momentarily -- each flash will take 8

microseconds -- from the ground, with a brightness similar to the International Space Station (ISS). Following ISS deployment, LightCube will orbit Earth for approximately 2 years before safely deorbiting.

* The LightCube mission is a collaborative project between Arizona State University's (ASU) Interplanetary Initiative, the ASU Ira A. Fulton Schools of Engineering, Vega Space Systems, and CETYS (Centro de Enseñanza Técnica y Superior) Universidad. ASU designed and built the satellite.

* A radio amateur with a handheld transceiver will wait until the satellite is roughly overhead, as determined by a smartphone or computer app. The user will transmit a predefined number code, and if LightCube is charged, it will flash. The satellite then requires 30 seconds to recharge the capacitor that fires the xenon light tubes. At this point, no frequencies have been coordinated for LightCube.

* The idea itself is not novel. As the LightCube sponsors note, FITSat in 2013 used high-power LEDs to transmit Morse code. EQUisat in 2016 could produce a beacon visible to the naked eye.



ARRL Learning Network Webinars

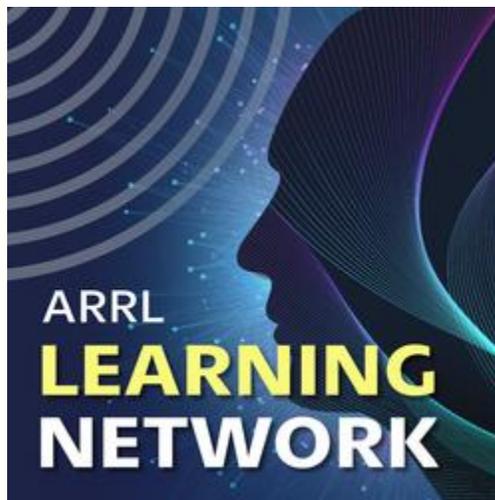
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Isotron 80/40

Get ready for the fall season. The easiest way to operate 80 and 40M.

www.isotronantennas.com

**The Best Way To Operate HF
Easy Installation
Excellent Performance
Durable Construction
CC&R Friendly (XYL also)**

The articles will also be on our web site.

TUNING AN ANTENNA

The most common way to check the tuning of your antenna is by a Standing Wave Ratio (SWR) measurement.

I have noticed for several years there may be some confusion of how to properly obtain this measurement from the modern radios.

Some of this confusion is due to not understanding what "**Mode Of Transmission**" means. This can be even more confusing when most of the radios are all mode units.

Most likely you have LSB, USB, AM, CW, FM and FSK or RTTY. Boy, that is a lot of modes. Which one do you use to check SWR?

Hopefully in future articles more details will be provided on each mode. However, for now, we just need the basics so you can use the radio effectively.

If your radio has a SWR meter built into it, then this will be the reading preferred. An outboard meter is fine, but the one in the radio is what the radio is going to use. If the SWR in the radio is high it will reduce your output power. Power reduction can easily be 50 to 90 percent. What is the best way to confirm this?

This is where knowing what mode to use is necessary.

USB and LSB modes do not produce RF energy unless you talk or make noise into the microphone. If you key the mic and all is quiet, there is no power out. I have had the humorous experience of operators saying the SWR is 1:1. However they were on USB or LSB and all was quiet. The meter reads nothing because there is no power out.

Many realize this. Their solution is to moan and groan or whistle into the mic. This will put power out, but it jumps around so much it is hard to get an accurate reading.

Some have put the radio in the CW mode. They key the mic and are happy to see a 1:1 SWR. However, they have not realized that their radio does not put power out on CW from the mic switch. A code key is needed for some radios.

Now there is the AM, FM and FSK modes.

AM is OK, but it does not put full power out. Initially you want to check SWR at low power anyway. The mic button will activate the radio. When you have your SWR acceptable, you will want to confirm that the radio will put the full power out. You can not do this on AM.

What about FM or FSK? Some have been hesitant to switch to these modes because they are not in the portion of the band it is allowed.

On FM, if you do not make any noise into the mic, it only produces a carrier. This is legal. On FSK or RTTY, it only produces a carrier. These are the easiest modes to use to check SWR.

Start at low power (5 watts). Using the internal SWR meter, check SWR and make the necessary adjustments to the antenna. Once acceptable, bring up the power. Use your "Relative Power Meter" in the radio. If you can get it to go full scale, you are ready to operate.

Your questions are welcome. I will try and answer them in future articles. Email me at wd0eja@isotronantennas.com.

73,
Ralph WD0EJA
SEPT 2021

Bilal Company
137 Manchester Dr.
Florissant, Co. 80816 U.S.A
PH/FX: 719/687-0650
wd0eja@isotronantennas.com

Are you ready for the new RF exposure evaluation regulations?

By Dan Romanchik, KB6NU

On Tuesday, April 27, Dan, W1DAN, ARRL Eastern Massachusetts Section Technical Coordinator, gave a Zoom presentation on the latest FCC regulations on RF exposure evaluation. These are spelled out in FCC-1926A1 (<https://www.fcc.gov/document/fcc-maintains-current-rf-exposure-safety-standards>), "Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields; Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies." The document is as long as the title might suggest—159 pages—but W1DAN boiled it down, focusing on what these changes mean for radio amateurs.

A recording of the presentation can be viewed by going to https://drive.google.com/drive/folders/1_qIGZhHyMrha-axJt87Dcu0UZuJO0t8F.

After explaining how RF exposure can be harmful, Dan explained how the rules are changing: The biggest change, he notes, is that amateur radio's categorical exclusion has been eliminated. What this means is that now every radio amateur will have to perform an RF exposure evaluation of their stations. This now includes mobile and portable stations, including HTs, SOTA/POTA stations, and Field Day and special event stations.

He noted that you must be able to prove that your station is safe. This includes not only performing the evaluation, but also documenting these evaluations, should this data be requested by FCC personnel.

One thing that's not changing are the maximum permissible exposure (MPE) limits. These are spelled out in FCC OET Bulletin 65 (https://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet65/oet65.pdf), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields." The FCC published this document in August 1997, but it's still the Bible when it comes to RF exposure. If you don't have a copy, or have never taken a look at it, you really should do so.

Be careful, though, when reading it. It contains a table (Table 1 on p. 21) that contains a list of output powers at various frequencies. If your station exceeded those limits, then you were required to perform an RF evaluation. Now, however, all amateurs (and other radio services, for that matter) must perform RF exposure evaluations if their output power exceeds 1 mW. We are no longer categorically excluded from performing these evaluations.

OET Bulletin 65 goes on to give guidance on how to calculate or measure exposure levels. Explaining how to do this is outside the scope of this article, but again, you'll want to refer to the bulletin for more information.

Besides the elimination of the categorical exclusion for amateur radio stations, what else is new is the dates on which amateur radio stations must perform evaluations. They are:

- **May 3, 2021(!)** for new and modified stations
- May 3, 2023 for stations that complied under the old rules.

Having said all that, the ARRL's RF Exposure page (<http://www.arrl.org/rf-exposure>) has a lot of resources to help you understand this topic and perform your own RF exposure evaluations:

- An RF-exposure FAQ (<http://www.arrl.org/files/file/Technology/RFsafetyCommittee/RFXFAQ.pdf>) to help hams understand the new rules.
- "Learning to Live with RF Safety (http://www.arrl.org/files/file/protected/Group/Members/Technology/tis/info/pdf/QST_Mar_2009_p70-71.pdf)," *QST* March 2009 pp. 70-71.
- RF Safety at Field Day (<http://www.arrl.org/files/file/Technology/tis/info/pdf/9906048.pdf>) *QST*, June 1999, pp. 48-51. A case study of Field Day with NSRC in a public park
- RF Exposure Station Evaluation and Exemption Worksheets (http://www.arrl.org/files/file/Technology/tis/info/pdf/rfex1_2.pdf)
- *RF Exposure and You* (<http://www.arrl.org/files/file/Technology/RFsafetyCommittee/RF%20Exposure%20and%20You.pdf>). This 8 Mbyte PDF file contains the text of the entire book by Ed Hare, W1RFI.
- Chapter 5 References (<http://www.arrl.org/files/file/Technology/tis/info/pdf/RF%20Exposure%20Chapter%205.pdf>) needed for filling out worksheet.

There are also links to FCC web pages with information on RF exposure.

I'm sure we'll all be hearing more about this in the days ahead. Hopefully, someone will come out with a simple way to do the modeling or make the calculations. As always, play safe.

=====

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 RF exposure evaluations, he teaches online ham radio classes and operates CW on the low end of the HF bands.

May 20, 2021
 Pikes Peak Radio Amateur Association
 c/o Dick Kohlhaas, W5UDM
 P.O. Box 16521

Colorado Springs, CO 80935

(Not Yet) 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

Everyone,

Please see below. Ernie is having a garage sale, with ham goodies available for purchase. If you have a chance on Friday or Saturday, please stop by and peruse.

"Garage Sale with numerous ham radio objects, mostly antenna related, some hardly ever used. Coax cable, ladder line etc., Several wire dipoles for 20 meters and 40 meters.

When: Friday, August 13th and Saturday, August 14th.

Time: 0800 to 1530 each day.

Address: 4260 Loch Lomond Ln, Colorado Springs, CO 80909, near Maizeland Rd and N Murray Blvd.

Hosted by Ernie, AF1RM and Jan Spillane



In addition to ham radio stuff, there are gardening tools, other miscellaneous tools, and, of course plenty of household items and clothing."

Celebrating 10 Years of Summits On The Air in Colorado

Bob Witte, KØNR
bob@k0nr.com

The Summits On The Air (SOTA) program originated in the United Kingdom but has propagated to most countries around the world. The program came to Colorado on May 1st, 2010 with Steve/WGØAT sending a CQ from Mount Herman, just west of Monument. Today, the SOTA program in Colorado (called WØC-SOTA) is very active with roughly 180 activators that operate from Colorado summits.

To celebrate our 10th Anniversary, [WØC-SOTA](#) is organizing a **10-10-10 Event** with a challenge for Activators and Chasers alike. (Activators operate from summits, Chasers try to contact them.)

Activator challenge: Activate **10** (or more) **10K** feet (or higher) summits (in Colorado/WØC) within **10 days**.

Chaser challenge: Chase Activators on **10 different** (or more) qualifying WØC summits (**10K** or higher) within the **10 days**.

Event Date: We will kick-off the event in conjunction with the [Colorado 14er event](#) on August 7th, 2021 and conclude on August 16th.

Everybody is invited to participate, either as an Activator or a Chaser. Block off these days in your calendar now and start planning for how you can participate. Feel free to operate as much or as little as you would like. It is all about having fun messing around with radios. Any HF, VHF or UHF band can be used for making SOTA contacts, with the most popular ones being 40m (CW & SSB), 20m (CW & SSB) and 2m (FM).

There will be a leaderboard on the [WØC-SOTA](#) website showing all participants who meet one of the challenges. More details will be announced on the WØC-SOTA Website as soon as they are hashed out.

For more information on the SOTA program in general, see the [worldwide SOTA website](#).

Full Disclosure: May 1 is actually the 11th Anniversary, but the COVID-19 Pandemic interfered in 2020, so we are catching up.



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

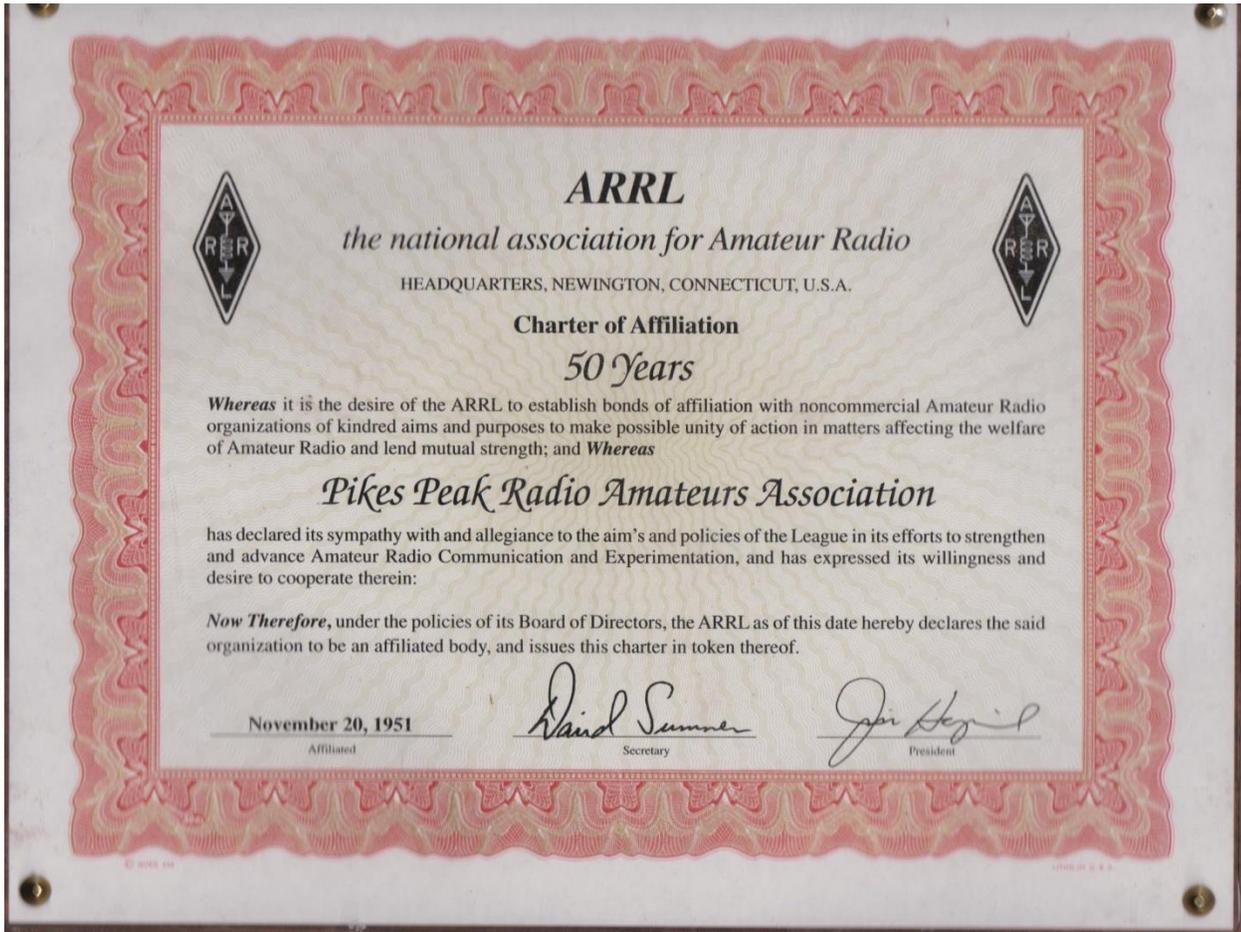
Hands on skills

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



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

July 25, 2001

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

Dear Sidney: *W 7/28/01*

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

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

September 1982: An RFI seminar will be held at this month's club meeting. William Nelson of Nelson Consulting has over 30 years experience in tracking down RFI. There will be a hidden transmitter hunt in the near future. The club will purchase beer, pop, potato chips and charcoal for the picnic. Bring your own meat and a side dish. Bob KØDJ gave a report of his visit to the ARRL Convention for the Rocky Mountain and Northwest Divisions. Al Bailey ADØZ writes the next installment in his series on computers. This one delves into the history of computers. Since next month is election month the board is looking for people that want to run for office. Contact Al if you're interested in a club cap or jacket. Mark reports that Commander Casey of the Naval Reserve Center is interested in discussing a possible location for the club station. A proposal is being worked up. The first "The Way it Was" article appears, about establishing a wireless station on Pikes Peak for the purpose of relaying signals between the two coasts.

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 WOCDS 2M repeater as well. Considering our KOPRA repeater is being relocated, using the WOCDS 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 parkerradio.org

[@ParkerCORadio](https://www.instagram.com/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 August 14, 2021 VE session. The file containing all of the specifics is attached (especially for the Treasurer for verifying new licensee free 1-year memberships).

August 14:
14 applicants

6 New Technician
2 New General
3 Upgrade to General
1 Upgrade to Amateur Extra
2 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 Dabbling 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

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 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