



QRO

MONTHLY NEWSLETTER OF THE PALOS VERDES AMATEUR RADIO CLUB



JULY 2020

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All **QRO** monthly issues since 2007 are on the PVARC website at: www.k6pv.org in the "Newsletter" tab. Additional club news appears in emailed PVARC Weekly Bulletin.

PVARC online meeting via Webex

"2020 ARRL Field Day calling from home stations"

PVARC members showing their Field Day operation, results, and knowledge learned

Thursday, July 2, 2020

7:15 pm: Webex meeting room opens

7:30-9:00 pm: Meeting and presentation

Use your PC, Mac, Linux, iOS, Android device in full video—or just audio.

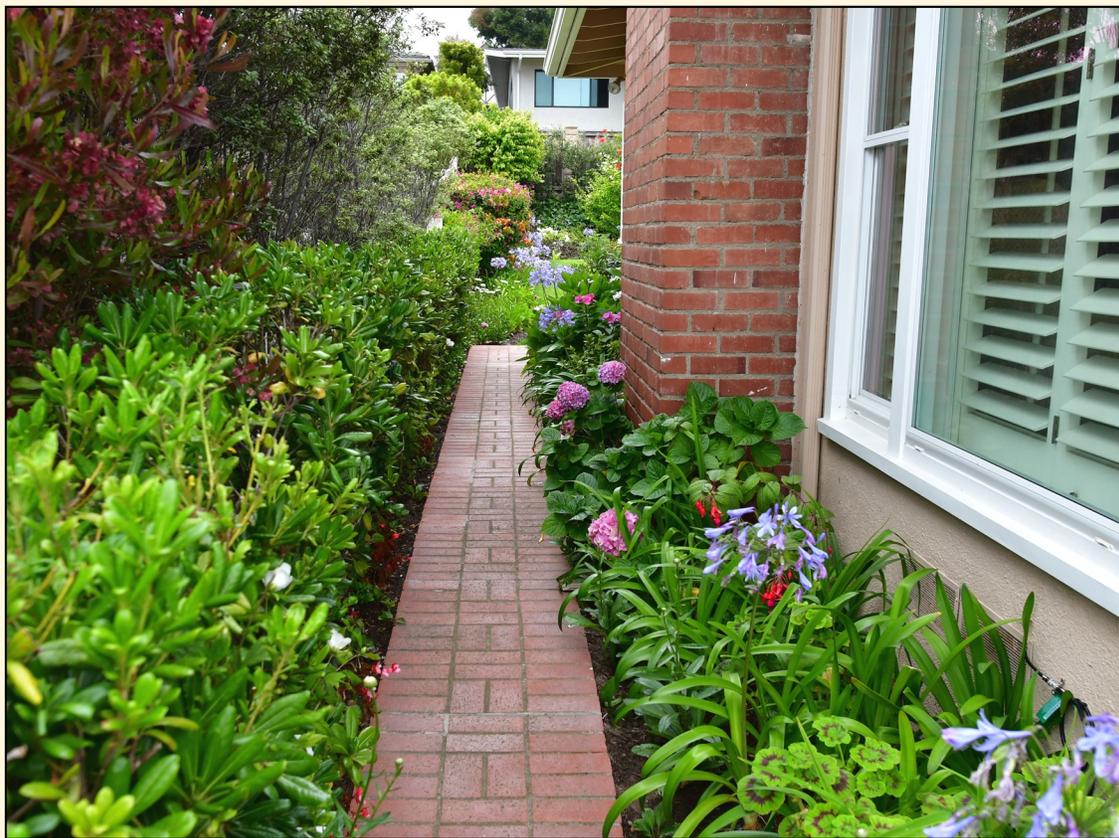
We'll be using video conferencing for other PVARC meetings in coming months.

PVARC's upcoming meeting topics (online in the near-term)

The PVARC's **July 2** monthly meeting at 7:30 pm via Webex will show how club members operated from their homes during the 2020 Field Day. Through photos and words we'll see how they did it, the results achieved, problems they had to overcome, and what they learned.

This year many home Field Day operations were "compromise" situations— not like the typical high-elevation club FD site having plenty of space, towers, or HF gain antennas. But others used existing home amateur radio stations and towers to make extensive contacts with AC mains power under a temporary FD rule change for 2020.

We will hold an **August 6** online monthly club meeting (topic announced soon) in place of our usual International Lighthouse & Lightship Weekend at Pt. Vicente. The ILLW organization indicated this year's Lighthouse Weekend will not be canceled but advised participants to abide by COVID-19 health orders and conditions in their respective areas. We received U.S. Coast Guard approval to use the Pt. Vicente Lighthouse grounds for this year's ILLW with some attendance restrictions due to COVID-19. As the disease subsequently expanded in Los Angeles County the PVARC Board of Directors felt it was best to cancel our ILLW event this year. We look forward to returning in August 2021.



Above: This unusual path to Field Day was paved with good intentions at the home of AI6DF's mother. But as to be shown at our July 2 online meeting portable operations in backyards often come with challenges. PHOTO: DIANA FEINBERG, AI6DF

The PVARC's **September 3** online monthly meeting has a special presenter: ARRL Assistant Laboratory Manager Bob Allison, WB1GCM, will be speaking from Connecticut about the ARRL's laboratory operations that test ham radio equipment for review in QST magazine and provide precise measurements of electronic phenomena. Bob is an excellent speaker and many of our club members enjoyed meeting him during the HAMCON 2017 / ARRL Southwestern Division Convention at the Torrance Marriott Hotel. ■

PVARC DMR nets moved to Wednesday, 7:30 pm

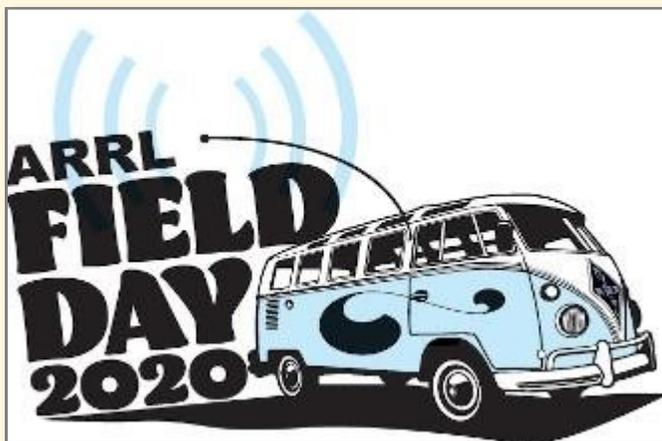
Weekly K6PV Digital Mobile Radio (DMR) nets have moved to Wednesdays from 7:30-7:55 pm. K6PV analog FM nets continue as usual on Tuesdays during 7:30-7:55 pm. Please check in and test your DMR radios then.

The DMR net change will provide more opportunities for members to check into our weekly nets. There's no change to K6PV's DMR parameters: we're still at 447.120 MHz (RX); 442.120 MHz (TX); Color Code 1; Time Slot 2; Talkgroup 31060. ■

Field Day 2020 was unlike any we previously experienced...or maybe not

By Diana Feinberg, AI6DF
QRO Editor

As the saying goes, "There's a first time for everything." While 2020 marked the first ARRL Field Day during a worldwide pandemic and first mostly from homes it wasn't the first during a period of massive economic distress.



When the ARRL's Field Day debuted in June 1933 the Great Depression had already wiped out a fourth of the nation's banks (with no deposit insurance then), the unemployment rate averaged 24.8%, and the country's mood was very sour.

But 1933 was a great time for amateur radio to demonstrate the types of emergency communication ham operators can provide, especially on a modest budget.

Eighty-seven years later Field Day remains a show of ham radio's capability even though Field Day migrated into more of a contest.

PVARC members mostly operated the 2020 Field Day from their homes because of COVID-19 which didn't enable the usual public demonstration.

But fellow member and PVARC Field Day Chair Rocco Lardiere, N6KN, kept the K6PV call sign very active this year from his home atop Rancho Palos Verdes. As the following table indicates (*next page*) Rocco single-handedly amassed an incredible 1,285 contacts for K6PV (536 on phone and 749 on CW, mostly on 40- and 20-meters.)

Meanwhile Jerry Kendrick, NG6R, operated his Rolling Hills Estates station 24 hours straight (11 am Saturday to 11 am Sunday) and had 232 contacts on FT-8/FT-4 plus 185 contacts on CW. Additional PVARC members with both large and small operations will also describe their Field Day during our July 2 monthly meeting.

Band conditions on HF SSB were reported great on 40-meters, so-so on 80- and 20-meters and almost nothing on 15- and 10-meters. CW worked great on 40- and 20-meters. Operators on VHF/UHF also enjoyed good results this year.

Each year's Field Day continues to surprise us with new challenges...and we aspire to meet any situation even though there's always a first time for everything. ■



Above: 2020 Field Day operation of Bob, W6HIP.
PHOTO: BOB CLOSSON, W6HIP

K6PV Field Day results (...solo operator in 2020)

Total QSOs	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Digital	-	12	-	-	-	-	-	-	234	-
Phone	441	723	575	763	562	234	395	454	273	536
CW	715	708	582	594	874	931	692	640	788	749
All Modes	1,156	1,443	1,157	1,357	1,436	1,165	1,087	1,094	1,295	1,285
80 meters	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Digital	-	-	-	-	-	-	-	-	54	-
Phone	10	31	53	24	99	-	115	75	4	-
CW	6	-	-	-	-	64	-	-	31	2
80m Total	16	31	53	24	99	64	115	75	89	2
40 meters	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Digital	-	-	-	-	-	-	-	-	6	-
Phone	17	24	27	107	19	55	-	66	86	411
CW	179	-	206	160	121	150	257	175	181	136
40m Total	196	24	233	267	140	205	257	241	273	547
20 meters	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Digital	-	12	-	-	-	-	-	-	160	-
Phone	198	310	297	241	172	118	217	132	102	120
CW	203	319	209	208	371	608	400	330	485	564
20m Total	401	641	506	449	543	726	617	462	747	684
15 meters	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Digital	-	-	-	-	-	-	-	-	4	-
Phone	58	273	90	211	113	9	3	100	31	5
CW	256	389	167	180	364	104	35	121	91	47
15m Total	314	662	257	391	477	113	38	221	126	52
10 meters	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Digital	-	-	-	-	-	-	-	-	-	-
Phone	18	1	3	-	-	-	-	-	-	-
CW	71	-	-	46	18	5	-	14	-	-
10m Total	89	1	3	46	18	5	-	14	-	-
6 meters	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Digital	-	-	-	-	-	-	-	-	10	-
Phone	108	47	55	115	99	28	27	41	-	-
6m Total	108	47	55	115	99	28	27	41	10	-
2 meters +	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Phone	32	36	24	18	9	24	33	40	50	-
VHF/UHF Total	32	36	24	18	9	24	33	40	50	-
Other	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	1	1	25	47	51	-	-	-	-	-

Clarification of HF Band-mode Convention (LSB vs. USB)

By Jerry Kendrick, NG6R

It is well known among HF operators that if you want to have a voice QSO on the amateur bands of 80m (75m) and 40m, you need to select the modulation mode of lower sideband (LSB). And, for single sideband (SSB) communications on 20m, 17m, 15m, 12m, 10m and 6m, you need to select upper sideband (USB). But, why? Is it an FCC or ITU requirement? No, there is nothing illegal about operating “cross-mode.” But you’re apt not to get too many takers when calling CQ on 20m using LSB, unless it’s from someone inquiring if you selected the wrong mode on your transceiver and who reminds you of the generally accepted agreement. So, how did this convention get started?

An article written by this author in an earlier **QRO** (April 2017) [1] reviewed the early history of this convention as it related to the application of SSB to amateur radio. That article was based solely on a **QST** magazine piece written a month earlier in March 2017 by Ron K2RP [2], which we now know promulgated some misinformation that this current article is intending to rectify.

One of the leading pioneers (c. 1948) in ham radio SSB development was Wes W9DYV (SK in 2015). It was said that Wes happened to choose 9MHz as the frequency at which to generate a USB RF signal. He purportedly mixed (using heterodyne mixing) that 9MHz USB-modulated signal with a fixed crystal-based local oscillator (LO) frequency of approximately 5MHz. Recall that use of a non-linear mixer will create sum and difference signals, thus generating 14MHz (9MHz + 5MHz) and 4MHz (9MHz – 5MHz). Subsequent use of band-pass filters would then select the sideband of interest and reject the spurs, harmonics and other frequencies not of interest. It was stated in the two previously cited articles that this technique explains why 80m (75m) ended up as LSB and 20m retained the USB nature of the original 9MHz modulated signal. The implication was that the mixing and differencing of 9MHz and 5MHz would reverse the sideband modulation and thus turn USB into LSB for the 4MHz signal. However, this explanation was in error; in fact, both the 80m sideband and the 20m sideband would retain the original USB character of the 9MHz signal. There is no “sideband reversal.”



Above: Oops...LSB is the wrong convention for this frequency—on ham bands above 9 MHz and on 60-meters all single-sideband operation should be on upper sideband. Modern transceivers like this Icom IC-7300 enable selecting either LSB or USB on any SSB frequency...but it’s up to the operator to ensure using the proper convention. PHOTO: DIANA FEINBERG, AI6DF

Continued on next page ▶

Clarification of HF Band-mode Convention (LSB vs. USB)

► *Continued from previous page*

So, this “historical” explanation is in error [3], a “persistent urban legend” as one ham operator puts it [4]. The reason for how this might have been misunderstood and misreported is illustrated with two examples below.

The best way to explain the phenomenon of sideband reversal is with a couple of examples. In the first example, consistent with Wes’s purported experiment, assume that a 9MHz RF signal is AM modulated with an audio signal whose one-sided bandwidth is 3kHz; assume that the carrier and the lower sideband components have been filtered away and that we’re left with only the upper sideband. For simplicity in illustrating the point, consider that the audio signal is just a single audio tone of 3kHz frequency. So, effectively, we now have a very narrow RF signal at a frequency of 9.003MHz. When that signal is non-linearly mixed with a single crystal-based LO tone of 5MHz, we get sum and difference frequencies (in addition to other unwanted spur and harmonic signals) of 14.003MHz (9.003MHz + 5MHz) and 4.003MHz (9.003MHz – 5MHz). So, clearly the 3kHz audio tone is still on the upper side of what would have been the carrier—no “sideband reversal” here. Now, consider another example.

In this second example, consider that the roles are reversed; instead of the 9MHz being modulated, assume that it is a fixed LO frequency. Also, assume that the 5MHz signal is not fixed but instead is modulated with USB modulation. So, for the same assumed 3kHz audio tone, the USB-modulated RF signal would be 5.003MHz. By reversing the roles of the 9MHz and 5MHz signals, we now get a different result. Performing the math in a similar manner, the sum and difference frequencies would be 14.003MHz (9MHz + 5.003MHz) and 3.997MHz (9MHz – 5.003MHz). So, now it’s clear that the resulting 20m signal is still USB, whereas the 80m (75m) signal is 3 kHz below where the carrier would have been, i.e., it is now LSB. Hence, in this second example, there has been a sideband reversal.

The true description of the experimental configuration used in those early SSB development efforts might have become muddled with the passage of time. However, it is likely that the scenario described in the second example above was actually the configuration used. If so, the sideband reversal experienced with this configuration explains why frequencies below 9MHz adopted the convention of LSB modulation* and those above 9MHz adopted the convention of USB. While this clarification might be just a “technicality” to some, it is important to understand the function and behavior of mixers and to be clear on how they are used to translate and in this case transform ham radio signals of interest.

* Exception: The five channels in the 60m band (added in 2002 with privileges expanded in 2012) are USB [5][6].

References

1. Page 5, <http://www.n6rpv.net/n6rpvpage/pvarc/2017QRO/QROApr2017.pdf>
2. Page 101, **QST** monthly journal of the ARRL, March 2017
3. Email from Mike K6HF, prompting a reexamination of the original article’s conclusion
4. Fourth thread entry (N2EY) at <https://forums.qrz.com/index.php?threads/why-use-lsb.517130/>
5. https://en.wikipedia.org/wiki/60-meter_band
6. <http://www.arrl.org/60m-channel-allocation> ■

PVARC Club News

Become an ARRL member: Support amateur radio while increasing your learning

Please consider joining the American Radio Relay League (ARRL) if not a member. The ARRL is the only national organization representing amateur radio and has another significance for the PVARC: We receive benefits from being an ARRL-affiliated club. But an ARRL-affiliated club requires at least 51% of club members also be ARRL members.

Annual ARRL membership costs \$49 and includes your choice of the printed monthly **QST** magazine or the ARRL's new **On The Air** magazine for newer hams. Both are available electronically to all ARRL members plus a new member benefit: free online access to ARRL's two other publications, **QEX** and **National Contest Journal**. Additionally all ARRL members can access numerous web-based materials, ARRL staff, and assistance with ham radio issues. Visit: www.arrl.org/ then click "Join/Renew." ■

PVARC badges await pickup at another time or by mail

Gary Lopes, WA6MEM, has the following PVARC badge(s) ready for distribution:.

- NA6Q

To make pick-up or mailing arrangements with Gary (or to order a badge) contact him at: wa6mem@cox.net. ■

Embroidered PVARC patches available at monthly meetings

PVARC club patches are available at our monthly meetings or special arrangement for \$4 each. They may be sewn on any cap, jacket, shirt, or bag.

The four illustrations in the patch center are emblems of the Palos Verdes Peninsula's four cities (clockwise from top left: Palos Verdes Estates, Rolling Hills Estates, Rancho Palos Verdes and Rolling Hills.) ■



Palos Verdes Amateur Radio Club

An American Radio Relay League Affiliated Club

Board of Directors:

President	Diana Feinberg, AI6DF
Vice President	Ray Day, N6HE
Treasurer	Peter Landon, KE6JPM
Secretary	Ron Wagner, AC6RW
Directors	Clay Davis, AB9A Gary Lopes, WA6MEM Bob Sylvest, AB6SY
Past Vice President	

Appointed Offices:

QRO Editor	Diana Feinberg, AI6DF
Webmaster	Kel Vanderlip, W6KCV
K6PV QSL Manager	Jeff Wolf, K6JW
K6PV Repeater Trustee	Mel Hughes, K6SY
LAACARC Delegate	Jeff Wolf, K6JW
VE Coordinator	Dave Scholler, KG6BPH
VE ARRL Liaison	Jerry Shaw, KI6RRD
Net Control Operators	Malin Dollinger, KO6MD; Dale Hanks, N6NNW; Bob Sylvest, AB6SY; Ron Wagner, AC6RW; Dan Yang, K6DPY

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Email us: k6pv@arrl.net

Website: www.k6pv.org

Mailing Address:

Palos Verdes Amateur Radio Club
PO Box 2316
Palos Verdes Peninsula, CA 90274-8316

Monthly In-Person Meetings:

1st Thursday (except August and December in 2020) 7:30 pm at Fred Hesse Park, 29301 Hawthorne Blvd., Rancho Palos Verdes, CA. Visitors always welcome.

Repeaters (Open, though often listed as "Closed"):

PVARC: K6PV, 447.120 MHz

- **Analog FM:** (-), PL 100.0, CTCSS
- **Digital DMR:** 447.120 MHz (RX); 442.120 MHz (TX)
Talkgroup 31060, Color Code 1, Time Slot 2

"**PV-West**": W6MTA, 449.980 MHz (-), PL 173.8, CTCSS

To order a Club badge:

Gary Lopes, WA6MEM, wa6mem@cox.net

To order a Club jacket or patch:

Dave Scholler, KG6BPH, 310-373-8166

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Front page photo — Pt. Vicente Lighthouse before sunset on June 27, 2019. No current photos available due to COVID-19 situation.
PHOTO: DIANA FEINBERG, AI6DF

PVARC Club News

PVARC upcoming dates in 2020

- ◆ **PVARC monthly meetings online via Webex**
1st Thursday each month, 7:30-9:00 pm, except in December.
(in-person meetings at Hesse Park's McTaggart Hall will resume when permitted)
- ◆ **PVARC HF Enthusiasts Group meetings online via Webex**
2nd Saturday each month, 10:00 am to Noon
(in-person meetings at Palos Verdes Library main branch's Purcell Room will resume when permitted)
- ◆ **PVARC EmComm Interest Group online meetings via Webex**
3rd Saturday every month, 10:00-11:00 am
- ◆ **Walt Ordway, K1DFO, Technician and General amateur radio license classes at Hesse Park**
Saturdays, Nov. 7 and 14, 2020; exams, Nov. 21.
- ◆ **Field Operating Events:**
ARRL Field Day, June 27-28, at member homes.
(PVARC participation canceled) **International Lighthouse & Lightship Weekend**, Aug. 22-23.
- ◆ **Public service events in 2020 (tentative):**
(Event canceled) **RHE Hills Are Alive 10K/5K run/walk**, Aug. 10.
Conquer the Bridge race, Labor Day, Sept. 7.
Palos Verdes Half Marathon-10K-5K, Nov. 21.
- ◆ **PVARC 2020 Holiday Dinner:** Dec. 3, Los Verdes Golf Course.

Non-PVARC Events of Note:

- ◆ **W6TRW Swap Meet:** *(when permitted to resume)* last Saturday each month, Northrop Grumman Space Park, North Redondo Beach, 7:00-11:30 am. (Uncertain in July 2020.)■

WELCOME NEW MEMBERS OF THE PALOS VERDES AMATEUR RADIO CLUB IN 2019-2020

Georgiann Keller, KM6YGM

Annalise Little, KM6YGS

Tim Couture, KM6QWA

Frank Brown, KM6YGQ

Charlie Hansen, AJ6HZ

Diana DiDomenico, KM6IQN

William McClure, W7QLI

Rick Shigio, K6RTS

David Calloway, K6DKC

Jon Kuroyama, K6LDQ

Ray Grace, WA6OWM

Robert Keller, K9BGC

Alex Marko, KD6LPA

Erin Okada, KN6FYV

Derek Okada, K6DMO

Xing Yang, KN6FYX

Stephen Anderson, KN6FZA

Charles Tang, KN6FYY

Ikue Duncan, KN6FYW

Judy Frankel, KN6FYU

Robert Sawyer, KG6SFQ

Heidi Gransar, KN6HVG

Bruce Ward, KN6HVI

David Salazar, KE6GFR

Ed Jenkins, K6EXY

David Hostetler, W6OQ

Robert Rodriguez, KN6FQL

All events above are subject to modification or cancellation as public health conditions warrant.

PVARC Calendar

July 2020

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 PVARC digital DMR weekly net on K6PV repeater 7:30-7:55 pm	2 PVARC Monthly Meeting 7:30-9:00 pm via Webex video conference	3	4 Independence Day
5	6	7 PVARC analog FM weekly net on K6PV repeater & 2m cross-band 7:30-7:55 pm	8 PVARC digital DMR weekly net on K6PV repeater 7:30-7:55 pm	9	10	11 PVARC HF Enthusiasts Group, 10 am to Noon via Webex video conference
12	13	14 PVARC analog FM weekly net on K6PV repeater & 2m cross-band 7:30-7:55 pm	15 PVARC digital DMR weekly net on K6PV repeater 7:30-7:55 pm	16	17	18 PVARC EmComm Interest Group, 10:00-11:00 am via Webex video conference
19	20	21 PVARC analog FM weekly net on K6PV repeater & 2m cross-band 7:30-7:55 pm	22 PVARC digital DMR weekly net on K6PV repeater 7:30-7:55 pm	23	24	25
26	27	28 PVARC analog FM weekly net on K6PV repeater & 2m cross-band 7:30-7:55 pm	29 PVARC digital DMR weekly net on K6PV repeater 7:30-7:55 pm	30	31	

Please tell your friends and family about our November 2020 classes scheduled at Hesse Park.

Two Free Amateur Radio Courses

FCC **“Technician”** course (entry level)

FCC **“General”** course (2nd level)

Each course is 2 sessions

The sessions will be on 7 and 14 November 2020

Technician 9:30 AM to 1:30 PM both Saturdays (bring your lunch)

General 1:45 PM to 5:00 PM both Saturdays

The FCC tests will be 10:00 AM to noon on 21 November 2020

At the start of the 7 November Technician course, a member of the Palos Verdes Amateur Radio Club will give a 30 minute presentation on how to get further involved with amateur radio.

The class location is at Fred Hesse Community Park,
29301 Hawthorne Blvd., Rancho Palos Verdes, CA 90275

Confirm your attendance to Walt, K1DFO at waltordway@juno.com

There is no fee for either course.

Taking the FCC test is \$15.

Optional Material (sold at cost)

Gordon West books with all the FCC test questions,

\$26 for the Technician and \$26 for the General

Paper copy of Walt's Power Point charts,

\$22 for the Technician and \$20 for the General

For courses sponsored by the Palos Verdes Amateur Radio Club, students thru grade 12 who pass their examination at a PVARC VE test session will, upon application to the Club, be eligible for reimbursement up to a maximum of \$50 to cover the cost of materials and the examination fee.

Everyone who obtains their first ham radio license through a PVARC VE test session, regardless of age, will receive a free membership in the Palos Verdes Amateur Radio Club for the remainder of the current calendar year.



Palos Verdes Amateur Radio Club
P.O. Box 2316
Palos Verdes Peninsula, CA 90274
www.k6pv.org

NEW MEMBER & 2020 MEMBERSHIP RENEWAL FORM

NEW: _____ or RENEWAL: _____ MEMBERSHIP DATE: _____

Last Name: _____ First Name: _____ Spouse: _____

Street Address: _____

City: _____ Zip: _____

Phone: Home _____ Work _____ Cell _____

Email address: _____

(Unless otherwise noted emails will be sent to the applying member only)

License Call: _____ License Class: _____ ARRL Member? _____ Birth Mo./Day: _____

Other amateur radio groups you belong to: _____

Additional Household and/or Family Members (if Applicable):

Name _____ Call _____ Class _____ ARRL _____ Birth Mo./Day: _____

Name _____ Call _____ Class _____ ARRL _____ Birth Mo./Day: _____

Name _____ Call _____ Class _____ ARRL _____ Birth Mo./Day: _____

Individual membership (\$20.00) \$ _____

Household and/or Family membership (\$25.00) \$ _____

Additional donation to support PVARC activities \$ _____

PayPal: _____ Cash: _____ or Check #: _____ Date _____ TOTAL \$ _____

Please make checks payable to: Palos Verdes Amateur Radio Club; Dues based on January 1st to December 31st year.

PayPal payment: Go to www.paypal.com, enter recipient name: PVARC90274@gmail.com

All New and Renewal Member applications must be signed below.

I am applying for a new or renewal membership in the Palos Verdes Amateur Radio Club and understand that by accepting membership I agree to abide by the Club's constitution and by-laws (available on-line at: http://www.k6pv.org or upon request.)

Signature: _____ Date: _____

Family Member Signature: _____ Date: _____

Family Member Signature: _____ Date: _____