

QRO

Monthly Newsletter of the Palos Verdes Amateur Radio Club



NOVEMBER 2018

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"History of Pt. Vicente Lighthouse"

Kim Castrobran,
U.S. Coast Guard Auxiliary

Thursday, Nov. 1, 2018

7:30 pm: Fred Hesse Park 29301 Hawthorne Blvd. Rancho Palos Verdes, CA

6:30 pm: "What's Next?" for newer hams or anyone needing information about amateur radio.

PVARC's upcoming meeting topics...

Our November 1st meeting speaker is U.S. Coast Guard Auxiliary flotilla officer Kim Castrobran presenting the history of Pt. Vicente Lighthouse, including its former radio equipment. Built in 1926 and today the Palos Verdes Peninsula's most iconic symbol, the Pt. Vicente Lighthouse has graced the front page of every **QRO** newsletter since late 2010.

We do not have a monthly meeting at Hesse Park in December...instead we hold our annual Holiday Dinner (see additional information about the Holiday Dinner elsewhere in this **QRO** issue.)

Our speakers for 2019 are being arranged but we expect to have another "Show Us Your Shack" meeting because several SUYS presentations couldn't be made on September 6 due to insufficient time.

As mentioned in mid-2017 after switching our monthly meetings to the first Thursday of each month... there will be years when our January meeting falls on New Years Day or the July meeting on Independence Day. In 2019 the 1st Thursday in July is Independence Day so there won't be a PVARC meeting then. We intend to meet instead on the 1st Thursday in August 2019 as a special case, assuming Hesse Park's room is available to us. ■

PVARC upcoming dates in 2018-2019

- PVARC monthly meeting at Hesse Park, McTaggart Hall
 1st Thursday each month, 7:30-9:30 pm, except in August and December.
 In 2019: No monthly meeting on July 4, Independence Day; instead special meeting on August 1
- ◆ HF Enthusiasts Group meetings at Palos Verdes Library, Peninsula Center (Purcell Room)
 2nd Saturday every month, 10 am to Noon
- Walt Ordway, K1DFO, amateur radio license classes at Hesse Park
 Up next: Saturdays, November 3 and 10; license exam November 17
 In 2019: Saturdays, February 2 and 9, license exam February 16
 In 2019: Saturdays, May 4 and 11, license exam May 18
- ◆ Public service events: Palos Verdes Half Marathon, November 17. Steve Collins, KI6TEQ, is leading our coverage. In 2019: TBA
- ◆ PVARC 2018 Holiday Dinner: Los Verdes Golf Course, Rancho Palos Verdes
 Thursday, December 6. Guest speaker: Manhattan Beach schools K-5 science teacher Joanne
 Mitchell, KM6BWB, on high-altitude balloon projects with Kindergarten through 5th grade students
- ARRL 2019 Southwestern Division Convention and Yuma Hamfest, Feb. 15-16, Yuma, AZ
- PVARC 2019 Islands On The Air DXpedition to Two Harbors, Catalina Island, February 20-24
- ARRL 2019 Field Day, Soleado Elementary School, Rancho Palos Verdes, June 29-30
- 2019 International Lighthouse & Lightship Weekend, Pt. Vicente Lighthouse, August 16-18

PVARC's 2019 "Islands On The Air" DXpedition to Catalina Island now in planning stages

Planning recently started for our 2019 "Islands On The Air" DXpedition to Two Harbors on Catalina Island, with PVARC Vice President Ray Day, N6HE, again serving as DXpedition team leader. We'll be at Two Harbors from Wednesday, February 20, until mid-day Sunday, February 24.

Priority will be given to previous DXpedition participants and thereafter it's first-come, first-served up to the limit of our available accommodations. Each participant is responsible for paying their own Catalina Express transportation to/from Two Harbors, cabin room, pro-rata share of breakfast and lunch costs from food the team brings, dinners at the only restaurant in Two Harbors, and any personal supplies/snacks. Rates for our cabins will be available around January 1....last year total room cost for four nights was \$224.40 per person. And pack lightly—every participant will use part of their 100-pound baggage allowance to help carry DXpedition gear.

We expect again having three stations, including in the CQ Worldwide 160-Meter SSB Contest and the North American RTTY QSO Party. If interested in being a team member please advise Ray, N6HE, at: rayday@cox.net. The PVARC has activated Catalina Island—North America 066—for "Islands On The Air" annually since 2007, except in 2013 when weather prevented Catalina Express ships from operating. But otherwise, Two Harbors is our island paradise. ■

Below: Aerial view of Two Harbors at Catalina Island's isthmus, looking southwest. Yellow triangle (center) shows location of PVARC's K6PV/6 IOTA station and cabins. PHOTO: GOOGLE EARTH



PVARC's October HF Enthusiasts Group had more unusual things to show and discuss; next HF meeting is November 10

The October PVARC HF Enthusiasts Group meeting had more than the usual share of unusual ham radio topics (notes below provided by Ray Day, N6HE).

Mark KM6IQP reported he will try the Icom IC-7300's SWR-mapping capability on his new Palomar endfed antenna; he has a Palomar end-fed that needs tweaking on 40M.

Ray N6HE related a story of his XYL's computer suddenly loudly announcing "You've got mail!" multiple times while he was in the next room on 20M CW running power. Out came the FT-240 Mix 31 toroids – and all's well that ends well. Additionally a wild bird flew into the ham shack from outside, with the bird

fluttering and banging around with the family dog going nuts interrupting Ray running a CW pile-up!

Clay AB9A brought his homebrew FPGA board inspired by N6WIN's presentation at our October monthly meeting (see photo at right.) He reported also working on getting detailed operating parameters (e.g., PA temp, input voltage, etc.) out of his Flex 6400 – he has the command-line results; next is getting the info to show graphically. He finally worked Bolivia (and had it confirmed on LoTW the same day) and after a lot of stalking of the two stations he saw repeatedly spotted, but couldn't hear yet.

Mike AF6VT reported he went to a talk by Norm Thorn K6UU on high-altitude ham-equipped balloon launching/tracking/recovery.

Bob AC6RM is persevering through a condo remodel and evaluating KW autotuners, hopefully finding a remotable one. Main contenders, he said, are the MFJ-998 and German Stockcorner JC-4.

Don NA6Z has been experimenting with 100% duty cycle power de-rating of his Palomar end-fed antenna. 100% duty cycle use seriously de-rates almost any end-fed transformer box, we all agreed. Perhaps better ventilation? Stay tuned...

Malin KO6MD brought a QRP designed-forportable-operation hand key – now we know why it's called a "hand key' – this is a mini J-38. Cute l'il fella (see photo lower right).





Continued on next page ▶

Top: AB9A FPGA board.. **Bottom:** Malin, KO6MD, showed this mini-hand key...it fits in one's hand. PHOTOS: MALIN DOLLINGER, KO6MD

PVARC's October HF Enthusiasts Group had more unusual things to show and discuss; next HF meeting is November 10

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Don WG6E gave a detailed accounting of his neighbors' less-than-accurate-in-almost-every-way shot at technically shooting down Don's legal upcoming tower installation. Brought quite a few chuckles. The neighbors even talked about peacocks sitting on the tower perhaps violating the local noise ordinance.

Jerry NG6R brought his copy of the new multi-volume 2019 ARRL Handbook – looks quite substantial and seems very well organized (see photo, right). He also described his assembly of 30(!) NBEMS hardware kits for the Sheriff Stations' L.A. County Disaster Communications Service use throughout L.A. County.

Neal N6YFQ reported he is building a dual (local and UTC) digital clock – he'll bring it next time.

Brian K6BRN said he has worked 95 countries on FT8 – and even has had great success on 80M FT8. He also works 60M and 160M from his 50' x 150' Manhattan Beach lot.

There was also much discussion about end-fed antennas. The next HF Enthusiasts Group meeting is 10:00 am-Noon on Saturday, November 10, in the Palos Verdes Library main branch's Purcell Room. ■

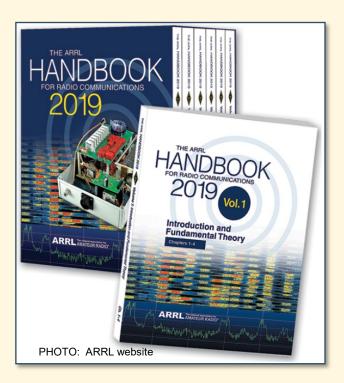




PHOTO: DIANA FEINBERG, AI6DF

About our Pt. Vicente Lighthouse photos....

Since our November 2018 meeting topic is about Pt. Vicente Lighthouse it might be informative to know about photographing it. Your **QRO** Editor can share quite a bit of advice.

First, from shortly before sunset to late dusk most days you need a heavy-duty tripod to brace your camera. Unseen in our photos there's almost always a strong breeze as land begins cooling around sunset. Lightweight tripods (or handholding) will definitely shake from wind.

Second, when taking time-exposure photos between sunset and total darkness you will want to use a shutter-release cable to avoid camera shake. With a single-lens reflex camera it's best to lock the mirror up and use only the electronic shutter to avoid additional vibration.

Third, finding other interesting camera angles can be challenging because of numerous palm trees planted decades ago that now block seeing much of Pt. Vicente Lighthouse's lens.

Lastly, your photos won't always appear razor-sharp even with the best lenses due to ocean spray or coastal moisture in the air. Also remember parking nearby isn't allowed from one hour after sunset until one hour before sunrise. But have fun photographing there.

Desoldering technique using wicking Helpful technical hint

By Jerry Kendrick, NG6R

Soldering is so much a part of amateur radio, we generally take for granted that most fellow amateurs have achieved some level of expertise in this ham radio rite of passage. What we don't generally assume, however, is that most hams have mastered the art (and science) of desoldering, i.e., carefully removing components that previously have been soldered into place. The need for this skill is especially acute when attempting to remove (and keep intact) multi-pin components from a printed circuit board (PCB), like the 14-pin integrated circuit (IC) shown in Figure 1. Such a need was highlighted in a recent **QRO** article (page 6 http://n6rpv.net/pvarc/2018QRO/QROSep2018.pdf).



Figure 1. Solder side of Astron power supply voltage regulator board with 14-pin LM723 integrated circuit shown prior to removal

The challenge with multi-pin component removal is that if one attempts to remove the component by heating the existing solder on the pins "all at once," the solder on some pin(s) will re-harden before solder on all the other pins can be melted. Getting all the pins heated to solder-melting temperature at the same time, so that the part can be pried off the board, may be virtually impossible. This frustrating "pin chase" usually ends by concluding that the residual solder around all the pins first needs to be completely removed, not simply melted, before attempting to remove the part.

One method sometimes used to accomplish this task is a desoldering pump, aka "solder sucker," like that shown in Figure 2. The pump action is initiated by pushing in the plunger; the tip of the pump is placed next to the small area of solder to be removed; the solder in that small area is heated to melting temperature with a soldering iron; and, the pump plunger is sharply released by pushing a trigger on the side of the pump; thus, the solder ball is sucked up into the pump body and away from the board. While this approach is lauded by some, our personal experience is that wicking the solder from the board, while taking a little longer, results in a cleaner surface free of residual solder.

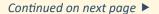




Figure 2. Stock Internet photo of typical desoldering pump aka "solder sucker," one method for removing solder from an existing solder connection

Desoldering technique using wicking Helpful technical hint

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Wicking is a technique that uses capillary action to "attract" the melted solder away and into a fine-mesh braid of copper. The narrow copper mesh braid comes in a small roll like that shown in the left panel of Figure 3. The tip of the braid is first dipped into a tub of non-acidic soldering flux—maybe a quarter inch or so. Then, just the tip of the fluxed braid is placed on the solder ball to be removed and the braid and solder ball are heated simultaneously, as shown in the right panel of Figure 3. When the solder begins to melt, it will be "pulled" or "wicked" up into the copper mesh and will migrate a short distance up the braid. The soldering iron is set aside momentarily and the braid tip that is now infused with old solder is trimmed away with scissors or sharp diagonal cutters. Then, the braid tip is re-dipped into flux and moved onto the next solder ball to be removed. This process is continued until all the solder has been removed. Some soldered pins may need a couple of applications of this technique.

Also, for stubborn solder pads, a small application of new solder prior to using the braid might free up the solder joint and make the old solder wick away more easily. The procedure is very straightforward and when done correctly, this technique is quite effective in removing virtually all of the surface solder around a through-pin on a PCB.







Figure 3. (left) Roll of fine-mesh copper braid, used to "wick" away melted solder; (center) Small container of rosin soldering flux into which the tip of the copper braid is dipped prior to each wicking attempt (very important!); (right) Hot soldering iron and braid tip are simultaneously placed onto the solder ball that is to be removed; note the flux that has soaked into the braid a few millimeters up from the tip of the braid.

Whether the component to be removed is intended to be retained or has failed and can be destroyed, this wicking technique is still applicable. For the latter case, however, the component itself can be destroyed on the board by crushing or cutting away the pins as they penetrate the top side of the PCB. Then, the individual pins can be extracted, sometimes without the need for wicking, i.e., by simply melting the solder and pulling out the through-pin with needle-nose pliers or tweezers. But, if the intent is to test and perhaps re-use the component, this wicking technique is a reliable method for removing solder prior to component extraction.

PVARC Club News

PVARC badges now ready for pickup at November 1 meeting

The PVARC's recent offer for up to 25 club members getting a discounted club badge during September and October resulted in 22 orders.

Gary Lopes, WA6MEM, has the following new badges ready for distribution at our Nov. 1 monthly meeting:

- K6BRN
- K6DAH
- K6GHL
- KC6ROX
- KI6EAI
- KI6YMD
- KM6IQP
- KM6QXC
- KO6MD
- N6CGS
- N6XJM
- W6BMD
- WD6Y
- W6GEZ (in process as of QRO deadline)
- WJ1P / DU1X

Gary distributed additional discounted badges at our October club meeting and in one-to-one meetings.

Thank you to everyone who took advantage of this onetime opportunity. We hope more PVARC members will get to know and recognize their fellow members as a result.

Embroidered PVARC patches available at meet-



able at meetings

PVARC club patches are available at our monthly meetings for \$4 each. You may sew these onto 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, Al6DF

Vice President Ray Day, N6HE

Treasurer Peter Landon, KE6JPM Secretary Ron Wagner, AC6RW Directors Clay Davis, AB9A Gary Lopes, WA6MEM

Past Vice President Mike Caulfield, AF6VT

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K6PV QSL Manager
K6PV Repeater Trustee
LAACARC Delegate
Jeff Wolf, K6JW
Mel Hughes, K6SY
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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Website: www.k6pv.org

Mailing Address:

Palos Verdes Amateur Radio Club
PO Box 2316

Palos Verdes Peninsula, CA 90274-8316

Monthly Meetings:

1st Thursday (except August and December) 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"): Club: K6PV, 447.120 MHz (-), PL 100.0, CTCSS "PV-West": K6IUM, 449.980 MHz (-), PL 173.8, CTCSS

To order a Club badge:

Gary Lopes, WA6MEM, gary@wa6mem.com

To order a Club jacket or patch:
Dave Scholler, KG6BPH, 310-373-8166

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Front page photo — Pt. Vicente Lighthouse at sunset just before extensive lightning and thunderstorm on Friday, October 12, 2018. PHOTO: DIANA FEINBERG, Ai6DF

PVARC Club News

PVARC Holiday Dinner reservations being taken through November 26

Our 2018 Holiday dinner at Los Verdes Golf Course in Rancho Palos Verdes on Thursday, Dec. 6, has a reservation deadline of 2 pm, Monday, Nov. 26. That's when we must provide our headcount and final payment. Spouses are welcome to attend but it's no problem for members to come solo.

Since our dinner was announced we have an additional menu item at no extra cost. Besides our two salads there will now also be a fresh fruit platter. The dinner invitation and menu, along with RSVP form, appear on page 11. Our menu is again a plentiful self-serve buffet...and this year with plenty of dessert cakes as well.

Speaking after dinner is Joanne Michael, KM6BWB, a Manhattan Beach teacher presenting her high-altitude balloon projects involving elementary school students. Our club's W6AM Rhombic Award recipient will also be named.

And lastly...we'll have our eagerly-awaited prize drawings. Each dinner attendee will receive one ticket with an equal chance of winning. No additional tickets will be sold. You might win a prize significantly exceeding the cost of your dinner.

Helpful guidelines when submitting QRO articles

Our **QRO** newsletter welcomes articles about technical subjects and PVARC member activities.

To facilitate layout and editing please send your article as two separate files: 1) all the text as a straight Microsoft Word file and 2) any photos, illustrations, or diagrams in a second file or as separate JPEG files. If possible please keep the text portion to not exceed 800 words.

QRO's Dept. of Errors and Omissions

We strive for 100% accuracy in each issue but if you notice any errors or omissions in **QRO** please advise your **QRO** Editor, Diana AI6DF, at: ai6df@arrl.net. ■

WELCOME NEW MEMBERS OF THE PALOS VERDES AMATEUR RADIO CLUB IN 2017-2018

Jeff Wolfe, KM6GYB

George Nestojko, WA6YBR

Irene Turner, KM6LGU

Dave Turner, KM6LGX

Don Wilt, WG6E

Don Putnick, NA6Z

George Rizkalla, KM6OXX

Alfred Visco, KM6OPB

Noel Park, KM6OPA

Michael Leyba, KK6KCH

John Tsohas, KM6OPE

Gregg Perkins, KM6OPD

Thomas Wynne, KM6QVW

Frank Attenello, KM6QVU

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, KM5DI

Ellen Tessitore, N6XJM

Michael Vulpillat, KJ6RVU

Brian Clebowicz, K6BRN

PVARC Club News

PVARC website re-design still underway

We're getting closer to having a completely new PVARC website at www.k6pv.org.

The PVARC Board of Directors has been working since early this year with our webmaster Kel Vanderlip, W6KCV, to use new web tools for enhancing our website utility. We are especially focusing the PVARC's website to have easier navigation and more design congruency with our **QRO** monthly newsletter.

Other website options in a second phase is providing for additional media formats such as video and audio, indexing of **QRO** articles, and easy posting of photos and technical content. We are very thankful for the work our previous webmaster John Freeman, WW6WW, provided for more than a decade before turning over the website to Kel in early 2017. In the meantime, we also greatly appreciate fellow member Dale Hanks, N6NNW, providing free hosting for the PVARC's website after we moved from the www.palosverdes.com hosting service in late 2016.

PVARC 2019 dues renewal to have PayPal option

In response to member inquiries and practices at some other amateur radio clubs the PVARC Board of Directors has decided to initiate a PayPal option for club dues and donations starting with the 2019 calendar year.

We have some technicalities to work out, including how to factor in PayPal fees that average slightly over 4% of the transaction value. Some groups add a small incremental fee to cover PayPal transaction costs and we are exploring whether to have such an increment. Adopting PayPal will also make our Treasurer's job easier by resulting in far fewer checks needing deposit and an easier audit trail. For members an added benefit is that PayPal has a credit card payment option regardless of whether PayPal is linked to a bank account. Stand by for further details.

Palos Verdes Half-Marathon, Nov. 17, is the PVARC's next public service event

The Palos Verdes Half-Marathon and 10K on Saturday, November 17, is the PVARC's final 2018 public service event. PVARC member Steve Collins, KI6TEQ, is overseeing our Half-Marathon coverage and reports that all operator positions are filled. But contact Steve at skibear90275@verizon.net if interested and you are available to fill in for another operator who cannot make it.

This year's route again starts at Pelican Cove near Pt. Vicente Lighthouse on PV Drive South to Wayfarer's Chapel before turning northbound along coastal streets in Rancho Palos Verdes and Palos Verdes Estates. Only 1,700 runners are allowed to compete.

This half-marathon started as a full 26.2-mile marathon in the 1960's and was the 2nd-longest continuously operated Marathon in the U.S.(behind only the Boston Marathon) until the Palos Verdes Marathon became a Half Marathon in 2014. ■





Please Join Us at the Palos Verdes Amateur Radio Club 2018 Holiday Dinner

Los Verdes Golf Course
7000 W. Los Verdes Drive, Rancho Palos Verdes, CA
Thursday, December 6, 2018
Meet and Greet beginning at 6:30 pm,
Dinner at 7:00 pm, followed by Program and Prizes

Dinner Buffet:

Garden Salad with choice of two dressings

Spinach Salad with Feta Cheese and Pine Nuts

Fresh Fruit Platter

Fresh Baked Salmon with Sauce

Slow-Roasted Tri-Tip Beef with Mushroom Merlot Sauce

Red Roasted Potatoes

Seasonal Vegetables

Warm Rolls and Butter

Plenty of Dessert Cake: Chocolate Layer and two other types of Cakes

Coffee, Decaf Coffee, Hot Tea, Iced Tea, and Water

Palos Verdes Amateur Radio Club 2018 Holiday Dinner

Los Verdes Golf Course, Rancho Palos Verdes Thursday, December 6, 2018

Price per person: \$45 Number of people attending:
I would like to also donate: \$5 \$10 \$15 Other amount
Total amount enclosed: \$ Please make check payable to the Palos Verdes Amateur Radio Club (All donations are applied towards club expenses for the evening.)
Nama
Name
Call Sign

Please pay at our monthly meetings or by mailing to: PVARC, PO Box 2316,

Palos Verdes Peninsula, CA 90274

PVARC Calendar — November 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				PVARC's Nov. meeting, 7:30 pm, Hesse Park. What's Next? Group, 6:30 pm	2	Ham license classes at Hesse Park: 9:30 am Technician; 1:30 pm General
4	5	6 Election Day & Night PVARC Weekly net, 7:30 pm	7	8	9	10 Ham license classes at Hesse Park; PVARC HF Enthusiasts meeting, PV Library, 10 am
11	12	13 PVARC Weekly net, 7:30 pm	14	15 Statewide Medical & Hospital exercise, 7:00 am-Noon (ARES members)	16	17 PV Half Marathon, AM PVARC ham tests, 10 am, Hesse Park
18	19	20 PVARC Weekly net, 7:30 pm	21	22 Thanksgiving Day	23	24 W6TRW Swap Meet, 7:00 am- 11:30 am, at Northrop Grumman in No. Redondo
25	2:00 pm: Last day for PVARC Dec. 6 Holiday Dinner reser- vations	27 PVARC Weekly net, 7:30 pm	28	29	30	

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

Two Free Amateur Radio Courses

FCC <u>"Technician"</u> course (entry level) FCC <u>"General"</u> course (2nd level) Each course is 2 sessions

The sessions will be on 3 November and 10 November 2018

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

General 1:30 PM to 5:00 PM both Saturdays

The FCC tests will be 10:00 AM to noon on 17 November 2018

At the start of the 3 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.

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

There is <u>no fee</u> 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 \$22 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 em	nails will be sent to	the applying member only)
License Call:	License Class:	_ARRL Member?_	Birth Mo./Day:
Other amateur rad	io groups you belong to:		
Additional Househ	old and/or Family Members (if	Applicable):	
Name	Call Cla	ss ARRL	Birth Mo./Day:
Name	Call Cla	ss ARRL	Birth Mo./Day:
Name	Call Cla	ss ARRL	Birth Mo./Day:
		Individual	membership (\$15.00) \$
	Househ	old and/or Family	membership (\$20.00) \$
	Additiona	I donation to supp	ort PVARC activities \$
C	ash: or Check #:	Date	TOTAL \$
Please make checks	payable to: Palos Verdes Amateur	Radio Club; Dues ba	sed on January 1 st to December 31 st ye
All	New and Renewal Member	applications mu	st be signed below.
ccepting membersh	new or renewal membership in the ip I agree to abide by the Club's at/pvarc/constitution.htm or upon	constitution and by-	teur Radio Club and understand that laws (available on-line at:

Signature: Date: ______

Family Member Signature: Date: ______

Family Member Signature: Date: _______