



# QRO

MONTHLY NEWSLETTER OF THE PALOS VERDES AMATEUR RADIO CLUB

AUGUST 2019



## Inside this month's QRO

Upcoming monthly meeting speakers .....	2
PVARC's International Lighthouse & Lightship Weekend .....	3-4
NG6R ranked as #1 California "Chaser" for Summits On The Air .....	5
HF Triplexer Upgrade for PVARC, <i>by Jerry Kendrick, NG6R, and Gary Lopes, WA6MEM</i> .....	6-10
PVARC's HF Enthusiasts Group meeting .....	11
PVARC club news.....	12-13
California Earthquakes Disrupt West Coast HF Propagation.....	14-15
PVARC Calendar, August 2019 .....	16
K1DFO's November 2019 ham license classes.....	17
PVARC membership renewal / application form .....	18

**Two programs:  
2019 Field Day in ARRL  
Los Angeles Section  
&  
International Lighthouse  
and Lightship Weekend**

**Thursday, August 1, 2019**

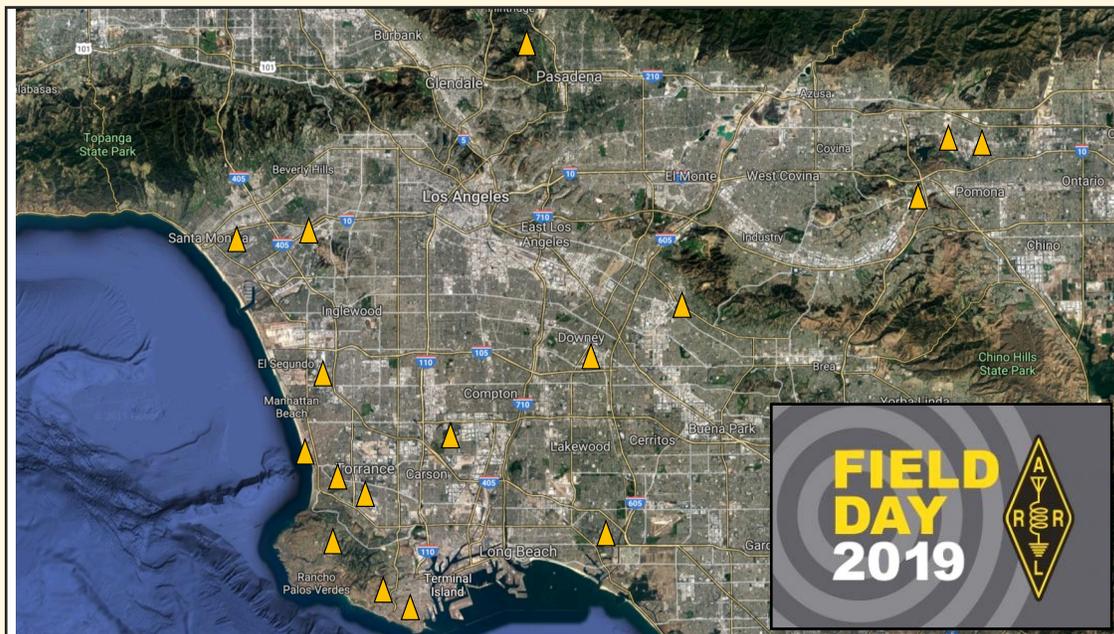
6:30 pm: 1) "What's Next?" group...all ham radio questions welcome, and 2) separate "DMR Basics" group

**7:30 pm: Main meeting and presentations**

Fred Hesse Community Park  
(McTaggart Hall)  
29301 Hawthorne Blvd.  
Rancho Palos Verdes, CA  
*Visitors always welcome*

## PVARC's upcoming meeting topics...

The PVARC's rare August meeting on **Thursday, August 1st, at 7:30 pm** in our usual Hesse Park room has two new highly-illustrated presentations by your **QRO** Editor.



First, we'll show a new video about 2019 ARRL Field Day throughout the ARRL Los Angeles Section including some first-time sites plus K6PV's 2019 operation at Soleado Elementary School in Rancho Palos Verdes.

We also have a new presentation about International Lighthouse and Lightship Weekend... how it came about, why we celebrate it at Pt.

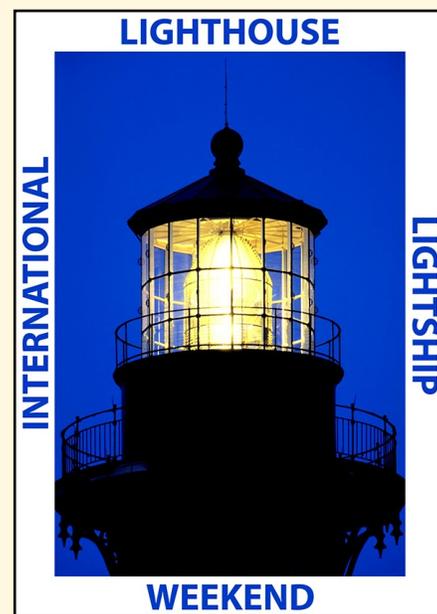
Vicente, and what the future holds for lighthouses. On the next two pages in this **QRO** issue you'll find coverage of our Lighthouse Weekend events, including the annual free family picnic on Sunday, August 18.

We've registered Pt. Vicente Lighthouse with the Scotland-based ILLW organization alongside 311 other lighthouses as of July 28. Typically 450 to 550 lighthouses register for each ILLW but about one-third do so in the final weeks as plans are confirmed.

The PVARC's **September 5** meeting is devoted to VHF/UHF Digital Mobile Radio (DMR) and our experiences since K6PV became a dual-mode repeater in March 2019. Our club directors and others have been working on a very-understandable presentation about DMR to demystify its complexity while explaining DMR's many advantages. Some members will also show their other DMR radios and present tips for becoming more proficient. We say again: no one is obligated to purchase a DMR radio...your existing analog FM radios still work on K6PV although they cannot reach any DMR talkgroups.

The September **QRO** issue will have a unique article reviewing—from a very different perspective—the three DMR HT radios our club supports. Your **QRO** Editor initially bought a TERA TR-7400 HT but due to involvement with other groups purchased both the AnyTone UV878 and TYT UV-380 HTs as well. While technical specifications differentiating these radios were published in recent **QRO** issues there are subtle yet significant ergonomic and user-friendliness differences that only become apparent by owning/operating all three brands.

Our October and November meeting topics are being finalized...so stay tuned. ■



The ILLW logo  
([www.illw.net](http://www.illw.net))

**Some of the other lighthouses registered for this year's ILLW**



**Swallowtail Lighthouse, New Brunswick, Canada**  
 PHOTO CREDIT: Jake Wellington. Open Source attribution: [https://commons.wikimedia.org/wiki/File:Swallowtail\\_Lighthouse\\_-\\_Grand\\_Manana\\_Island\\_NB\\_2009.jpg](https://commons.wikimedia.org/wiki/File:Swallowtail_Lighthouse_-_Grand_Manana_Island_NB_2009.jpg)

**Souter Lighthouse, Sunderland, England**  
 PHOTO CREDIT: Glenn Scott at English Wikipedia



**Uzava Lighthouse, Latvia**  
 PHOTO CREDIT: Laima Gūtmane (Creative Commons license)



**Bodie Island Lighthouse, Outer Banks, North Carolina USA**  
 PHOTO CREDIT: Jarek Tuszynski (Creative Commons license)

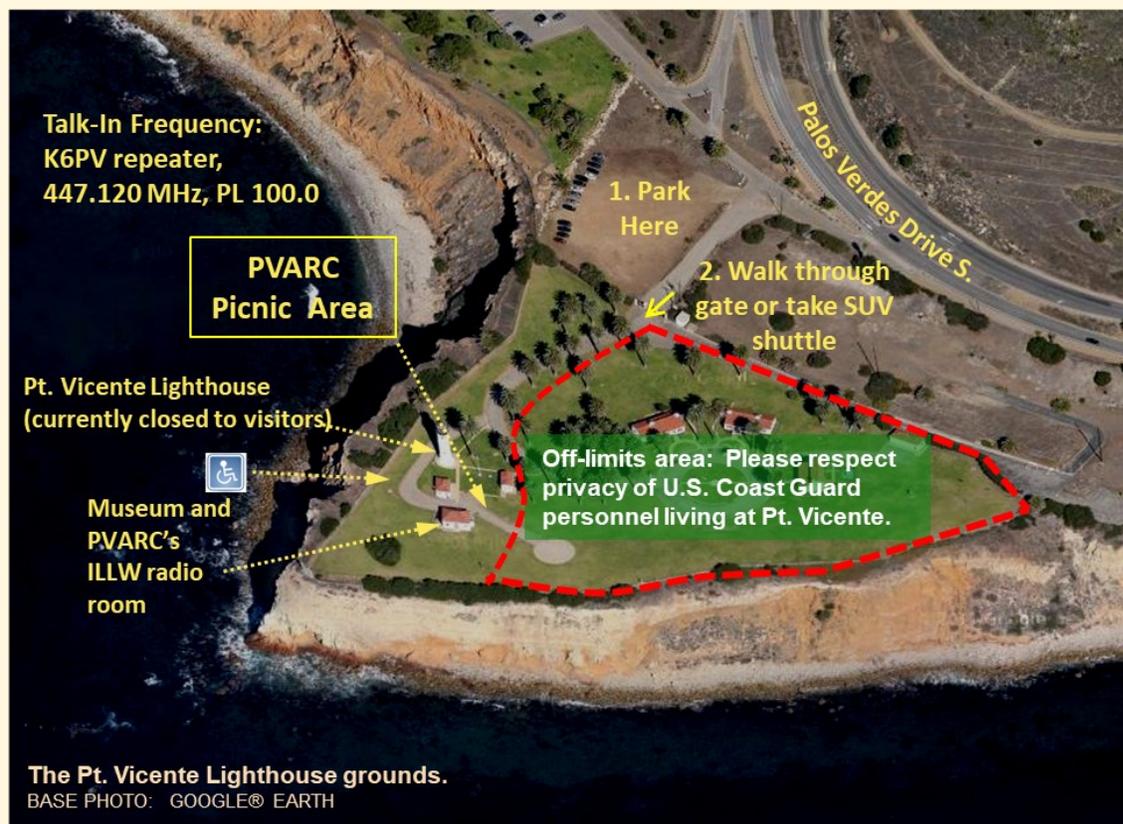
## August 16-18, 2019, is International Lighthouse & Lightship Weekend...here's what PVARC is doing

- **HF Operation:** Setup of our HF station inside the Pt. Vicente Lighthouse Museum begins at 3:00 pm, Friday, August 16. It will go on-air as K6PV from approximately 5:30 pm Friday, August 16, through Sunday 2:00 pm, August 18. We will operate late Friday and Saturday evenings if sufficient operator interest and as band conditions allow. PVARC members wishing to operate K6PV should bring an HT radio and use the K6PV analog repeater frequency for talk-in. In advance please advise Bob Closson, W6HIP, at w6hip@cox.net if you wish to operate so we can coordinate HF operators.
- **Sunday family picnic:** Our Sunday picnic starts serving at 12:30 pm. PVARC provides all the grilled meats, main side dishes, utensils, water, beverages, and some other items. If coming to the picnic we would appreciate that you bring a pot-luck side dish, dessert, or other item. Canopies provide shaded eating areas...but we definitely could use two more canopies (please let us know if you can bring one.)
- **Lighthouse grounds access:** Most picnic attendees need to park in the Coast Guard dirt lot outside the Pt. Vicente gate. An SUV shuttle will take anyone between the front gate and the lighthouse...or you may walk. We are allowed up to 10 vehicles inside the lighthouse grounds at any time—vehicles with a handicap placard or plates may park on grass areas along the north fence next to the lighthouse. HF operators may drive their vehicles next to the lighthouse during their hours of operation.

**“Now hear this:”** The U.S. Coast Guard requests all PVARC members and their guests observe these rules while on lighthouse grounds:

- Please sign the lighthouse guest book
- No alcoholic beverages, no smoking, no pets anywhere on lighthouse grounds
- Do not venture beyond the lighthouse, museum, and picnic areas; please keep away from the helipad
- No access into the lighthouse due to “environmental” factors.

Thanks again to PVARC member Bob Closson, W6HIP, for coordinating arrangements with the U.S. Coast Guard and Coast Guard Auxiliary enabling our continued use of the Pt. Vicente Lighthouse grounds.



### Directions:

- ◆ Take Palos Verdes Drive South exit labeled, “Pt. Vicente Interpretive Center.” Park in the dirt lot outside lighthouse gate.
- ◆ Wait for lighthouse gate to be opened...you may either walk down to the lighthouse area or ride in our SUV shuttle. Use talk-in frequency if needed or phone AI6DF at 310-544-2917.
- ◆ Up to ten vehicles (with handicapped placard or plates, or delivering supplies) may park on the grass west of the lighthouse.
- ◆ Please do not go outside the picnic area or near the three Coast Guard residences.

# Among Summits On The Air "Chasers":

## NG6R takes #1 point position in California

Fellow member Jerry Kendrick, NG6R, recently became the highest-scoring California "Chaser" in Summits On The Air. With 54,842 points he passed K6EL and is more than double the 3rd place operator. Congrats, Jerry.

"Chasers" earn points for contacts made with operators on SOTA summits. "Activators" are the SOTA operators who climb these hills, mountains, and peaks.

From SOTA's website (right) the PVARC remains sole activator of Catalina Island's Silver Peak. Mike Caulfield, AF6VT, and Joe Pace, NZ6L, first activated Silver Peak during our 2015 Islands On The Air DXpedition at Two Harbors. On our 2018 DXpedition Hugo Dominguez, KM6DQU, operated on Silver Peak with George Nestojko, AJ6JG, also present. ■

mit Log ▶ FAQ

## Chaser Results

aspirations and working towards a goal at your own pace. However, it can be fun to see how your progress compares to your SOTA logs.

Filter : W6 - USA -All Dates- -All Bands- -All Modes-

Position	Chaser Callsign	Activators Worked	Points	Avg. points per Expedition	View Log
1	NG6R	10106	54842	5.43	<a href="#">View</a>
2	K6EL	10273	52828	5.14	<a href="#">View</a>
3	AE9F	4356	25474	5.85	<a href="#">View</a>
4	NA6MG	4177	21665	5.19	<a href="#">View</a>
5	NK6A	2901	16482	5.68	<a href="#">View</a>
6	W6JMP	2514	14277	5.68	<a href="#">View</a>
7	KH2TJ	2346	13023	5.55	<a href="#">View</a>
8	N6JZT	2242	11474	5.12	<a href="#">View</a>
9	WA9STI	2144	10877	5.07	<a href="#">View</a>
10	AB6SO	2275	10672	4.69	<a href="#">View</a>
11	W6WW	1887	10599	5.62	<a href="#">View</a>
12	WA6DQC	1782	10172	5.70	<a href="#">View</a>

## Summit Report

### Silver Peak

**Summit Name:** Silver Peak  
**Summit code:** W6/CC-068  
**SOTA Association:** USA  
**SOTA Region:** Coastal Ranges  
**Lat, Long:** 33.4599, -118.569  
**NGR (UK/EI):**  
**Locator:** DM03rl  
**Height:** 550 M / 1804 ft  
**Special Notes:**  
**Extra Info:** [View](#)  
**Summit Map:** [Map](#)

### Scoring History

From	To	Score	Bonus
01/Jul/2009	31/Dec/2099	1	No

### First Activation

Date	Activator Callsign
28/Feb/2015	K6PV/6

### All Activation History

Date	Activator Callsign	QSOs	160m	80m	60m	40m	30m	20m	17m	15m	12m	10m	6m	2m	70cm	23cm	SSB	CW	FM
23/Feb/2018	KM6DQU	26	0	0	0	0	0	11	0	0	0	0	0	15	0	0	11	0	15
28/Feb/2015	K6PV/6	17	0	0	0	0	0	0	0	0	0	11	0	0	6	0	11	0	6

# HF Triplexer Upgrade for PVARC

By Jerry Kendrick, NG6R, and Gary Lopes, WA6MEM

In 2016, fellow PVARC member Ray N6HE, long-time leader of the club's annual trek to Catalina Island for Islands On The Air activation, began to muse about the benefits of operating multiple HF stations with just a single multi-band antenna. Ray had seen a QST article by K6KV from June 2010 describing an HF Triplexer that enabled simultaneous and safe operation of 10m, 15m and 20m bands by up to three separate stations on a single antenna. Ray's enthusiasm was infectious and Jerry NG6R became increasingly interested in building (or otherwise acquiring) such a device for the club's IOTA operation. [See QRO newsletter page 8, <http://www.n6rpv.net/n6rpvpage/pvarc/2016QRO/QRODec2016.pdf>]

As was pointed out in the above article, several commercial filter manufacturers began offering improved versions of Triplexers that were based on the concepts presented in K6KV's article. One such commercial supplier is VA6AM, whose 200W ICAS (or 100W 100% duty cycle) version of this HF Triplexer—fully tuned and productized in a nice enclosure—was available. After communicating with this supplier, NG6R offered to purchase just the printed circuit board (PCB) in order to enjoy the experience of actually building and optimally tuning the components for required performance and band isolation. VA6AM was very cooperative and provided a schematic and list of components needed to populate the PCB. Those parts were purchased; ELSIE and SPICE software modeling programs were utilized during optimization [See page 9, <http://www.n6rpv.net/n6rpvpage/pvarc/2017QRO/QROJan2017.pdf>]; the PCB was populated and fully tested and tuned to meet the same performance levels achieved by the commercial supplier, VA6AM.

In order for the Triplexer to achieve sufficient band isolation, a band pass filter (BPF) is required for each of the three HF bands input into the Triplexer. Rather than purchase VA6AM's commercial band pass filters, NG6R designed and built separate BPFs (using Cauer or elliptical filter principles for greater adjacent band attenuation) and tested those along with the Triplexer. Results of those excellent test results were published in the 2016 article cited earlier. At the time the original QRO article was published describing this Triplexer and BPFs, however, the unit had not yet been productized and prepared for transport and operations. So, the **first purpose of this article** is to show photos of this finished unit along with its companion BPFs, before the unit is retired by PVARC. Those photos are shown below in Figures 1 through 3.

Prior to its first operational deployment, Ray N6HE still recalls the trepidation he felt in volunteering to connect his expensive and sensitive transceiver to one spigot while Jerry NG6R transmitted 100W of RF power into a different input spigot only inches away. However, the Triplexer performed as it was designed and built to do; it isolated the two transceiver input connections and gave final proof that the theory was valid and the design was sound. (Isolation ~70dB: 40dB from Triplexer and >30dB from BPFs, in addition to inherent isolation from transceiver band-to-band separation).

This Triplexer and its companion BPFs were used successfully for IOTA DXpeditions to Catalina in 2017, 2018 and 2019. However, two changes in the club's typical operation have caused us to reevaluate this unit's ability to meet our evolving needs. The first change is the increasing use of FT8 digital mode (and likely FT4 in the near future) for IOTA and other club events, as well as the similarly demanding RTTY mode. These particular digital modes operate at full continuous power for a short time, unlike both CW and SSB modes that have a much lower duty cycle, even in the short term. This 100% duty cycle operation (from several to many seconds, continuously) can cause overheating in either/both the Triplexer and BPFs.

*Continued on next page ►*

## HF Triplexer Upgrade for PVARC

► *Continued from previous page*

The second operational change is the increasing use of power amplifiers during IOTA operations. The use of an HF amplifier on one of the three Triplexer-related bands (10m, 15m or 20m) previously has had to be exclusive of the Triplexer, as it is not capable of handling this higher RF power level.

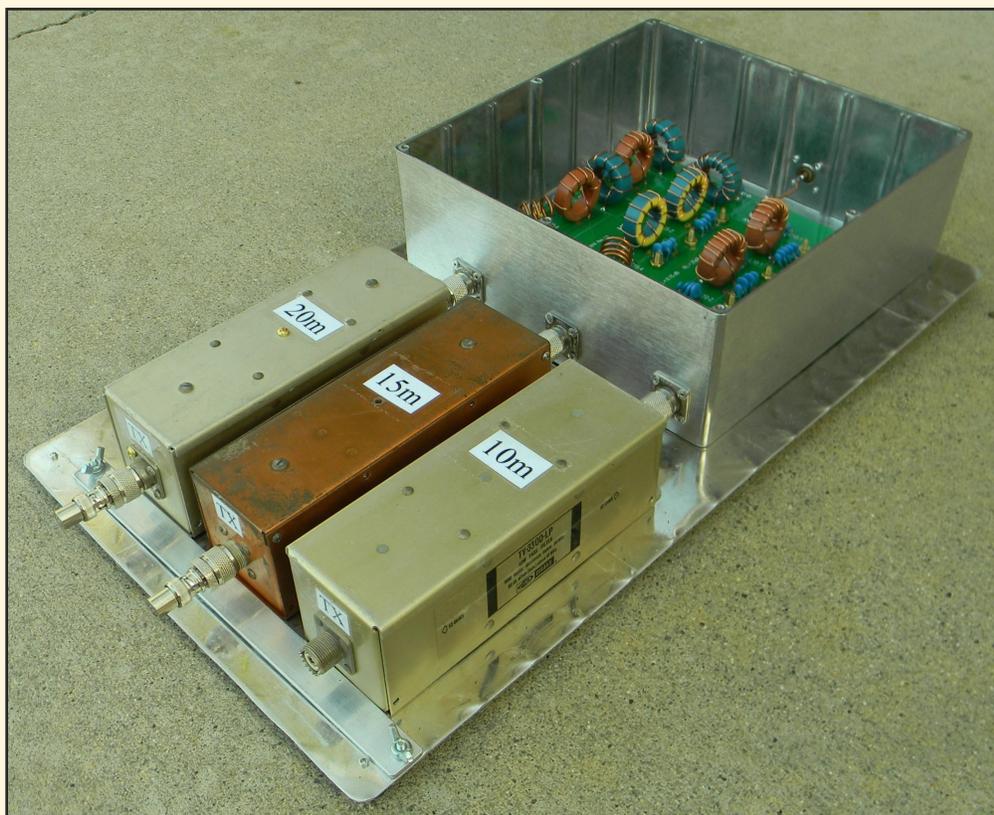
It became clear that the integrated VA6AM Triplexer and NG6R BPFs that had been used successfully on IOTA operations would not be able to accommodate these new club requirements (digital mode high duty cycle and use of power amplifiers). So, the PVARC board of directors authorized the purchase of a higher power HF Triplexer and a companion set of HP HF BPFs.

This new setup was employed successfully in the June 2019 ARRL Field Day activity. The customary setup for FD was modified to have both the CW station and the SSB station access a single multi-band hex beam antenna via the Triplexer, rather than erecting two separate directional beam antennas as in years past. The **second purpose of this article** is to show photos of the upgraded Triplexer and companion BPFs that replace the low power unit previously used.

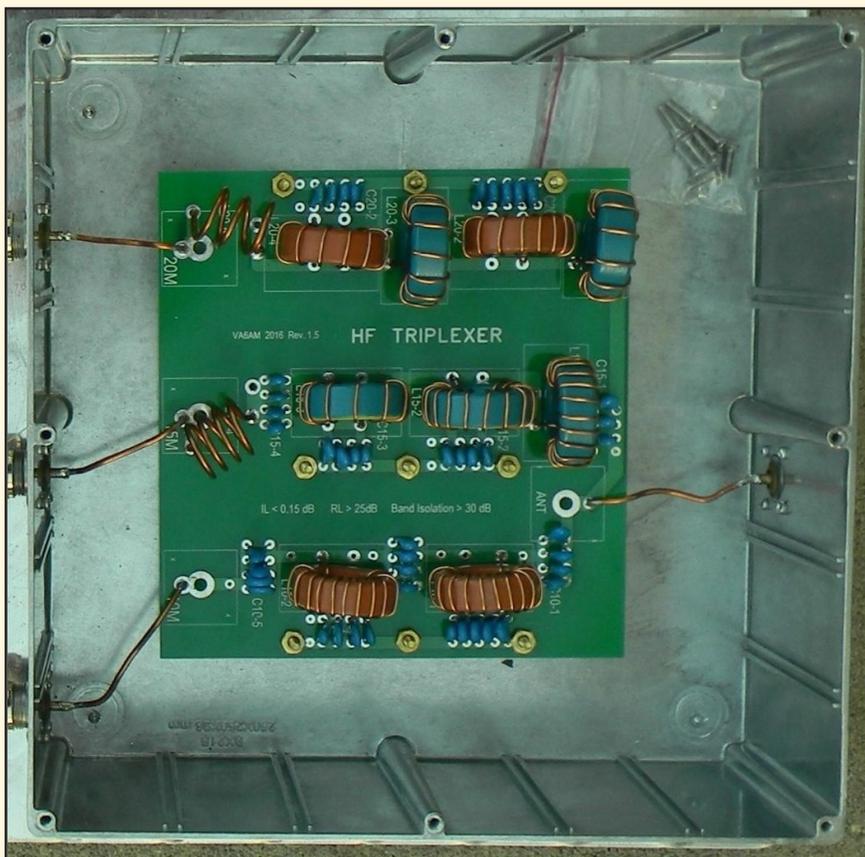
*Continued on next page* ►

**Figure 2.** Top view of populated VA6AM Triplexer printed circuit board housed within the spacious BUD Industries 10"x10"x4" aluminum enclosure.

BOTH PHOTOS: JERRY KENDRICK, NG6R



**Figure 1.** Integrated HF Triplexer (with lid removed) and BPFs constructed by NG6R in 2016 based on commercial VA6AM Triplexer design and with NG6R-designed Cauer or elliptical band pass filters for HF bands 10m, 15m and 20m,

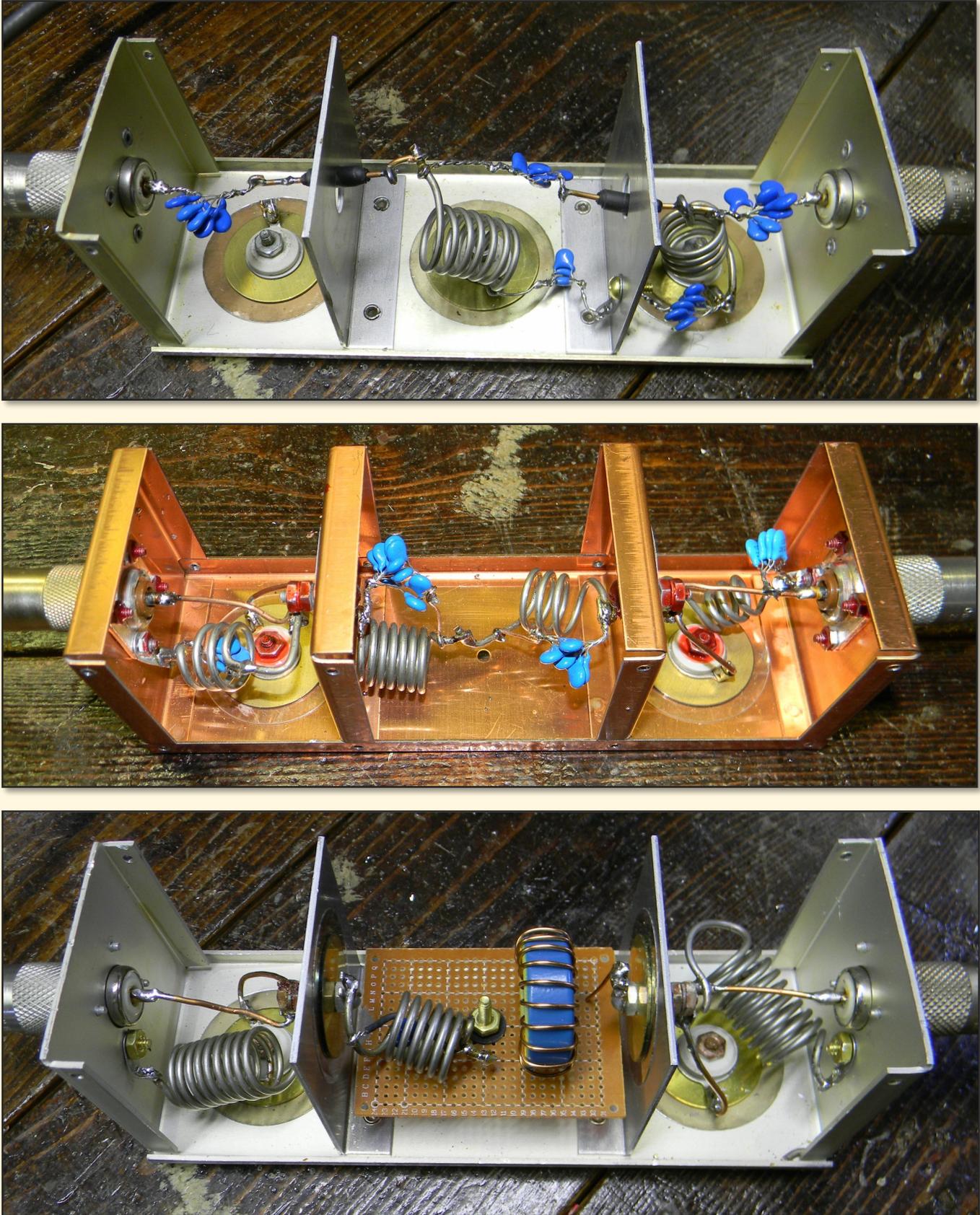


**Figure 2.** Top view of populated VA6AM Triplexer printed circuit board housed within the spacious BUD Industries 10"x10"x4" aluminum enclosure.

BOTH PHOTOS: JERRY KENDRICK, NG6R

## HF Triplexer Upgrade for PVARC

► *Continued from previous page*

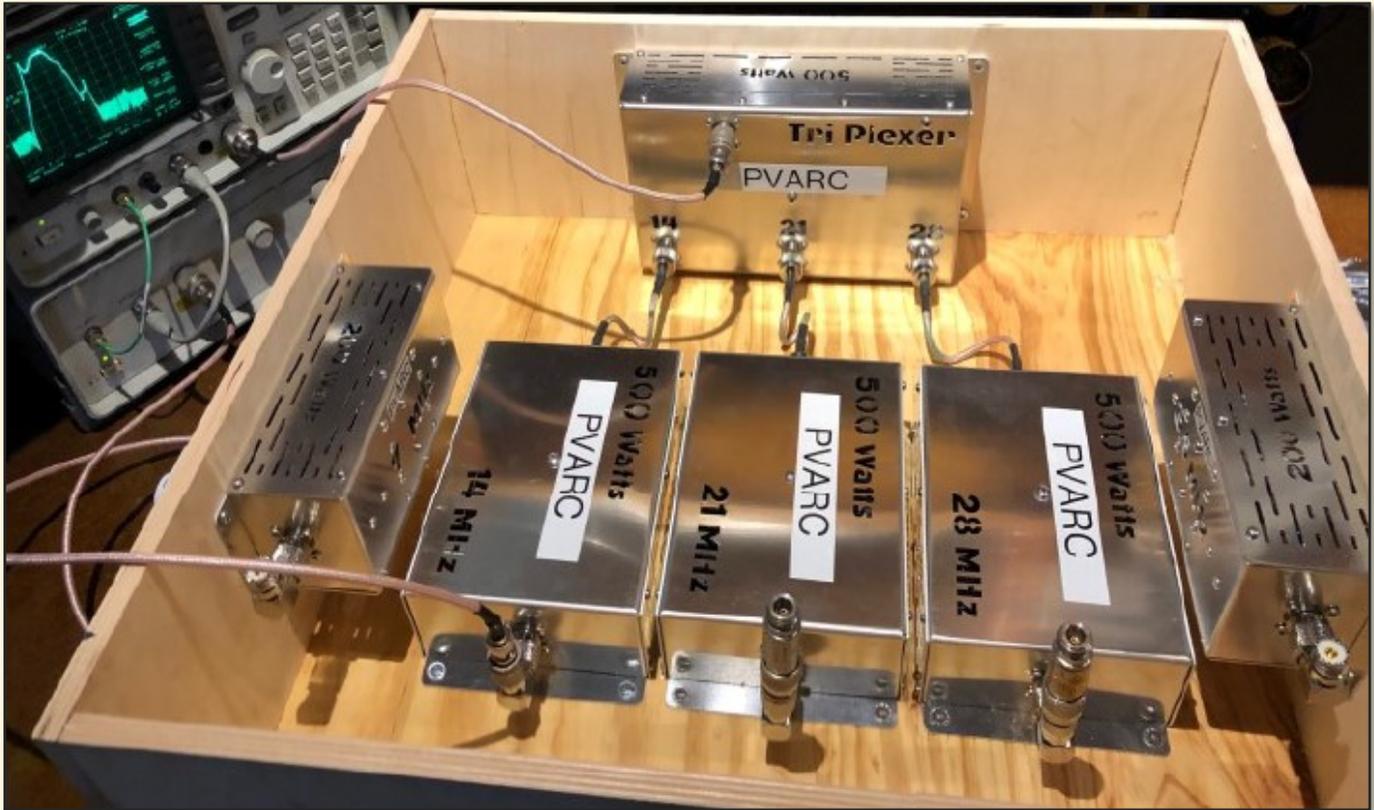


**Figure 3. (Upper)** 10m band pass filter **(Middle)** 15m band pass filter **(Lower)** 20m band pass filter. All three filters utilized enclosures, vertical isolation panels, and some internal capacitors from outmoded TV low pass filters (LPFs). The LPFs donated by several PVARC club members are left over from an earlier era of analog TV, by way of which out-of-band and harmonic emissions from ham radio transmitters were significantly attenuated to mitigate interference to analog TV channels 2 through 6.

*Continued on next page ►*

## HF Triplexer Upgrade for PVARC

► Continued from previous page



**Figure 4.** Overhead view of readily portable layout for PVARC's new high power Triplexer; 500W band pass filters for 10m, 15m and 20m; and, 200W BPFs for 40m and 80m. This configuration was bench tested by Gary WA6MEM and used successfully for the club's June 2019 Field Day activities.



**Figure 5.** Top view of new 10m/15m/20m high power HF Triplexer. Note the point-to-point wiring on an elevated insulating grid support structure, as compared with the PCB approach of VA6AM's layout shown in Figures 1 and 2.

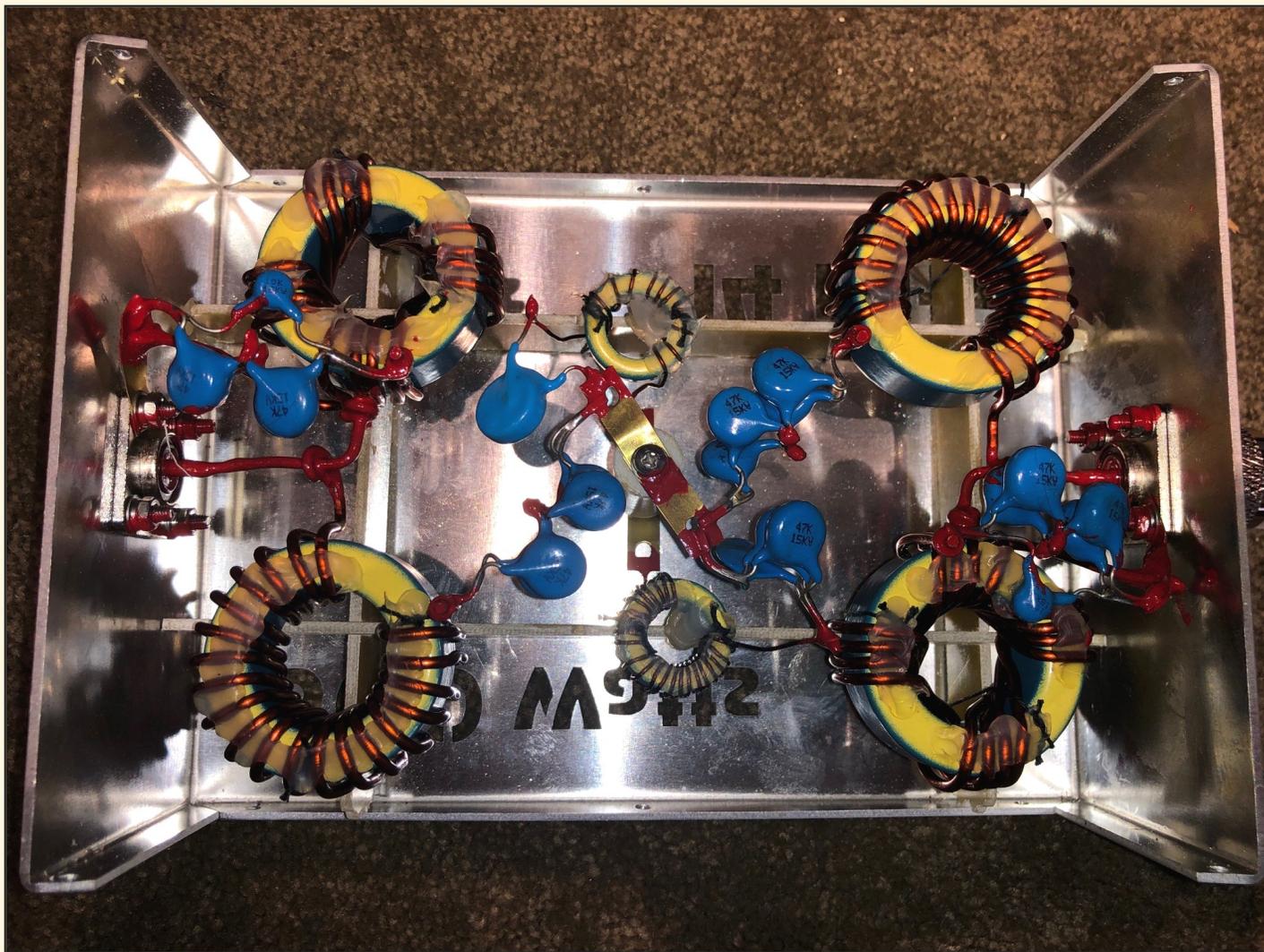
BOTH PHOTOS: GARY LOPES, WA6MEM

Continued on next page ►

## HF Triplexer Upgrade for PVARC

► *Continued from previous page*

Three 500W band pass filters (BPFs) accompany the Triplexer and are required to achieve sufficient isolation among the three possible simultaneous RF inputs on the three different bands. A representative layout of the 20m filter version is shown in Figure 6.



**Figure 6.** Top view of 20m BPF internal layout. Note the same elevated insulating grid support structure as used in the Triplexer. Note also the liberal use of what appears to be “hot glue” used to hold coiled wire spaces fixed on toroids and also to secure some components to the grid support structure. Some similarly constructed BPFs by other vendors have experienced an undesired melting of this type of material during high power and high duty cycle operation. For this reason, some filter manufacturers (including VA6AM) recommend against using any added material to stabilize toroidal coil spacing, relying instead on wire-to-toroid friction and wire rigidity to maintain established spacing. PHOTO: GARY LOPES, WA6MEM

The VA6AM Triplexer and companion BPFs used by the club for several years and shown in Figures 1, 2 and 3 are being donated to neighboring United Radio Amateur Club (URAC) of Los Angeles Harbor, which operates club station K6AA. Ray N6HE arranged for this transfer, which will provide that club the benefit of HF Triplexer operation without the substantial cost of a new purchase. Furthermore, it will extend the life of this asset that might otherwise have been relegated to the electronics junk box. PVARC looks forward to using the new Triplexer and filters that will extend our capabilities to include higher power and/or higher duty cycle modes of operation. ■

## Next HF Enthusiasts Group meeting at PV Library is August 10

The PVARC's HF Enthusiasts Group next meets on August 10, 10:00 am to Noon, at the Palos Verdes Library's main branch (701 Silver Spur Rd / 650 Deep Valley Dr.) in the Purcell Room behind the Reference Desk. Free parking is on the Library roof, in a parking structure on Deep Valley Drive, or inside a small parking area accessed from Silver Spur Rd. This month's meeting is also a great option if not operating at the Rolling Hills Estates "Hills Are Alive 10K/5K" or attending the L.A. County Disaster Communications Service quarterly training day in the County EOC.

Here are some topics discussed at the July 13 HFEG meeting with 12 attendees (thanks to Ray Day, N6HE, for this recap):

Jerry NG6R reported his triplexer is being transferred to URAC for the modest cost of only parts that were purchased.

Greg K6GHL bought an IC-7300 and is having fun despite a high noise level at home. Using FT8.

Jeff K6JW is reworking his SteppIR / rotator system

Clay AB9A has restarted his Flex GUI interface-characterization project. He also showed two inexpensive 3D-printed keys (1 pump handle, 1 iambic paddle)

George AJ6JG showed his "Morserino-32" Arduino keyer kit.

Carlos WD6Y reported he is stuck at 92 for digital (maybe mixed?) DXCC. Working towards a 432 moonbounce station!

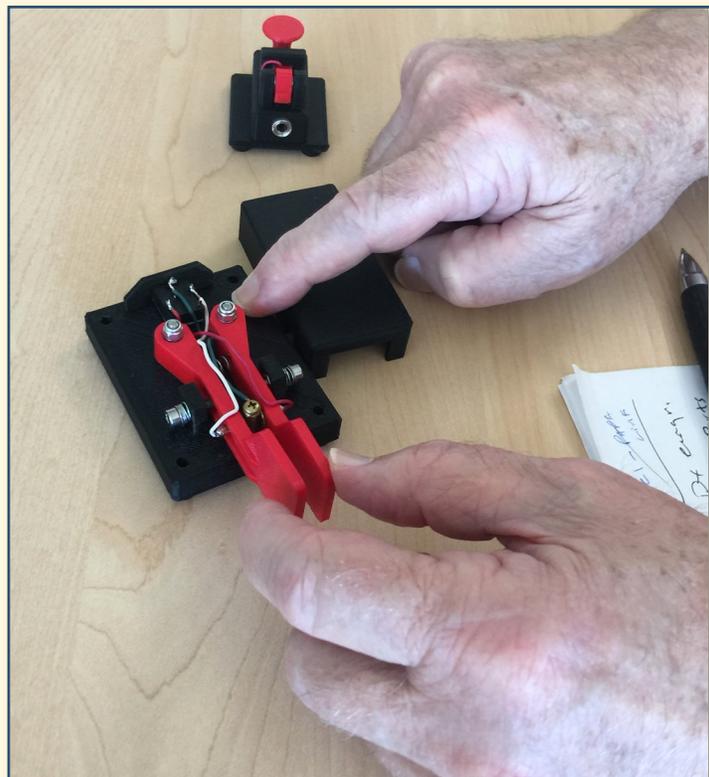
Ray N6HE donated an inexpensive GPS "puck" to the group – claimed by NG6R. Passed around a list of "clearing-the-shack specials" now on eHam for sale – no takers.

Bob AC6RM said he worked Mauritania on FT8. He hooked up his computer clock slaved to a GPS unit but having transmitted-RFI from his rig interfering with the rig's CAT control of rig; got lots of advice.

Mike AF6VT advised he has too much work (he's supposedly "retired," but his employer can't live without him).

Neal N6YFM got a QSL for DXCC #100!!!

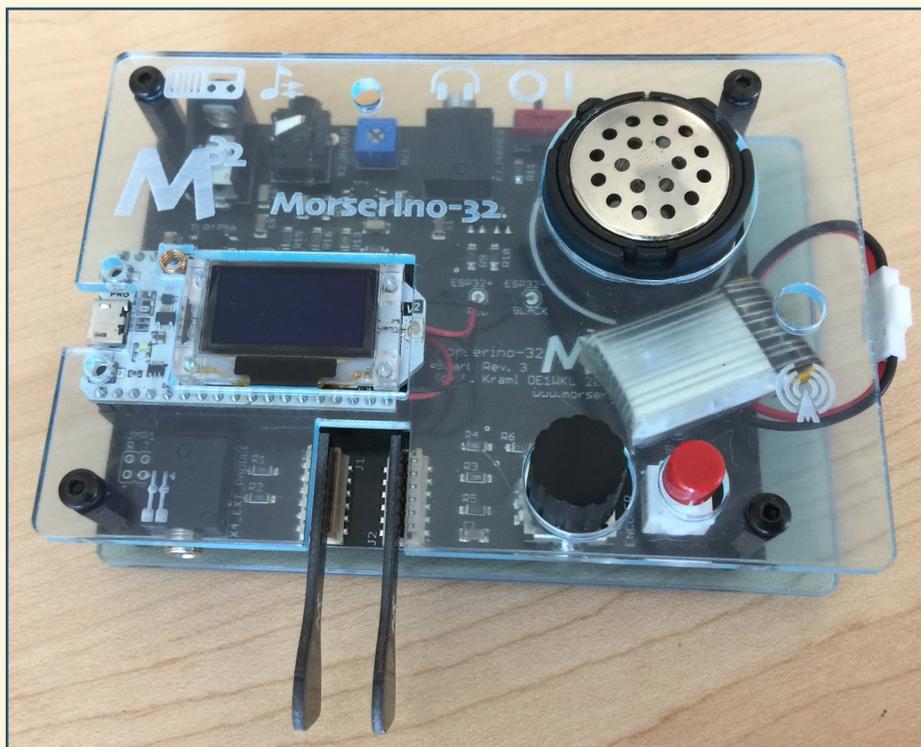
Brian K6BRN – has lots of work but described his east coast radio/antenna setup. ■



**Above:** Clay, AB9A, showed two 3-D printed Morse keys.

**Bottom:** George, AJ6JG, assembled this Morserino-32 keyer kit that uses an Arduino processor board.

PHOTOS: RAY DAY, N6HE



## PVARC Club News

### Consider being an ARRL member

Please consider joining the American Radio Relay League (ARRL) if not currently 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 being an ARRL-affiliated club requires at least 51% of club members also be ARRL members. Annual ARRL membership costs \$49 and includes the monthly QST magazine as well as access to numerous web-based materials and assistance with ham radio issues. Visit: [www.arrl.org/](http://www.arrl.org/) then click "Join/Renew." ■

### PVARC badges await pickup at next monthly meeting...or another time

Gary Lopes, WA6MEM, has the following new PVARC badges ready for distribution at our August 1, 2019 monthly meeting at Hesse Park or by special arrangement.

- K6MU
- KI6YMD
- NJ6I
- W6BMD
- W7QLI
- WJ1P / DU1X

To make special arrangements with Gary (or to order a badge) contact him at: [wa6mem@cox.net](mailto:wa6mem@cox.net). ■

### Embroidered PVARC patches available at monthly meetings

PVARC club patches are available at our monthly meetings 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

### Contacts:

QRO Editor: 310-544-2917, [ai6df@arrl.net](mailto:ai6df@arrl.net)

Webmaster: 310-742-6123, [kelvin@vanderlip.org](mailto:kelvin@vanderlip.org)

Email us: [k6pv@arrl.net](mailto:k6pv@arrl.net)

Website: [www.k6pv.org](http://www.k6pv.org)

### Mailing Address:

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

### Monthly Meetings:

1<sup>st</sup> Thursday (except July and December in 2019) at 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](mailto:wa6mem@cox.net)

### To order a Club jacket or patch:

Dave Scholler, KG6BPH, 310-373-8166

**QRO** is published monthly by the Palos Verdes Amateur Radio Club, ©2019 all rights reserved. For permission to reprint please contact PVARC at: [k6pv@arrl.net](mailto:k6pv@arrl.net)

Front page photo — Pt. Vicente Lighthouse after Sunset on a "dog day of summer," July 24, 2019. PHOTO: DIANA FEINBERG, AI6DF

## PVARC Club News

### PVARC upcoming dates in 2019

- ◆ **PVARC monthly meeting at Hesse Park, McTaggart Hall**  
1st Thursday each month, 7:30-9:30 pm, except in August and December. 6:30-7:25 pm, "What's Next?" group for newer hams and "DMR Basics".  
In 2019 only: No monthly meeting on July 4 due to Independence Day; special meeting August 1.
- ◆ **HF Enthusiasts Group meetings at Palos Verdes Library, Peninsula Center main branch**  
2nd Saturday every month, 10 am to Noon in the Purcell Room.
- ◆ **Walt Ordway, K1DFO, Technician and General amateur radio license classes at Hesse Park**  
Saturdays, November 2 and 9, 2019; license exam, November 16.
- ◆ **Public service events in 2019:**  
**Hills Are Alive 10K/5K**, Rolling Hills Estates, **August 10.**  
**Conquer the Bridge** run/walk at Los Angeles Harbor across Vincent Thomas Bridge, **Labor Day, September 2 (see below).**  
**Palos Verdes Half Marathon-10K-5K**, Nov. 16.  
**2019 International Lighthouse & Lightship Weekend**, Pt. Vicente Lighthouse, August 16-18.  
**PVARC 2019 Holiday Dinner:** Dec. 12, Los Verdes Golf Course, Rancho Palos Verdes.

#### Non-PVARC Events of Note:

- ◆ **W6TRW Swap Meet:** last Saturday of each month, Northrop Grumman Space Park, North Redondo Beach, 7:00-11:30 am.
- ◆ **PACIFICON** (ARRL Pacific Division Convention) October 18-20, San Ramon, CA. ■

#### Operators needed for "Conquer the Bridge"

The Labor Day, Sept. 2, "Conquer the Bridge" 5.3 Mile race starts on Harbor Blvd and 5th Street (near the Maritime Museum), goes North on Harbor Blvd to the Vincent Thomas Bridge, then over the bridge to Navy Way on Terminal Island where it turns around and comes back. Over 4,000 runners participated last year. The PVARC will handle radio communications for the race again this year—contact Walt, K1DFO at waltordway@juno.com if you can operate at this event. ■

### WELCOME NEW MEMBERS OF THE PALOS VERDES AMATEUR RADIO CLUB IN 2018-2019

Debra Shrader, KM6QVX  
Daniel Shrader, KM6QXC  
Baldomero Fernandez, KM6QVV  
Brian Keen, KM6QWC  
Emanuele Rodrigues-Berardini, KM6QVZ  
Neal Pollack, N6YFM  
Daniella Ward, KM6TRC  
Talbot Knighton, KM6TDF  
Dylan Brown, KM6TDI  
Robert Cullinan, NJ6I  
Ellen Tessitore, N6XJM  
Michael Vulpilat, KJ6RVU  
Brian Clebowicz, K6BRN  
Warren Arata, KM6YGR  
Chris Sundlee, N6CGS  
Brad Rachielle, KC6NNV  
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

## ***Who would have thought...HF noise monitoring might be earthquake early predictor due to Earth's magnetic field emissions***

### **Report: California Earthquakes Disrupted HF Propagation on West Coast**

From the ARRL Weekly Letter  
07/08/2019

British Columbia radio amateur Alex Schwarz, VE7DXW, said that an Independence Day magnitude 6.4 earthquake in California's Mojave Desert and multiple aftershocks negatively affected HF propagation on the US west coast. Schwarz, who maintains the "[RF Seismograph](#)" and has drawn a correlation between earthquake activity and HF band conditions, said the radio disruption began at around 1600 UTC on July 4, and continued into July 5. He said that on July 4, the blackout was total except for 20 meters, where conditions were "severely attenuated," Schwarz said. The RF Seismograph also detected the magnitude 7.1 earthquake on July 6 in the same vicinity, Schwarz reported. The distance between the monitoring station in Vancouver, British Columbia, and that quake's epicenter is 1,240 miles.

"Things are back to normal after the strong quake, as far as the ionosphere is concerned, but the unrest has not stopped yet," Schwarz told ARRL on July 8. "There were over 7,000 mostly small quakes, and these do not seem to have the energy to affect the ionosphere. We all hope that this will settle down soon." Schwarz said the RF Seismometer detected a magnitude 6.9 earthquake in Indonesia.

Over the holiday weekend, Schwarz had reported "a massive short-wave radio blackout" on the west coast. "It is not caused by the sun (the sun is quiet), but the field lines of the 'quakes themselves," he said. A magnitude 6.2 earthquake took place off Vancouver Island, British Columbia, on July 4.

On July 6, Schwarz said, the RF Seismograph showed an increase in noise on 80 meters some 13 hours beforehand, as well as some propagation changes on 40 and 30 meters — low before the quake and increasing in its wake. Increases in noise on 15 and 10 meters were detected some 10 hours before the earthquake, diminishing about 3 hours afterward. In addition, noise level and propagation changes on 20 meters some 3 hours before the earthquake.

Schwarz said larger quakes spur longer periods of 80-meter noise which cross the day/night boundary. "The difficulty is the 80 meter noise difference between day and night, which is hard to subtract from the graphs," he added. With earthquakes of lesser magnitude (4.0 to 5.9), the RF Seismograph displays the rise and fall typically within daytime or nighttime propagation, making it more obvious. "The measurement on the other bands is more consistent, and the quake can have either an amplifying or attenuating effect on propagation," Schwarz told ARRL.

All of the earthquakes of the past few days occurred within a 4-square-mile area in and around Ridgecrest in Kern County. Several injuries were reported, along with property damage. ARES and the Sierra Amateur Radio Club (SARC) have actively supported communications during the earthquake swarm and magnitude 7.1 quake in and around Ridgecrest, in the Mojave Desert. "Many club members are busy collecting information, running an emergency net, as well as staffing a back-up communication van," Mike Herr, WA6ARA, told ARRL on July 7.

*Continued on next page ►*

## Report: California Earthquakes Disrupted HF Propagation on West Coast

► Continued from previous page

The RF Seismograph propagation tool employs an omnidirectional multiband antenna to monitor JT65 frequencies ( $\pm 10$  kHz) on 80, 40, 30, 20, 15, and 10 meters. Recorders monitor the background noise and display the result in six color-coded, long-duration graphs displaying 6 hours of scans. When signals are present on a band, its graph trace starts to resemble a series of vertical bars.

The RF Seismograph recorded the magnitude 7.5 earthquake in Ecuador on February 22. Schwarz recounted that noise on 15 meters began to be visible about 1 hour before the quake; then, 2 hours after the quake released, 15 meters started to recover. It did not affect 80 meters. "The earthquakes show up as RF noise because of the electric field lines, now scientifically confirmed to change the way the ionosphere reflects RF," Schwarz said.

Schwarz has cited an article in the October 2018 edition of *Scientific American*, which, he says, explains the phenomenon. (See Erik Vance's "[Earthquakes in the sky](#)," *Scientific American*, October 2018, p. 44.) The *Scientific American* article explores measurements in Japan and how earthquakes can create electric field lines that extend into the atmosphere. Schwarz said 171 earthquakes — all magnitude 6.0 events or greater — were studied, and only 15 of them had no RF noise associated with them.

RF Seismograph is now a project on Scistarter.com, facilitated through Arizona State University. ■

Separate from the ARRL article above:

From the RF Seismograph webpage,

<http://users.skynet.be/myspace/mdsr/index.html>

"The magnetic field lines reach into the ionosphere and disturb or bend the layers, breaking existing radio paths. The signals that the Seismograph receives drop out!"

Circulating ground current emits the magnetic field lines that ultimately reach the ionosphere.

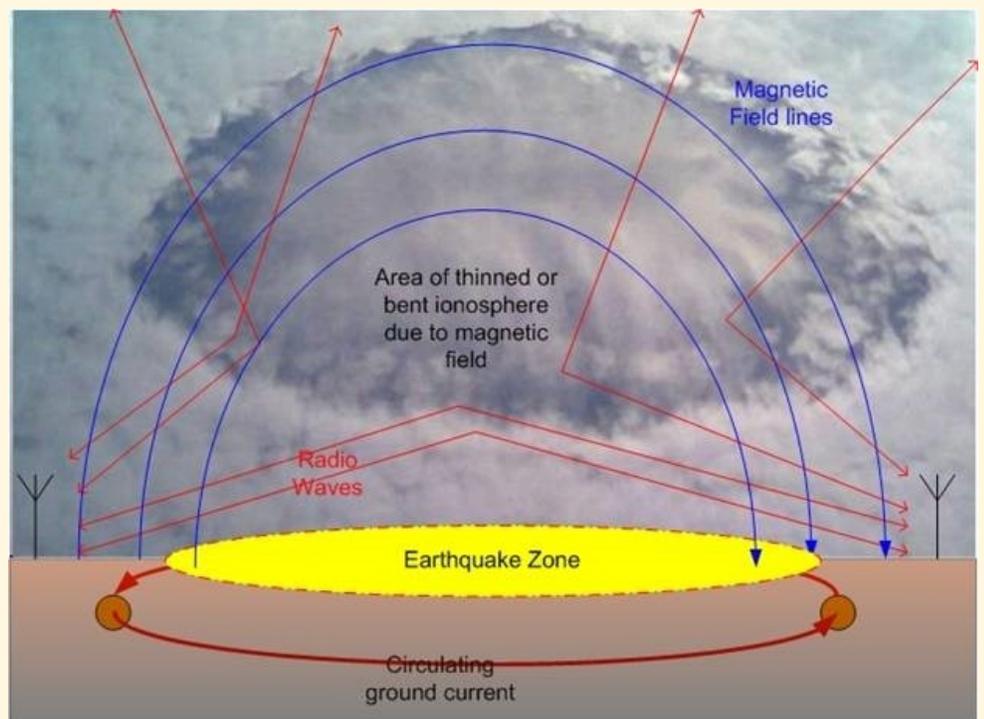


Illustration source credit: <http://users.skynet.be/myspace/mdsr/index.html>

## PVARC Calendar

August 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				<b>1</b> PVARC meeting at Hesse Park: 6:30 pm: What's Next, DMR basics 7:30 pm: Main meeting	<b>2</b>	<b>3</b>
<b>4</b>	<b>5</b>	<b>6</b> PVARC weekly net on K6PV repeater & cross-band, 7:30 pm (analog); 8:00 pm (DMR only)	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b> PVARC HF Enthusiasts Group meeting, 10 am-Noon, Palos Verdes Library Peninsula Center; also, RHE "Hills Are Alive" 10K/5K
<b>11</b>	<b>12</b>	<b>13</b> PVARC weekly net on K6PV repeater & cross-band, 7:30 pm (analog); 8:00 pm (DMR only)	<b>14</b>	<b>15</b>	<b>16</b> International Lighthouse & Lightship Week-end at Pt. Vicente Lighthouse. Setup starts 3 pm	<b>17</b> International Lighthouse & Lightship Week-end at Pt. Vicente Lighthouse. HF operation 7 am to 10 pm
<b>18</b> International Lighthouse & Lightship Week-end at Pt. Vicente Lighthouse. Family picnic at 12:30 pm	<b>19</b>	<b>20</b> PVARC weekly net on K6PV repeater & cross-band, 7:30 pm (analog); 8:00 pm (DMR only)	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>
<b>25</b>	<b>26</b>	<b>27</b> PVARC weekly net on K6PV repeater & cross-band, 7:30 pm (analog); 8:00 pm (DMR only)	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b> W6TRW Swap Meet, 7:00-11:30 am at Northrop Grumman, North Redondo Beach.

Tell your friends and family about our upcoming ham license classes at Hesse Park.

## Two Free Amateur Radio Courses

FCC "**Technician**" course (entry level)

FCC "**General**" course (2<sup>nd</sup> level)

Each course is 2 sessions

The sessions will be on 2 and 9 November 2019

**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 10:30 AM to noon on 16 November 2019

At the start of the 2 November Technician course, 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](mailto: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 \$18 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.n6rpv.net/pvarc or k6pv.org

NEW MEMBER & 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 \$ \_\_\_\_\_

Cash: \_\_\_\_\_ or Check #: \_\_\_\_\_ Date \_\_\_\_\_ TOTAL \$ \_\_\_\_\_

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

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.n6rpv.net/pvarc/constitution.htm or upon request.)

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Family Member Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Family Member Signature: \_\_\_\_\_ Date: \_\_\_\_\_